Section 7. WILDLIFE AND FISHERIES

7.1. INTRODUCTION

This section provides an overview of the wildlife, fisheries, and wetland resources that may occur within the proposed Project Area. To identify the existing resources, agency consultation, desktop analyses, and field surveys were completed to document the presence and evaluate the condition of the resources in the Project Area in accordance with the Site Law guidelines. The following subsections describe the results of the surveys and the Project's plans to avoid, mitigate, and minimize potential impacts to these resources.

The Project Area is located on privately owned commercial agriculture and forestry land in the Town of Columbia and Unorganized Territories of T18 MD BPP and T24 MD BPP in Washington County, Maine. The Project Area and the surrounding area have a long history of use for large-scale commercial agriculture and forestry practices and timber growth.

7.2. UPLANDS

7.2.1. FEDERAL REGULATIONS

There are four federal laws that are applicable to fish and wildlife resources found within the Project Area: the Clean Water Act (CWA), the Endangered Species Act (ESA), the Bald and Golden Eagle Protection Act (BGEPA), and the Migratory Bird Treaty Act (MBTA).

The CWA regulates the discharge of dredged or fill material and certain discharges associated with excavation into the waters of the U.S., including wetlands. The Army Corps of Engineers (ACOE) regulates these activities under Section 404 of the Clean Water Act (33 CFR 323).

The ESA's primary purpose is to protect and recover imperiled species and the ecosystems upon which they depend. The U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) are the responsible federal agencies for the administration of the ESA.

The BGEPA provides protection for bald and golden eagles by prohibiting the take (defined as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb), possession, sale, purchase, barter, offer to sell, transport, export or import, of any bald or golden eagle without a permit.

The MBTA (16 U.S.C. 703-712) prohibits the take (including killing, capturing, selling, trading, and transporting) of protected migratory birds without prior authorization by the USFWS. Generally, the migratory bird species protected include native bird species listed in international conservation treaties that were implemented for the MBTA.

The USFWS Land-Based Wind Energy Guidelines (Guidelines) assist developers in identifying species of concern that may potentially be affected by a proposed project, including migratory birds; bats; bald and golden eagles and other birds of prey; and listed, proposed, or candidate endangered and threatened species. The Guidelines use a tiered approach for assessing potential adverse effects to species of concern and their habitat. The tiered approach allows efficient use of developer and wildlife agency resources with increasing levels of effort. Surveys and studies for the Project followed the Guidelines.

7.2.2. STATE REGULATIONS AND PROTECTED RESOURCES

Natural Resources Protection Act

Wetlands in Maine are regulated by the Maine Department of Environmental Protection (MDEP) under the Natural Resources Protection Act (NRPA). MDEP requires wetlands to be delineated pursuant to a prescriptive methodology that is described in Exhibit 7-1. In Maine, significant wildlife habitat is also protected under the NRPA 38 M.R.S.A § 480-A et seq.

Significant Wildlife Habitat

As defined by the Maine NRPA (38 M.R.S.A § 480-A et seq.), Significant Wildlife Habitat includes the following resources as mapped by Maine Department of Inland Fisheries and Wildlife (MDIFW) or located within any other protected natural resource:

- Habitats for state and federally threatened and endangered (T&E) species;
- Mapped high and moderate value Deer Wintering Areas (DWAs);
- Mapped seabird nesting islands, as defined by MDIFW;
- Critical spawning and nursery areas for Atlantic salmon, as defined by the Atlantic Salmon Commission;

And the following areas to the extent they meet applicable criteria or are within any other protected natural resource:

- Significant vernal pools;
- High and moderate value Inland Waterfowl and Wading Bird Habitat (IWWH), including nesting and feeding areas; and
- Shorebird nesting, feeding, and staging areas.

The Project Area contains the following Significant Wildlife Habitats that are outlined below.

Significant Vernal Pool

Vernal pools or "spring pools" are shallow depressions that usually contain water for only part of the year. Maine NRPA Chapter 335 identifies the criteria for identifying Significant Vernal Pool Habitat. Significant Vernal Pools (SVPs) are a subset of vernal pools with particularly valuable habitat. Not all vernal pool habitats are considered significant. A vernal pool habitat is determined significant because (1) of the abundance levels documented in any given year of fairy shrimp, blue spotted salamander, spotted salamanders, and wood frogs, determine the significance of a vernal pool habitat; (2) presence of a state-listed threatened or endangered species that include but are not limited to, Blanding's turtles, Spotted Turtles and Ringed Boghaunter dragonflies. The other rare species that must be considered during vernal pool surveys are limited to: Ribbon Snakes, Wood Turtles, Swamp Darner Dragonflies and Comet Darner Dragonflies.

Significant Vernal Pool habitat includes the vernal pool itself and the area within a 250-foot radius of the spring or fall high water mark of the pool, which is considered Critical Terrestrial Habitat (CTH). Since 2007, SVP Habitat has been protected by law under the NRPA. An activity in, on, or over these areas must avoid unreasonable impacts on the SVP habitat and requires approval from the MDEP, through a Permit by Rule or individual NRPA approval.

Inland Waterfowl and Wading Bird Habitat

Significant Wildlife Habitat includes high and moderate value waterfowl and wading bird habitat, and shorebird feeding and staging areas that (1) are within other protected natural resources, such as wetlands, or (2) meet criteria specified in rules.

Inland Waterfowl and Wading Bird Habitats include a 250-foot wide zone surrounding the wetland complex. The mapped waterfowl & wading bird, and shorebird habitat include the 250-foot buffer areas.

Deer Wintering Areas

Deer Wintering Areas are established through rule. Pursuant to the rule, five criteria have been established for the identification of Deer Wintering Areas in the State and must include:

A. Observation by department personnel;
B. Deer tracks;
C. Evidence of current or past browsing;
D. Deer pellet depositions; or
E. Bedding sites.

DWAs that are moderate or high-value and are mapped by MDIFW, or are located within another protected natural resource, are regulated under NRPA.

Maine Endangered Species Act

The Maine Endangered Species Act (Maine ESA) also has provisions regarding the protection of state threatened and endangered species. The Maine ESA gives authority to the MDIFW to designate species as endangered or threatened, designate “essential habitat” for listed species, develop guidelines for the protection of listed species, and establish necessary programs for the conservation of any threatened and endangered species. The statute prohibits the import, export, harassment, hunting, take, trapping, or possession of state listed species.

7.3. AGENCY CONSULTATION

Downeast Wind performed early and frequent consultation with the Maine Natural Areas Program (MNAP), MDIFW, and USFWS, including letter information requests (2015 and 2021) and in person meetings and conference calls (2016-2021) to inform resource surveys and agency staff of study results, Project updates, and proposed measures to avoid, minimize and mitigate impacts. Meetings and conference calls were held on the dates outlined in Table 7-2. All MNAP related consultation and studies related to rare, threatened and endangered (RTE) plants are summarized in Section 9.

Table 7-1. Summary of Agency Consultation

Date	Participants	Purpose and Takeaway
October 16, 2015	Downeast Wind, Stantec, MDIFW, MDEP, and MNAP	Initial Project information requests sent.
February 23, 2016	Downeast Wind, Stantec, MDIFW, and USFWS	Discuss wildlife surveys and study plans.
March 3, 2016	Downeast Wind, Stantec, and USFWS	Discuss potential project impacts to federally listed species.
January 19, 2017	Downeast Wind, Stantec, and USFWS	General Project update and review of bird and bat studies.
March 2, 2017	Downeast Wind, Stantec, and MDIFW	Project update, review 2015-2016 survey results, and discuss 2017 study plans.
May 31, 2017	Downeast Wind, Stantec, and MDIFW	Project update, review study results for bats and upland sandpipers.
July 27, 2017	Stantec and MDIFW	MDIFW accompanied Stantec in the field for grassland bird surveys.
January 18, 2019	Downeast Wind, TRC, Stantec, MDIFW, MDEP, and LUPC	Project update, review completed studies, and upcoming planned studies. MDIFW identified bats, migrating songbirds, upland sandpipers, and whimbrels as species of concern.
February 14, 2019	TRC and MDIFW	Meeting to discuss eagle surveys.
February 20, 2019	Downeast Wind, TRC, Stantec, MDIFW, and USFWS	Meeting to discuss potential impacts to upland sandpiper and whimbrels as well as research on these species from other sites in North America. Additionally, included discussion and approval of methods for eagle use and eagle nest surveys.
April 26, 2019	Stantec and MDIFW	Meeting with MDIFW to discuss results of field surveys for upland sandpipers and whimbrels, as well as research on these species from other sites in North America.
June 28, 2019	Downeast Wind, TRC, Stantec, and MDIFW	Letter from MDIFW providing summary of wildlife and fishery resource issues.
November 19, 2019	Downeast Wind, TRC, Stantec, MDEP, MHPC, USACE, MDIFW, LUPC, and MNAP/DACF	MDEP pre-application meeting. Downeast Wind introduces deterrent use and the curtailment regime envisioned.
December 17, 2019	TRC and USFWS	Phone call and email with USFWS and TRC to discuss eagle survey progress and completion. USFWS requested additional surveys for January and February.
January 17, 2020	Downeast Wind, Stantec, and MNAP	Review results of 2016 and 2019 rare plant surveys and discuss Project avoidance and minimization measures.
August 19, 2020	Downeast Wind, TRC, Stantec, MDIFW and MNAP	Update information request sent.

Date	Participants	Purpose and Takeaway
September 17, 2020	Downeast Wind, TRC, MDIFW	MDIFW request for information response.
October 8, 2020	Downeast Wind, TRC, Stantec, and MIDFW	Wood turtle surveys in the Pleasant River as a response to the updated information request.
March 2, 2021	Downeast Wind, TRC, Stantec, and MNAP	Review results of 2020 rare plant surveys and Project impacts.
March 4, 2021	Downeast Wind, TRC, Stantec, MDIFW, and MDEP	Discussion of proposed mitigation measures with MDIFW.
March 17, 2021	Downeast Wind, TRC, and MDEP	Review NRPA Project impacts.

Discussion of agency consultations and the federal and state law governing sensitive species follows.

7.3.1. SUMMARY OF CONSULTATION AND SPECIES

Federally Protected Species and Designated Critical Habitats

The USFWS Information for Planning and Consultation (IPaC) identified two federally listed species that have the potential to occur within the Project: the federally endangered Atlantic salmon (*Salmo salar*) and the federally threatened northern long-eared bat (*Myotis septentrionalis)*. In addition, the Project is within designated critical habitat for the Atlantic salmon (IPaC. March 23, 2021).

Atlantic Salmon

The Atlantic salmon was federally listed as endangered on November 17, 2000 (65 FR 69459). The federal listing identified the Gulf of Maine Distinct Population Segment (GOM DPS) as including all anadromous Atlantic salmon found east of the Androscoggin River to the Dennys River. This included three watersheds in the vicinity of the proposed Project Area: the Machias River, Pleasant River, and Narraguagus River watersheds. Critical habitat for the species was designated by the NOAA for the GOM DPS on June 19, 2009 (74 FR 29299). The entirety of the Project Area is within watersheds that are designated critical habitat for the GOM DPS of Atlantic salmon and includes all freshwater bodies that are part of the freshwater range of the GOM salmon at any life stage unless above an impassable fall (50 CFR Parts 17 and 224).

Northern Long-Eared Bat

The northern long-eared bat was listed as threatened on April 2, 2015 (50 CFR Part 17) under the ESA. This listing included a temporary 4(d) rule, with a final 4(d) rule effective February 16, 2016 (81 FR 19001922). The listing was based upon the rapid population decline of the species due to the occurrence of White Nose Syndrome. The 4(d) rule for northern long-eared bat prohibits clearing of trees in June and July but does not prohibit any other construction or operation activities from wind farms.

Eagles

Bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are protected under the BGEPA (16 U.S.C. 668-668c).

State Protected Species and Resources

MDIFW provided a list of RTE wildlife species or habitats found within the vicinity of the Project, which included state endangered little brown bat (*Myotis lucifugus*) and northern long-eared bat, state threatened upland sandpiper (*Bartramia longicauda*) and eastern small-footed bat (*Myotis leibii*). These species are listed under the Maine Endangered Species Act (12 M.R.S.A Chapter 925).[3] Species of special concern, which are established by MDIFW policy and in consultation with MDIFW, include whimbrel (*Numenius phaeopus*), bald eagle, red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus), silver-haired bat (Lasionycteris noctivagans*), and tricolored bat (*Perimyotis subflavus*).

Significant Wildlife Habitat

Significant Wildlife Habitats are protected by state law (38 M.R.S.A 480). Downeast Wind consulted with the MDIFW during the initial and updated information request to help identify Significant Wildlife Habitat in or near the Project Area (see Table 7-2).

Possible Significant Wildlife Habitats identified with the potential to occur in the Project Area consist of:

- Atlantic Salmon – critical spawning and nursery areas as defined by the Department of Marine Resources;
- Significant Vernal Pool Habitat; and
- Inland Waterfowl and Wading Bird Habitats (IWWHs).

Occurrence of these mapped habitats within the Project Area are described in depth below in Section 7.4.3.

Upland Sandpiper

The upland sandpiper was state listed as threatened in 1997 due to small populations, regional population declines, and loss of habitat across the Northeast (MDIFW 2011). Upland sandpipers can be found in burned fields, hayfields, tilled fields, highway rights-of-way, shooting ranges, playing fields, and airports (White 1983). The species prefers large fields, ideally greater than 150 acres (60 hectares) (MDIFW 2011). Upland sandpipers rarely occur in fields less than 50 hectares and are far more likely to occur in fields greater than 200 hectares (Weik 1999; Vickery et al. 1994). In Maine, upland sandpipers breed primarily in grassland-barrens recently managed for commercial blueberry production involving primarily mowing and burning (Vickery et al. 1994; MDIFW 2011). Vegetation in these barrens is relatively uniform and dominated by lowbush blueberry (*Vaccinium angustifolium*) with lesser amounts of graminoids, shrubs, and forbs.

Based on habitat mapping by MDIFW, approximately 11,005 acres (4,454 ha) of available upland sandpiper habitat is located immediately adjacent to the Project footprint. This area includes fields that are within or intersected by the Project but extend well outside of the Project Area boundary.

Whimbrel

The whimbrel is listed as a state species of special concern due to the statewide presence of less than 1,000 individuals that occur in fewer than 12 known occupied sites, continued threats to habitat across their range, and regional population declines (MDIFW 2016). In Maine, whimbrel

[3] Available online: http://www.mainelegislature.org/legis/statutes/12/title12ch925sec0.html

pass through during fall migration, concentrating at inland feeding sites where they forage in fields during the day and/or at communal roosts at night (Ferns et al. 1979). Active blueberry barrens are particularly important inland sites for this species because whimbrels gather in these fields to eat berries and insects.

Based on surveys conducted by MDIFW between 2015-2017, whimbrels appear to prefer blueberry barrens comprised of dense blueberry fields lacking windrows. In the Project vicinity, whimbrels are known to move between coastal mudflats in nearby towns, offshore islands, and the blueberry barrens during daily roosting and foraging activities (MDIFW 2018b). The blueberry barrens in the Downeast Region (Hancock and Washington Counties) are estimated to annually support approximately 100–200 whimbrels (Tudor 2017).

Nocturnal Migrants

The coastal plain is an important region for millions of migrating birds during both the spring and fall migration periods and is an area of significant concern to the MDIFW (MDIFW 2018a). In their June 28, 2019 letter, MDIFW indicated that the concentration of migratory birds in the coastal plain "is greater than in other areas of Maine, and the seasonal and daily movement patterns are unique for represented guilds." Additionally, the MDIFW maintains that records from nocturnal radar monitoring surveys in Maine to date have indicated that Maine's coastal plain is subject to some of the highest passage rates recorded in New England.

Bats

Eight species of bats occur in Maine. Little brown bats and northern long-eared bats are state-endangered, eastern small-footed bats are state-threatened, and the remaining five species are considered Species of Special Concern in Maine. White Nose Syndrome has caused dramatic declines in Maine bat populations since it was detected in the state in 2011.

Fisheries Habitat

Based on outreach to the MDIFW and to the USFWS, the only fisheries of concern within the Project Area are coldwater fisheries which include wild brook trout (*Salvelinus fontinalis*) and Atlantic salmon and coldwater fish habitats.

Brook trout populations are declining across their historic range (Maine to Georgia). Maine is the only state with extensive intact populations of wild, self-producing brook trout in lakes and ponds. Maine's wild brook trout waters are found throughout the state.

Atlantic salmon are listed as an endangered species by the USFWS. The Project Area is located within the Pleasant River watershed, Narraguagus River watershed, and the Machias River watershed, which are all considered Distinct Population Segment Habitats and each river contains designated critical habitat.

7.4. PROJECT SURVEYS

Agency consultation with MDIFW and USFWS identified the need for site specific surveys. Survey methods were approved by MDIFW and USFWS and were implemented based on agency recommendations.

Studies and surveys performed for the Project included:

- Rare plant and natural community surveys (Exhibit 9-1);
- Wetland and waterbody surveys (Exhibit 7-1);
- Vernal pool surveys (Exhibit 7-2);
- Nocturnal migrant radar surveys (Exhibit 7-3);
- Acoustic bat surveys (Exhibit 7-4);
- Breeding bird point count surveys (Exhibit 7-5);
- Grassland bird surveys (Exhibit 7-6);
- Aerial nest surveys (great blue heron and bald eagle) (Exhibit 7-7);
- Eagle nest monitoring surveys (Exhibit 7-8);
- Eagle use surveys (Exhibit 7-9);
- Raptor migration surveys (Exhibit 7-10);
- Inland waterfowl and wading bird habitat desktop analysis;
- Deer Wintering Areas desktop analysis; and
- Critical habitat for Atlantic salmon desktop analysis.

7.4.1. RARE PLANTS

See Section 9 and Exhibit 9-1.

7.4.2. WETLANDS AND WATERBODIES

This section provides an overview of the data collected during wetland and waterbody surveys for the resources that lie within the Project Area. Wetlands and waterbodies were assessed in 2016 and 2017, and in the spring and fall of 2019 and summer of 2020. The Wetland and Waterbodies Report is included in Exhibit 7-1.

Uplands

During wetland surveys data was collected on uplands following ACOE Wetland Delineation Manual (USACE 1987) (Manual) and the Regional Supplement to the USACE Wetland Delineation Manual: Northeast Region (Version 2.0) (Regional Supplement) (USACE 2012). Natural upland forests were classified based on *Natural Landscapes of Maine: A Classification of Ecosystems and Natural Communities*. This classification was supplemented with vegetation data which was assessed and recorded during wetland field surveys conducted within the Project Area. The Project Area uplands contain large portions of actively managed commercial agricultural blueberry barrens. As a result of this management there are extensive areas of open land with blueberry plants being the primary vegetative cover. There are also areas that were formerly managed for blueberries that are reverting to forest cover in varying successional stages, and forests that have been subject to extensively large-scale timber management practices. Blueberry barren vegetation consists of lowbush blueberry, bracken fern (*Pteridium aquilinum*), sheep American-laurel (*Kalmia angustifolia*), sweet-fern (*Comptonia peregrina*), and wintergreen (*Gaultheria procumbens*). The upland forests, which are largely early successional or second growth, are a mixture of red oak (*Quercus rubra*), Eastern white pine (*Pinus strobus*), red pine (*Pinus resinosa*), gray birch (*Betula populifolia*), red maple (*Acer rubrum*), and pin cherry (*Prunus*

pensylvanica) with an understory of bracken fern, sheep American-laurel, black huckleberry (*Gaylussacia baccata*), lowbush blueberry, and wintergreen.

Wetlands

Wetlands delineated within the Project Area were classified according to Cowardin et al. (1979). Identified wetlands were classified as Palustrine Forested (PFO), Palustrine Scrub-Shrub (PSS), Palustrine Emergent (PEM), and Palustrine Unconsolidated Bottom (PUB). All the resource areas identified in the Project Area are classified as palustrine systems which are non-tidal wetlands. Wetland types identified within the Project Area are further discussed in the Wetland Delineation Report (see Exhibit 7-1).

Palustrine Forested Wetlands

Palustrine forested wetlands are characterized by woody vegetation that is 6 meters tall or taller, and normally include an overstory of trees, an understory of young trees or shrubs, and an herbaceous layer (Cowardin et al., 1979). Vegetation communities for PFO wetlands in the Project Area were dominated by the following species: red maple, Eastern white pine, Eastern hemlock (*Tsuga canadensis*), red spruce, wild raisin (*Viburnum nudum*), common winterberry (*Ilex verticilata*), American witch-hazel (*Hamamelis virginiana*), speckled alder (*Alnus incana*), catberry (*Nemopanthus mucronatus*), lowbush blueberry, cinnamon fern (*Osmundastrum cinnamomeum*), interrupted fern (*Osmunda claytoniana*), sensitive fern (*Onoclea sensibilis*), sedge species (*Carex* spp.), cottongrass bulrush (*Scirpus cyperinus*), sheep-laurel, fowl manna grass (*Glyceria striata*), and steeplebush (*Spiraea tomentosa)*. In the Project Area, forested wetlands represented approximately 73.1% of wetlands.

Palustrine Scrub-Shrub Wetlands

Palustrine scrub-shrub wetlands are dominated by woody vegetation less than 6 meters in height (Cowardin et al., 1979). Vegetation communities for PSS wetlands in the Project Area were dominated by the following species: gray birch (*Betula populifolia*), yellow birch (*Betula alleghaniensis*), speckled alder, highbush blueberry (*Vaccinium corymbosum*), common winterberry, broad-leaf meadowsweet (*Spiraea latifolia*), white meadowsweet (*Spiraea alba*), bluejoint (*Calamagrostis canadensis*), leatherleaf (*Chamaedaphne calyculata*), rhodora (*Rhododendron canadense*), cinnamon fern, sensitive fern, cottongrass bulrush, and sedge species. In the Project Area, scrub-shrub wetlands represented approximately 15.6% of wetlands.

Palustrine Emergent Wetlands

Palustrine emergent wetlands are non-tidal wetlands characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. PEM wetlands usually are dominated by perennial plants (Cowardin et al., 1979) The PEM wetland cover type exists on its own as well as in conjunction with other wetland types (PSS, PFO, PUB), creating a more heterogeneous wetland system within the Project Area. Vegetation communities for PEM wetlands in the Project Area consisted of the following species: gray willow (*Salix bebbiana*), common winterberry, wild raisin, rhodora, cottongrass bulrush, steeplebush, three-way sedge (*Dulichium arundinaceum*), bluejoint, interrupted fern, cinnamon fern, sensitive fern, sweetgale (*Myrica gale*), and fringed sedge (*Carex crinata*). In the Project Area, emergent wetlands represented approximately 8.7% of wetlands.

Palustrine Unconsolidated Bottom Wetlands

The palustrine unconsolidated bottom cover type includes wetlands with at least 25 percent cover of particles smaller than stones, and a vegetative cover less than 30 percent (Cowardin et al., 1979). Vegetation communities for PUB wetlands in the Project Area consisted of the following species: broad-leaf pondweed (*Potamogeton natans*), greater bladderwort (*Utricularia macrorhiza*), uptight sedge (*Carex stricta*), speckled alder, gray birch, black spruce (*Picea mariana*), Eastern white pine, and cottongrass bulrush. In the Project Area, unconsolidated bottom wetlands represented approximately 2.6% of wetlands.

Wetlands of Special Significance

Certain freshwater wetlands are considered wetlands of special significance (WOSS). Freshwater WOSS has one or more of the following characteristics: critically imperiled community (S1) or imperiled community (S2) defined by the MNAP; Significant Wildlife Habitat as defined by 38 § 480-B(10); location near coastal wetland; location near GPA great pond; aquatic vegetation, emergent marsh vegetation or open water; wetlands subject to flooding; peatlands; and wetland area within 25 feet of a river, stream, or brook. WOSS found within the Project Area consist of:

- one wetland in a flood zone;
- four wetlands that contain aquatic vegetation or open water areas larger than 20,000 square feet;
- sixteen wetlands are in critical wildlife habitats;
- three wetlands associated with a Significant Vernal Pool;
- ten wetlands within Inland Waterfowl and Wading Bird Habitat; and
- three wetlands associated with Atlantic salmon habitat.

Streams and Other Waterbodies

No waterbodies were identified in the Project Area. A total of nineteen (19) streams were delineated within the Project Area. Of these streams, one (1) was identified as ephemeral, eight (8) were identified as intermittent, and ten (10) were identified as perennial.

7.4.3. WILDLIFE

Pre-construction surveys were conducted to understand potential impacts the proposed Project may have on wildlife. A summary of the methodology and results for surveys conducted are included below, along with a discussion of the potential impacts from the proposed Project.

Significant Wildlife Habitat

Significant Vernal Pools

Vernal pools were assessed in 2016 and 2017, and in the spring and fall of 2019 and summer of 2020. The 2019 and 2020 Vernal Pool Report is included in Exhibit 7-2.

A total of one (1) SVP depression will be directly impacted by the Project. A total of nine (9) CTHs were identified within the Project Impact Area. Of these CTHs, seven (7) of them are associated with SVPs and two (2) of them are associated with potential Significant Vernal Pools (PSVPs).

There were no observations of RTE species, or other aquatic species of special concern during the vernal pool surveys.

Inland Waterfowl and Wading Bird Habitat

A desktop analysis was completed in the summer of 2020 to identify IWWH within 250 ft of each turbine, road, or collection line. Publicly available GIS data from the MDIFW was used to identify IWWH within the Project Area. Based on the analysis, three IWWH were identified within the Project Area.

Deer Wintering Areas

A desktop analysis was completed in 2020 to identify DWAs within the Project Area. Publicly available GIS data from the MDIFW was used to identify DWAs. Based on the analysis, there are no DWAs located within the Project Area.

Nocturnal Migrants

Nocturnal radar surveys were conducted to document the abundance, flight patterns, and flight altitudes of night-migrating species. Surveys were conducted on 60 nights in fall 2015, spring 2016, and fall 2016 resulting in a total of 643 survey hours. The mean passage rate in fall 2015 was 920 (±52) targets/kilometer/hour (t/km/hr). In 2016, the mean passage rate was 469 (±39) t/km/hr in the spring and 486 (±30) t/km/hr in the fall. The overall mean passage rate for the Project was 529 t/km/hr. The passage rates documented during these surveys were consistent with the results from other nocturnal radar surveys completed in the region. For a complete discussion of these surveys, please refer to Exhibit 7-3.

Bats

Acoustic bat monitoring surveys were conducted by Stantec during two periods: fall 2015 and spring/summer/fall 2016. Surveys were completed to document seasonal patterns in bat activity, identify species composition, and evaluate relationships between bat activity and weather conditions during the study periods. “Ground detectors” were deployed 5 – 8 meters (m) above ground level (agl) and “elevated detectors” were deployed at 20 and 40 m agl on the on-site met tower during both survey periods. Ground detectors were Anabat detectors programmed to operate each night between 18:00 and 08:00. Elevated detectors were two microphones of a single SM3 detector programmed to operate each night between a half hour before sunset until a half hour after sunrise. Consistent with other preconstruction acoustic bat surveys at Maine wind projects, bat activity is greatest during low wind conditions and decreases as wind speed increases. For this reason, ground level detectors typically result in more bat calls than met tower detectors due to the difference in wind speed at or below tree height vs above tree height. Because the area of potential interaction with wind turbines and bats is at the rotor zone, data collected from elevated heights on the met tower was used to evaluate bat activity and weather conditions (wind speed and temperature).

Bat activity levels at the Project were low, and especially low from April to June and in October. Most of the bat activity (95%) was detected in July, August, and September. In addition, nearly all bat activity (96%) was documented when temperatures were greater than 50°F, and most activity (70%) occurred at wind speeds of less than 6 meters per second (m/s). Potential calls of Myotis bat species (ex. eastern small-footed bat, little brown bat, or northern long-eared bat) were detected on 2.7% (n = 13) out of a total 473 detector nights. Of these 13 Myotis detections, 12 (92%) occurred between July and September. For a complete discussion of these surveys, please refer to Exhibit 7-4.

Breeding Birds

Breeding bird surveys were performed in the Project Area using point count methods in May and June 2016. A total of 28 survey points were located inside and outside of the Project Area across six habitat categories. The results indicated that overall bird use (i.e., number/hour of observation) and species of birds observed were similar at points inside and outside the Project Area. No federal- or state-listed endangered or threatened species were detected. Special concern species observed in the Project Area included American redstart (*Setophaga ruticilla*), black-and-white-warbler (*Mniotilta varia*), brown thrasher (*Toxostoma rufum*), chestnut-sided warbler (*Setophaga pensylvanica*), eastern towhee (*Pipilo erythrophthalmus*), eastern wood-pewee (*Contopus virens*), least flycatcher (*Empidonax minimus*), rusty blackbird (*Euphagus carolinus*), tree swallow (*Tachycineta bicolor*), and white-throated sparrow (*Zonotricha albicollis*). For a complete discussion of these surveys, please refer to Exhibit 7-5.

Grassland Birds

Grassland bird surveys occurred in 2016 and 2017 during the breeding and fall staging periods. The target species of these surveys were upland sandpiper, other grassland nesting birds, and the following state species of special concern: northern harrier (*Circus cyaneus*), eastern whip-poor-will (*Caprimulgus vociferous*) and whimbrel. Surveys were conducted at point count locations within and adjacent to the Project Area using methods and objectives developed in coordination with MDIFW. During the 2016 and 2017 breeding seasons, upland sandpiper abundance within the Project Area was lower than the surveyed areas adjacent to the Project Area. The density estimate for the Project Area was 0.24 upland sandpiper per hectare. Observations were higher in fields greater than 90 acres with a lower proportion of tree wind rows. No upland sandpipers were observed at a survey point 150 feet northeast of T30.

In 2016, upland sandpiper were detected 18 times in the spring and eight times in the fall. In addition, three northern harriers, 56 vesper sparrows, and six eastern whip-poor-wills were observed. In 2017, upland sandpiper were detected 17 times. In addition, five northern harriers, 148 vesper sparrows, and two eastern whip-poor-wills were observed. For a complete discussion of these surveys, please refer to Exhibit 7-6.

Aerial Nest Surveys

Aerial bald eagle nest and heron rookery surveys were conducted in the spring of 2016, 2017, and 2019. The objective of the surveys was to locate bald eagle (*Haliaeetus leucocephalus*) nests and great blue heron (*Ardea herodias*) rookeries within four miles of the Project. Prior to conducting surveys, information on previously documented bald eagle nest locations and heron rookery locations within the survey area was obtained from MDIFW, and the status of previously identified nest and rookery locations was documented during the surveys. During the surveys, incidental observations of bald eagles, osprey (*Pandion haliaetus*), and great blue heron were recorded, and other large stick nests were also recorded. The surveys were conducted to comply with the USFWS final eagle rule (81 FR 91494, USFWS 2016) and the MDIFW Curtailment Policy and Wind Power Preconstruction Study Recommendations dated June 2015.

Great Blue Heron Rookeries

Aerial heron rookery surveys were conducted in the spring of 2016, 2017, and 2019. The objective of the surveys was to locate great blue heron (*Ardea herodias*) rookeries within four miles of the Project. One rookery was located 2.2 miles from the Project and was observed to be occupied in 2016, 2017, and 2019. No other great blue heron nests were observed in locations where nests

had been mapped previously or other wetland complexes within the Project Area during the 2016 and 2017 surveys. In 2019 Great blue heron nesting activity was observed at another, previously undocumented location approximately 1.7 miles east of the Project Area. For a complete discussion of these surveys, please refer to Exhibit 7-7.

Eagle Nests

Aerial eagle nest surveys were conducted within four miles of the then Project boundaries in 2016, 2017, and 2019. During spring 2016, a total of seven bald eagle nests were identified: two occupied and five unoccupied. The occupied nests were located 3.3 miles from the then Project boundary on the Pleasant River and 5.4 miles away from the then Project boundary on the Narraguagus River. In spring 2017, five bald eagle nests were identified: three occupied and two unoccupied. One occupied nest was located on Schoodic Lake within the then Project boundary and the other was located on the Pleasant River, 2.6 mi from the then Project boundary. In spring 2019, three known nest locations were surveyed within four miles of the then Project Boundary, and two of them were observed to be occupied. For a complete discussion of these surveys, please refer to Exhibit 7-7.

Since these surveys were conducted the Project boundary has changed. As a result, the two occupied bald eagle nests identified in the spring of 2016 are now greater than four miles from the current Project boundary. The Schoodic Lake nest identified in the spring of 2017 is located 0.6 miles from the current Project boundary; and the occupied nest located on the Pleasant River is now greater than four miles from the current Project boundary. During the 2017 surveys, the occupied nest at Montegail Pond was greater than four miles from the then Project boundary but is now two miles from the current Project boundary; and greater than four miles from the closest turbine.

Schoodic Eagle Nest Monitoring

Nest monitoring was conducted at the Schoodic Lake bald eagle nest, which is the only known active eagle nest within four miles of a turbine, from March 5, 2019 to September 6, 2019. The monitoring attempted to map any spatial use patterns and determine the distance of flight paths for the nesting eagle pair. Methods were developed in coordination with USFWS and MDIFW during a consultation meeting held on February 20, 2019.

The nest on Schoodic Lake was active during the 2019 breeding season, and the pair successfully fledged two juvenile eagles. The juvenile eagles were last observed on August 30 and likely fledged shortly after this. Observations generally documented flights leaving the nest and flying to the west, over the lake and returning generally from the same direction. The documented observations generally showed use of the lake as the primary travel way along with main foraging/hunting area. No observations were recorded near any proposed turbine locations. For a complete discussion of these surveys, please refer to Exhibit 7-8.

Eagle Point Count Surveys

Eagle point count surveys were conducted from September 2015 to September 2016 and January 2019 to February 2020. The surveys followed the recommended methods described in the USFWS ECPG and the protocol was approved by the USFWS and the MDIFW. Eagle use surveys were conducted during daylight hours (first light to last light) in the spring, summer, fall and winter seasons. The eagle use surveys focused on documenting eagle use within the 800m point count boundary, and below 200m above ground level.

During the 2015 to 2016 survey effort, surveys consisted of 1-hour visual surveys at 31 locations within and adjacent to the Project Area. During the 2019 to 2020 survey effort, surveys consisted of 2-hour visual surveys at 12 locations within the Project Area. Surveys were conducted at each point once a month for 14 rounds of survey during the 2019-2020 survey effort.

A total of 9 bald eagles were observed during the 2015-2016 surveys within the then Project Area, and nine minutes of eagle use during a total of 133 hours of survey time between September 2015 and September 2016. During the 2019-2020 survey effort, a total of 12 bald eagles were observed and 64 minutes of eagle use during a total of 286 hours of survey time within the Project Area. Eagle observations were also recorded during raptor surveys; however, this data was not used to quantify use due to the differing survey methodology. No golden eagles were observed during either survey period. For a complete discussion of these surveys, please refer to Exhibit 7-9.

Raptors Migration Surveys

Pre-construction raptor migration surveys were conducted in fall 2015, spring 2016, fall 2016, spring 2017, and spring 2019 to evaluate raptor activity in the Project Area. The survey methods followed recommendations from USFWS and MDIFW. A total of 13 species were observed: American kestrel (*Falco sparverius*), bald eagle, broad-winged hawk (*Buteo platypterus*), Cooper's hawk (*Accipiter cooperii*), merlin (*Falco columbarius*), northern goshawk (*Accipiter gentilis*), northern harrier, osprey (*Pandion haliaetus*), peregrine falcon (*Falco peregrinus*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), sharp-shinned hawk (*Accipiter striatus*) and turkey vulture (*Cathartes aura*).

The fall 2015 effort, comprising 160 survey hours, had the highest number of raptor observations (n = 499), while the spring 2019 effort, comprising 221 survey hours, had the lowest number of raptor observations (n = 91). For a complete discussion of these surveys, please refer to Exhibit 7-10.

7.4.4. FISHERIES HABITAT

A desktop analysis was completed in 2020 to identify brook trout habitat within the Project Area. Publicly available GIS data from MDIFW Beginning with Habitat was used. Based on the results of the analysis, all streams and rivers within the Project Area are mapped as brook trout habitat.

A desktop analysis was completed in 2020 to identify spawning and rearing habitat for Atlantic salmon within the Project Area. Publicly available GIS data from the Maine Department of Marine Resources (MDMR) was used to identify Atlantic salmon habitat. Based on the results of the analysis, only the Pleasant River is mapped as surveyed spawning and rearing habitat for Atlantic salmon. Several tributaries of the Pleasant River contain modeled habitat.

7.5. ALTERNATIVES ANALYSIS

Downeast Wind continually adjusted and redesigned the proposed Project layout with the objective of avoiding and minimizing impacts to protected resources and land uses. The original Project proposal consisted of up to 57 turbines, with a goal of generating approximately 200 megawatts (MW) of electric power. State and federal jurisdictional wetlands and waterbodies were delineated, and significant wildlife habitats were mapped on over 6,266 acres of land in an effort to inform the engineering design. Downeast Wind evaluated 39 iterations of the Project engineering design and layout, reducing the Project from 57 turbines producing 200 MWs of

electric power to 30 turbines producing 126 MWs of power, with the objective of avoiding and minimizing impacts to protected resources. In response to MDIFW concerns over impacts to habitat for the state-listed endangered upland sandpiper, the Project was reduced to 30 turbines and 126 MW in generation capacity. The reduction in turbines also corresponds with reduction from 25 turbines originally sited within barren habitat to only three turbines in barren habitat, only one of which is in upland sandpiper habitat in the final layout.

Alternative 1, No-Action: Under the "no action" alternative, Downeast Wind would not pursue construction of the Project. The "no action" alternative would not meet the Project purpose to generate renewable energy and would not support the regional and state energy policies. Regional and state of Maine energy policy,[4] which, among other things, calls for an increase in renewable energy sources that will reduce reliance on sources of emissions of greenhouse gases. The State of Maine has indicated the desire to facilitate and encourage the development of wind energy by passing the Wind Energy Act, 35-A M.R.S.A. Chapter 34-A. Section 3404.1. Maine's renewable energy goals also reflect a desire within the State to encourage the generation of electricity from renewable sources, with passage of and continuing updates to the state's Electrical Restructuring Act, 35 M.R.S.A. Section 3210. As such, the "no action" alternative was rejected as it did not meet the basic project purpose.

Alternative 2, 57 Turbine Layout: The original project included area in the towns of Cherryfield, Columbia, and Unorganized Territory T18 MD BPP. Cherryfield changed its siting ordinance to increase the size of property line setbacks. This had the effect of reducing the area available for turbine siting. In order to find additional buildable area, the Project siting work moved east and north. Field investigations in this area indicated that wetlands constrained Project siting. Potential land area for the Project then shifted further north into Unorganized Territories T18 MD BPP and T24 MD BPP. Much of the siting work to this stage also included locations within blueberry fields. Consultation with MDIFW indicated that the potential for conflicts with upland sandpiper habitat associated with the blueberry fields created additional constraints that made a 57-turbine layout difficult to design without significant impacts to upland sandpiper habitats along with concerns related to wetlands and streams.

Alternative 3, 30 Turbine Layout, Proposed Project: This approach minimizes wetland impacts, is cost effective, and meets the purpose of the Project. Since the spring of 2019 and early constraints analysis work performed by Downeast Wind, turbine locations have been withdrawn from areas south of Baseline Road, from T19, and eastern portions of the Project in T24. Turbines were also removed from the Thousand Hills area, reducing the number in that area from nine to six. Visibility of turbines from Schoodic Lake was also considered, and the closest turbine locations were either removed or shifted further from the lake. While turbine locations were being shifted and reduced in number, the corresponding amount of access road, crane path, and electric collector line needed was also reduced. The collector lines that remain in the Project were also assessed to reduce the potential for impacts to natural resources. Collection corridors were shifted to avoid wetland and stream impacts to the maximum extent practicable, and where the siting of collection corridors through wetlands and streams was not possible horizontal directional bores under the resources will be performed to eliminate any permanent impacts.

[4]An Act to Provide Leadership in Addressing the Threat of Climate Change, 2003; An Act to Enhance Maine's Energy Independence and Security, 2005; Act to Establish the Regional Greenhouse Gas Initiative, 2007; Electrical Restructuring Act, 35 M.R.S.A. Section 3210, 1997, et seq.; and the Wind Energy Act, 35-A M.R.S.A. Chapter 34-A, 2008.

7.6. POTENTIAL IMPACTS

7.6.1. WETLANDS AND WATERBODIES

The Project will result in both permanent and clearing impacts to wetlands and indirect impacts to water resources under the jurisdiction of the NRPA and CWA. Permanent impacts include fill impacts for the Operations and Maintenance (O&M) building, new access roads and crane paths, and also include grading, enhancements and widening of existing roads. Temporary impacts include clearing of forested canopy and placement of construction mats in wetlands for construction access.

Within the Project Area, a total of 59 NRPA and potentially jurisdictional CWA wetlands are proposed to be impacted by the Project. Overall, approximately 89,733 square feet (2.06 acres) of NRPA and potentially jurisdictional CWA wetlands will be impacted by clearing impacts (conversion), and approximately 59,153 square feet (1.36 acres) will be permanently impacted (fill), for a total of 148,886 square feet (3.42 acres) (see Table 7-2).

Impacts will also occur to WOSS. All of the WOSS impacts are associated with roads (crane paths and access roads) and electric collector lines. Approximately 23,153 (0.53 acres) of WOSS impacts are from clearing (conversion), and approximately 24,327 (0.56 acres) will be permanently impacted (fill), for a total of 47,480 (1.09 acres). In order to meet standards for impacts to WOSS, pursuant to Chapter 310.5. General Standards, an alternatives analysis and discussion of avoidance and minimization is provided in Section 2 of the NRPA application and is summarized below.

WOSS proposed to be impacted within the Project Area consist of:

- one wetland in a flood zone (new crane path along existing irrigation line);
- two wetlands that contains a peatland (existing road upgrades);
- five wetlands that contain aquatic vegetation or open water areas larger than 20,000 square feet (existing road upgrades and new crane path along existing irrigation line);
- four wetlands associated with SVP or PSVP which are not impacted by Project and are greater than 250 feet from Project Area (existing road upgrades, new access road and new crane path along existing irrigation line);
- one SVP (existing road upgrade and collection line);
- seven wetlands associated with three Inland Waterfowl and Wading Bird Habitats (existing road upgrades and new crane path along existing irrigation line); and
- two wetlands associated with Atlantic salmon habitat (existing road upgrades).

Table 7-2. Wetland Impact Summary

Impact Type	Surface Area ft^2 (acres)
Clearing Wetland Impacts in Non-Wetlands of Special Significance (WOSS)	66,580 (1.53)
Clearing Wetland Impacts in WOSS	23,153 (0.53)
Total Clearing Wetland Impacts	**89,733 (2.06)**
Permanent Wetland fill in Non-Wetlands of Special Significance (WOSS)	34,826 (0.80)
Permanent Wetland fill in WOSS	24,327 (0.56)
Total Permanent Wetland Fill	**59,153 (1.36)**
Total Wetland Impacts	**148,886 (3.42)**

Engineering design has taken advantage of the existing roadway network within the Project Area to reduce the amount of wetland impacts. Any new roads that were required were aligned to avoid wetlands or minimize impacts by crossing at the narrowest location or at the edge of a resource buffer. Turbine pads have been sited to avoid all wetland impacts and electric collector lines have been sited to be co-located with roads to the greatest extent possible. Horizontal directional bores have been planned for all wetland crossings associated with the collector lines that are not co-located with existing roads which minimizes impacts to those resources. Downeast Wind proposes to use the In-Lieu-Fee (ILF) Mitigation program to compensate for the remaining impacts to wetlands that are unavoidable. These engineering design measures and use of ILF support a finding that there is no undue adverse impact to wetlands as a result of the construction and operation of the proposed Project.

7.6.2. WILDLIFE

Significant Wildlife Habitat

Significant Vernal Pool Habitat

The Project will result in direct permanent impact to one SVP depression. The direct impact to the SVP depression is adjacent to an existing road which will be widened for use as a crane path. This pool was previously impacted by ditching along the existing road, and the Project impacts will be only to that existing ditch area. Impacts to this vernal pool depression will include approximately 907 square feet (0.02 acres) of clearing and approximately 826 square feet (0.019 acres) of permanent impacts.

Table 7-3. Impacts to Significant Vernal Pools

Resource ID	Associated Resource	Description	Hydrology	Clearing Impact (sq ft)	Clearing Impact (acres)	Permanent Impact (sq ft)	Permanent Impact (acres)
V-DC-190430-02	W-CWF-22	Natural-Modified	Semi-permanent	907	0.020	826	0.019
Total				**907**	**0.020**	**826**	**0.019**

The Project will impact six SVP upland CTHs. Approximately 53,534 square feet (1.23 acres) of clearing will occur and approximately 100,371 square feet (2.30 acres) of permanent impacts from new roads will occur. Five of these impacts meet the criteria for NRPA Permit By Rule (PBR) since greater than 75 percent of the total CTH will remain unfragmented forest. One of the impacts requires individual approval under NRPA because less than 75 percent of the CTH will remain unfragmented forest from proposed widening of an existing road. Existing impacts from the existing road left approximately 75 percent of the CTH unfragmented forest. The proposed road upgrade will increase cleared area within the CTH by approximately 15 percent, leaving 60 percent of the CTH unfragmented forest. This is the same pool described above and in Table 7-3.

Table 7-4. Impacts to Critical Terrestrial Habitat

Resource ID	Associated Resource	Impact Type	Clearing Impact sq ft	Clearing Impact acres	Permanent Impact sq ft	Permanent Impact acres	Statutory Regulation
Vernal Pool Upland CTH	49tt	Crane Path	1,976	0.045	2,600	0.060	Chapter 305
Vernal Pool Upland CTH	18jl & 19jl	Crane Path and Turbine Pad	3,726	0.086	22,234	0.510	Chapter 305
Vernal Pool Upland CTH	V-DBV-02	Collection	7,946	0.182	0	0	Chapter 305
Vernal Pool Upland CTH	V-RJ-190430-08	Crane Path	8,773	0.201	21,973	0.504	Chapter 305
Vernal Pool Upland CTH	V-MPA-01	Crane Path and Collection	9,990	0.229	21,205	0.487	Chapter 305
Vernal Pool Upland CTH	V-DC-190430-02	Crane Path and Collection	21,123	0.4849	32,359	0.7429	Chapter 310
Total			**53,534**	**1.23**	**100,371**	**2.30**	

Engineering design has taken advantage of the existing roadway network within the Project Area to reduce the amount of SVP impacts. Any new roads that were required were aligned to avoid SVPs or minimize impacts by routing to the edge of the CTH. Turbine pads have been sited to avoid SVP impact to the greatest extent possible and, similar to new roads, have been sited to only impact the edges to CTH where unavoidable. Horizontal direction bores have been planned

for all CTH crossings that are not associated with roads which avoids impacts in those locations. The one impact to the SVP depression is limited to a roadside ditch, which previously impacted the pool. Downeast Wind proposes to use the In-Lieu-Fee (ILF) Mitigation program to compensate for the remaining impacts to SVPs that are unavoidable. These engineering design measures and use of ILF support a finding that there is no undue adverse impact to SVPs as a result of the construction and operation of the proposed Project.

Inland Waterfowl and Wading Bird Habitats

The Project will impact three upland moderate value IWWH areas. Approximately 92,155 square feet (2.12 acres) of clearing impacts will occur and approximately 162,467 square feet (3.73 acres) of permanent impacts from construction of a new road associated with an existing irrigation system, road improvements, and turbine pads will occur. In addition, the Project will impact nine wetlands within moderate value IWWH. Approximately 5,736 square feet (0.13 acres) of clearing impacts will occur and approximately 9,855 square feet (0.22 acres) of permanent impacts will occur from proposed widening of existing roads and a new road associated with an existing irrigation system. These impacts are only to small portions of a significantly larger IWWH area and were sited to use existing roads to minimize impacts.

Engineering design has taken advantage of the existing roadway network within the Project Area to reduce the amount of IWWH impacts. Any new roads that were required were aligned to avoid IWWH or minimize impacts by routing to the edge of the IWWH. Turbine pads have been sited to avoid IWWH impacts to the greatest extent possible and, similar to new roads, have been sited to only impact the edges of the IWWH where unavoidable. Downeast Wind proposes to use the In-Lieu-Fee (ILF) Mitigation program to compensate for the remaining impacts to IWWH that are unavoidable. These engineering design measures and use of ILF support a finding that there is no undue adverse impact to IWWH as a result of the construction and operation of the proposed Project.

Deer Wintering Areas

The desktop analysis concluded that there are no DWAs located within the Project Area. Therefore, no impacts will occur to DWAs.

7.6.3. SENSITIVE, RARE, THREATENED AND ENDANGERED SPECIES

Downeast Wind plans to develop and implement a Bird and Bat Conservation Strategy (BBCS) document in accordance with the USFWS WEGs. The BBCS will detail those measures implemented to avoid, minimize, and monitor potential impacts to bird and bat species. In addition, the following details site-specific measures that have been implemented to avoid, minimize, and mitigate potential impacts to the sensitive and RTE species as identified by the MDIFW.

Upland Sandpiper

The Project has the potential to result in direct and indirect impacts to the state threatened upland sandpiper. Potential direct impacts may include habitat loss and take of upland sandpiper due to collision, and potential indirect impacts may include habitat displacement. However, based on feedback received from MDIFW during several meetings over the course of three years, the Project has been designed to minimize the number of turbines within suitable habitat to only one turbine at the edge of habitat (T30) and no upland sandpipers were recorded near this turbine during surveys. The Project's Avian and Bat Risk Evaluation and Mitigation Proposal (Exhibit 7-11, Section 4) provides an evaluation of upland sandpiper collision risk and habitat displacement

from scientific literature and data from publicly available post-construction monitoring at operating wind farms. Project siting to avoid habitat combined with proposed mitigation means the project will not have an unreasonable adverse impact to upland sandpiper.

Whimbrel

The Project poses low risk to whimbrels, a state species of special concern, from either collision or indirect habitat impacts. The Project layout has been modified to site all but one turbine outside of blueberry barrens to minimize habitat impacts to known foraging habitat. Lastly, despite this species' generally low flight heights, turbine locations have also been re-sited to avoid potential flight paths (and potential collision risk) during whimbrels' travel between coastal foraging areas and the blueberry barrens, where MDIFW documented whimbrels adjacent or in proximity to the Project during July and August 2016 and 2017 surveys. The Project's Avian and Bat Risk Evaluation and Mitigation Proposal identified no whimbrel mortalities at wind facilities from scientific literature or available PCM data at five Canadian facilities (92 total turbines) in areas of high whimbrel use. For further discussion pertaining to whimbrels please refer to Exhibit 7-11, Section 5. With Project siting to avoid habitat combined with proposed mitigation for upland sandpipers that will also benefit whimbrels, the project will not have an unreasonable adverse impact to whimbrels.

Bats

The Project poses a low risk to summer habitat because forested habitat in Maine is not a limiting factor in the persistence of the species. The Project Area lacks any known maternity roosts and there are no known hibernacula within 10 miles of the Project. However, tree clearing could still have the potential to result in direct impacts to bats if clearing occurs during the pup rearing period for bats (June 1 – July 31) when young bats are not yet able to fly. The Project has proposed to clear trees outside of the pup rearing period to eliminate potential take. Clearing will follow the 4(d) rule.

The Project has the potential for bat collisions with turbines. Due to potential collision mortality, the Project will operate under a curtailment schedule to reduce and minimize impacts to the greatest extent practicable. Additionally, the Project is proposing to conduct a "smart" curtailment study and continue to use the best available technology for bat minimization as part of an adaptive management strategy to determine the most effective and efficient strategy to reduce Project risk to bats. The Project's Avian and Bat Risk Evaluation and Mitigation Proposal includes further details on risk to bats and proposed minimization strategies (Exhibit 7-11, Section 7). Based on the project's curtailment plan and time of year restrictions on tree clearing, the project will not result in an undue adverse impact to bats.

Nocturnal Migrants

The Project has the potential to result in direct impacts due to collision to nocturnal migrants, likely to be composed primarily of passerines, as observed at other studies in Maine and the northeastern United States. Passage rates documented during pre-construction surveys for the Project are consistent with other surveys completed in Maine's coastal plain and the scientific literature demonstrates that mortality rates of birds from wind facilities is generally low and limited to a small number of species. Stantec examined the relationship between pre-construction avian surveys (i.e., passage rates) with recorded post-construction bird fatalities across 11 operational wind facilities in Maine. Results showed no strong or consistent relationship between the measured level of pre-construction bird activity and calculated mortality rates from post-construction monitoring after wind operations began. The lack of any pattern related to bird activity

and mortality rates in Maine wind facilities matches with similar studies across North America, supporting the conclusion that measures of bird activity alone are not meaningful predictors of actual observed avian mortality at wind farms. Mortality data from Maine and other projects to nocturnal migrants is likely a better indicator of risk.

Available scientific information indicates that the Project falls within the range of other Maine projects and is not likely to have any population level impacts resulting in an undue adverse impact. The Project also proposes to further reduce impacts to nocturnal migrants by minimizing lighting to the greatest extent practicable. Lastly, the Projects proposal to further mitigate impacts to nocturnal migrants through land conservation, as outlined in the Project's Avian and Bat Risk Evaluation and Mitigation Proposal (Exhibit 7-11, Section 6) will provide a net benefit to passerine species.

Eagles

Results from eagle use surveys conducted in 2015 and 2016 showed mean eagle use of the Project Area was lower than observed at control points located outside of the Project Area. During the September 2015 to August 2016 survey period, only one observed flight behavior believed to be associated with heightened collision risk (USFWS 2013) was documented. In March 2016, a territorial display was also noted. No juvenile bald eagles were observed during eagle use surveys overlapping with the eagle post-fledgling period (June to October).

In the January 2019 to February 2020 survey period, the majority of eagle observations occurred south of Schoodic Lake. Only one instance of high-risk behavior was observed within the point count survey locations.

Post-construction monitoring (PCM) at operational wind facilities in Maine have observed bald eagles continuing to use airspace near turbines, and no eagle fatalities have been recorded at wind facilities in Maine or New England. This information, combined with the low mean eagle use within the Project Area and presence of the majority of occupied eagle nests greater than four miles from the Project Area, suggest that collision risk to bald eagles from the Project is low and there will be no undue adverse impact to eagles.

Raptors

As previously noted, diurnal raptor surveys occurred in fall 2015, spring 2016, fall 2016, spring 2017, summer 2017, and spring 2019. In all seasons, average raptor passage rates (individuals/hr) and percent of individuals below turbine height was within the range of results from similar surveys at other proposed wind projects in Maine, New Hampshire, and Vermont. Similarly, species composition was consistent with similar studies completed in the region and habitats present in the Project Area. These results suggest that Project surveys effectively characterized the level and timing of migratory activities by raptors in the Project Area. Overall, there have been few documented raptor fatalities (a total of four over 12 operating years) at wind facilities in the Northeast (including Maine). Because raptor surveys of the Project Area resulted in similar levels of activity and species composition to other operating wind facilities in Maine, raptor fatalities are expected to be uncommon and there will be no undue adverse impact to raptors.

7.6.4. FISHERIES HABITAT

Brook Trout

MDIFW Beginning with Habitat identified all streams located within the Project Area as supporting brook trout. The MDIFW recommends that a 100-foot undisturbed vegetative buffer be maintained along all perennial and intermittent streams, rivers, and ponds located within the Project Area. Maintaining buffers along coldwater fisheries is critical to the protection of water temperatures, water quality, and inputs of coarse woody debris which is necessary to support conditions required by brook trout. New stream crossings are to be done following recommendations from the MDIFW Recommended Performance Standards for Riparian Buffers in Overhead Utility ROW Projects (March 2012).

The Project proposes to use one existing stream crossing over the Pleasant River to help minimize impacts. A total of twelve (12) streams will be impacted by the Project. Of these streams, six (6) are perennial, five (5) are intermittent, and one (1) is ephemeral. Three of the new perennial stream crossings within the Project Area will be bridges or open bottom box culverts that are sized to span at least 1.2 times the bankfull width of the stream (see Exhibit 1-1, Sheet 2.5). These impacts are characterized as permanent impacts. Six (6) new perennial and intermittent stream crossings, associated with crane and access paths, will be embedded culverts that will be backfilled with representative streambed materials. These impacts are characterized as permanent impacts. Five (5) intermittent stream crossings associated with collection will be crossed with temporary construction mats. These impacts will be temporary for use during construction only. One ephemeral stream crossing, associated with a crane path, will be a buried culvert. This is characterized as a permanent impact. The total linear stream length crossed is 730 feet. The overall temporary construction access stream impacts from construction mats spanning the streams and clearing will be 968 square feet, and the overall permanent stream impacts will be 3,873 square feet. Using crossings that follow the MDIFW recommendations for stream crossings, impacts to fisheries will be avoided and minimized and no undue adverse impact is anticipated.

Atlantic Salmon

Building new stream crossings in potential Atlantic salmon habitat requires consultation with the USFWS. To avoid and minimize impacts to potential Atlantic salmon habitat including designated critical habitat, Downeast Wind will follow the USFWS Programmatic Stream Crossing Consultation process for the CWA Section 404 permit. Through design modifications, impacts to Atlantic salmon habitat have been limited to four locations within the Project Area. Three of these locations (S-CWF-15, S-JMR-10, and S-JMR-6) are a direct tributary to the Pleasant River and one location (S-CWF-02) is associated with Beech Hill Brook which is a direct tributary to Mopang Stream. These streams will be crossed with a new bridge or box culvert that will be designed in accordance with USFWS Programmatic Stream Crossing Consultation design standards (i.e., sized to span at least 1.2 times the bankfull width of the stream). These design standards are meant to support free passage for aquatic organisms and prevent any unnatural stream bed or bank erosion. Dependent upon the final design, there could be up to 2,317 square feet of permanent impact at these crossings. Time of year restrictions will include no work within non-tidal waters between October 1 and July 14 to avoid impacts during spawning and egg incubation periods. Using crossing and timing restrictions that follow the USFW Programmatic Stream Crossing Agreement impacts to Atlantic salmon will be avoided and minimized and no undue adverse impact is anticipated.

Table 7-5. Impacts to Fisheries Habitat

Stream ID	Associated Water Feature	Stream Class	Impact Type	Stream Centerline Crossing (Ft.)	Temporary Impact (Sq. Ft.)	Temporary Impact (Acres)	Temporary Construction Matting Access (Sq. Ft.)	Permanent Impact (Sq. Ft.)	Permanent Impact (Acres)	Fisheries Habitat
03CF	Pleasant River Tributary	Intermittent	Collection Temporary Construction Mat Access	24	118	0.002	124	0	0.000	Brook Trout
09TT	Mud Hole Brook Tributary	Intermittent	Collection Temporary Construction Mat Access	109	544	0.012	125	0	0.000	Brook Trout
S-CWF-01	Ingersoll Branch Tributary	Intermittent	Collection Temporary Construction Mat Access	51	257	0.006	125	0	0.000	Brook Trout
S-CWF-02	Beech Hill Brook	Perennial	Crane Path New Bridge or Box Culvert	90	159	0.004	0	289	0.007	Brook Trout and Modeled Atlantic Salmon Rearing
S-CWF-03	Beech Hill Brook Tributary	Perennial	Crane Path New Embedded Culvert	99	112	0.003	0	382	0.009	Brook Trout
S-CWF-04	Beech Hill Brook Tributary	Perennial	Crane Path New Embedded Culvert	45	59	0.001	0	164	0.004	Brook Trout
S-CWF-05	Beech Hill Brook Tributary	Ephemeral	Crane Path New Embedded Culvert	34	0	0.000	0	171	0.004	Brook Trout
S-CWF-15	Pleasant River Tributary	Perennial	Access Road New Bridge or Box Culvert	46	0	0.000	0	1372	0.031	Brook Trout and Modeled Atlantic Salmon Rearing
S-JMR-06	Colonel Brook	Perennial	Access Road New Bridge or Box Culvert	33	1	0.000	0	495	0.011	Brook Trout and Modeled Atlantic Salmon Rearing
S-JMR-10	Colonel Brook Tributary	Intermittent	Access Road New Bridge or Box Culvert with S-JMR-06	46	68	0.002	0	161	0.004	Brook Trout and Modeled Atlantic Salmon Rearing
S-JMR-21	Fred Dorr Brook	Perennial	Crane Path and Collection New Embedded Culvert	128	182	0.004	0	456	0.010	Brook Trout
S-JMR-22	Fred Dorr Brook Tributary	Intermittent	Crane Path and Collection New Embedded Culvert	126	223	0.005	0	382	0.009	Brook Trout
Total				**831**	**1723**	**0.039**	**374**	**3872**	**0.089**	

7.7. AVOIDANCE AND MINIMIZATION

All Project facilities have been designed and carefully sited to avoid environmental resources to the greatest extent practicable. Creating the least impactful Project footprint has been a primary goal of the Project. Access road and crane path design takes advantage of the existing roadway network within the Project Area. Approximately one-half of the linear distance of Project access roads and crane paths is comprised of existing roadways. This drastically reduces the amount of wetland, stream, and vernal pool habitat impacts. In areas where new roadways were required to access Project turbines, alignments were adjusted in order to either avoid protected resources in their entirety or to minimize impacts by designing crossings at the resource's narrowest practical locations or at the edge of a resource buffer area to decrease potential fragmentation and maximize the habitat and buffer areas.

Turbine pads have been individually designed and sited to avoid impacts to adjacent wetlands and, as a result, there are no impacts to wetlands from turbine pads. Electric collector lines have been sited to be co-located with roads to the greatest extent possible. In some instances, collector lines have been routed cross-country to shorten the amount of collector corridor needed to connect the turbines with the substation. For those cross-country distances there are no permanent direct impacts to wetlands. Direct temporary impacts will be from construction mats for access over a limited number of wetlands and streams. Separate collector lines have also been consolidated into single corridors wherever possible. Another key Project feature that has been incorporated into the Project design to avoid and minimize wetland impacts is horizontal directional boring the electric collector lines under vernal pool, wetland, and stream resources.

Incorporating horizontal directional boring of the collector line into Project design has reduced impacts to streams by 9,609 square feet, wetland impacts by 167,798 square feet, vernal pool critical terrestrial habitat impacts by 71,819 square feet, and IWWH by 104,322 square feet. The only crossings of wetlands and streams that remain for the collections system are associated with upgrades to existing roads and temporary crossings to be utilized during Project construction. Please refer to Exhibit 1-1 for further detail.

7.8. MITIGATION

The Project has developed the Avian and Bat Risk Evaluation and Mitigation Plan and submitted it to MDIFW on February 26, 2021. A consultation meeting was conducted on March 4, 2021 to detail the potential impacts, implemented avoidance and minimization measures, and mitigation proposals to offset any remaining potential impacts to those key avian and bat resources identified by the MDIFW. Downeast Wind will continue discussions with MDIFW pertaining to the mitigation plan and implementation of avoidance, minimization, and mitigation measures. Please see Exhibit 7-11 for the Mitigation Plan.

Downeast Wind proposes to utilize the ILF Mitigation program to compensate for the lost wetland functions and values for the remaining impacts to wetlands that are unavoidable. Since the Project is located in Washington County, the ILF Resource Compensation Rate is $4.25 per square foot of impacted wetland. Downeast Wind will submit this ILF payment to the MDEP prior to the start of construction. ILF compensation calculations are detailed in Section 13 of the NRPA application.

7.9. REFERENCES

Cowardin, L.M., V. Carter, F. Golet and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service.

Ferns, P. N., G. H. Green, and P. D. Round. 1979. Significance of the Somerset and Gwent levels in Britain as feeding areas for migrant whimbrels (*Numenius phaeopus*). Biological Conservation. 0006-3207/79/0016-0007.Golet, F.C., and J.S. Larson. 1974. Classification of freshwater wetlands in the glaciated northeast. Resource Publication 116. U.S. Department of the Interior, Washington, D.C. 56pp.

McCall, C.A. 1972. Manual for Maine wetlands inventory. Maine Department of Inland Fisheries and Game, Augusta, Maine. 38pp.

Maine Department of Inland Fisheries and Wildlife (MDIFW). 2011. Upland sandpiper (Bartramia longicauda). Available online at: https://www.maine.gov/ifw/docs/UplandSandpiper_44_45_2011.pdf. Accessed August 23, 2019.

MDIFW. 2012. Recommended Performance Standards for Riparian Buffers in Overhead Utility ROW Projects. MDIFW. 2016. Maine 2015 Wildlife Action Plan – Bartramia longicauda (upland sandpiper). Available online at: https://www.maine.gov/ifw/wildlife/reports/pdfs/SGCN_Reports/SGCN/Upland%20Sandpiper__Bartramia%20longicauda.pdf. Accessed October 31, 2019.

MDIFW. 2018a. Avian Resources in Maine's Coastal Plain.

MDIFW. 2018b. Proposed Downeast Wind Project – Columbia, T18MD, T19MD, T24MD BPP. Received by Paul Williamson (Downeast). June 28, 2019.

Tudor, L. 2017. Preliminary investigation on use of Maine blueberry barrens and intertidal habitats by migratory whimbrel (Numenius phaeopus) and post breeding upland sandpiper (Bartramia longicauda) during 2015-2017.

Vickery, P. D., M. L. Hunter, Jr., and S. M. Melvin. 1994. Effects of habitat area on the distribution of grassland birds in Maine. Conservation Biology 8(4): 1087-1097.

Weik 1999a. Conservation of grassland birds in Maine: field survey of breeding birds (1997-1998). Unpublished report of the Maine Department of Inland Fisheries and Wildlife, Bangor, ME. 49pp. Maine Department of Inland Fisheries and Wildlife (MDIFW). 2011. Upland sandpiper (Bartramia longicauda). Available online at: https://www.maine.gov/ifw/docs/UplandSandpiper_44_45_2011.pdf. Accessed August 23, 2019.

White, R. P. 1983. Distribution and habitat preference of the upland sandpiper (Bartramia longicauda) in Wisconsin. Am. Birds 37:16-22.

EXHIBIT 7-1: WETLAND DELINEATION REPORT

Wetlands and Waterbodies Delineation Report
Proposed Downeast Wind Project

Washington County,
Maine

Prepared for:
Downeast Wind, LLC
366 US Hwy 1
PO Box 219
Columbia, ME 04623



Prepared by:
TRC
14 Gabriel Dr
Augusta, ME
04330



April 9, 2021

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ATTACHMENTS

Attachment A: Resource Mapset – Wetlands
Attachment B: USACE Wetland Determination Data Forms
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ACRONYMS

Applicant	Downeast Wind, LLC
CTH	Critical terrestrial habitat
CWA	Clean Water Act
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	Geographical Information System
GP	General Permit
GPS	Global positioning system
IP	Individual Permit
JD	Jurisdictional Determination
LUPC	Land Use Planning Commission
MDEP	Maine Department of Environmental Protection
MDIFW	Maine Department of Inland Fisheries and Wildlife
MEGIS	Maine Office of Geographic Information Systems
MEGP	Maine General Permit
NHD	National Hydrography dataset
NRCS	Natural Resources Conservation Service
NRPA	Natural Resources Protection Act
NWI	National Wetlands Inventory
NWPR	Navigable Waters Protection Rule
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PNR	Protected Natural Resources
PSS	Palustrine Scrub-Shrub Wetland
PUB	Palustrine Unconsolidated Bottom Wetland
RHA	Rivers and Harbors Act
RTE	Rare, threatened or endangered species
Survey Area	Project Survey Area
Project	Downeast Wind Project
Stantec	Stantec Inc.
TRC	TRC Companies, Inc.
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOSS	Wetland of Special Significance (Maine)

1.0 INTRODUCTION

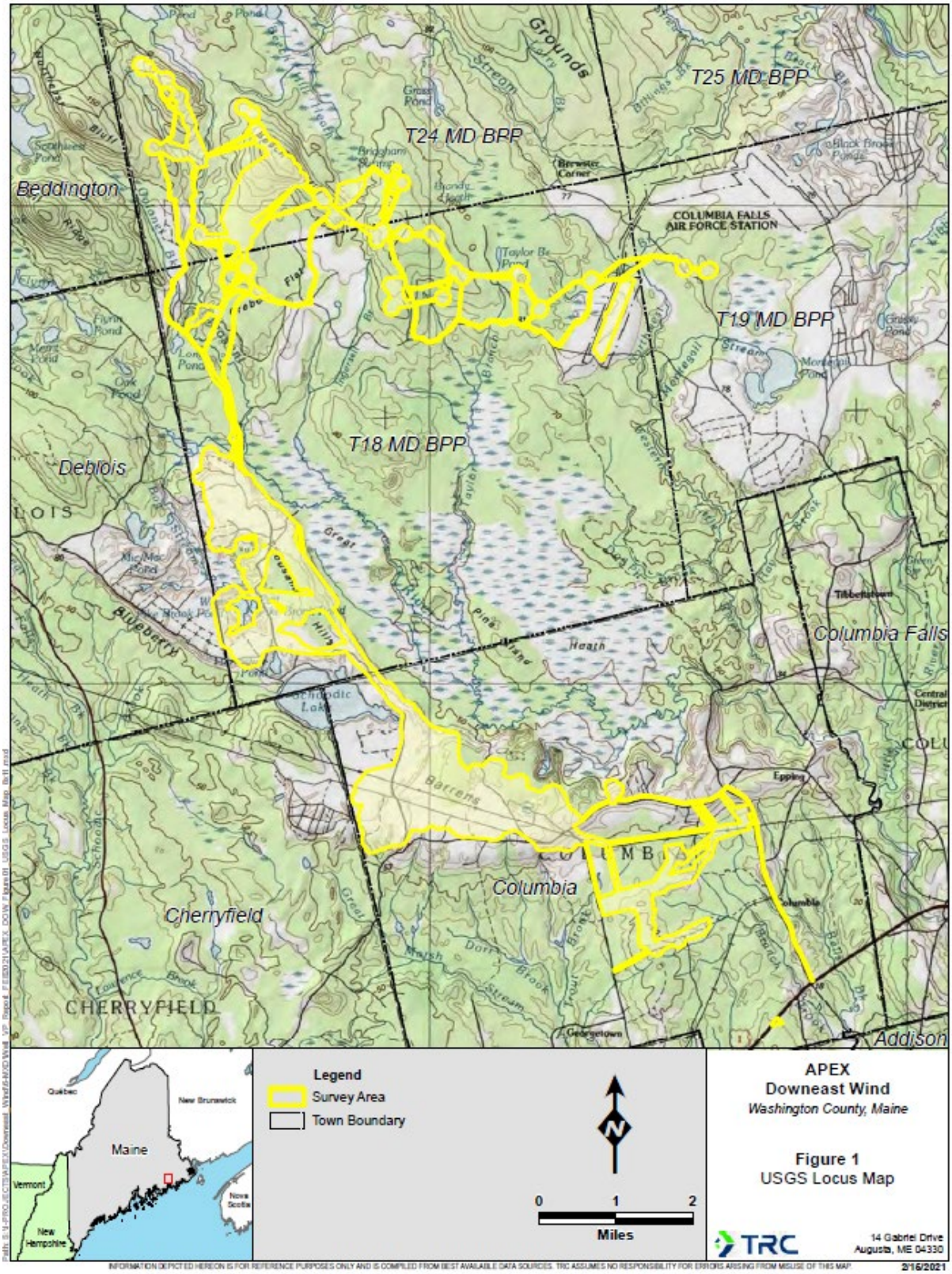
Downeast Wind, LLC (the Applicant) is proposing to construct and operate Downeast Wind (Project), an approximately 126-megawatt (MW) grid-scale wind energy facility located in the town of Columbia, and the unorganized territories, T18 MD BPP and T24 MD BPP, in Washington County. The Project is located in an area identified as appropriate for grid-scale wind energy development (i.e., an expedited permitting area) as defined under 35-A M.R.S. § 3451[1] and is sited to maximize energy production while minimizing impacts to ecological resources.

The proposed facility consists of 30 wind turbines generating 126 MW of electricity. Seven (7) turbines are located in the town of Columbia along the northern edges of the blueberry barrens and to the north of Baseline Road. Six (6) turbines are sited in the Thousand Hills area of T18 MD BPP. Seven (7) positions, including one spare, are arrayed in the northern portion of T18 MD BPP around Crebo Flat and Hawk Hill Rd. Thirteen (13) positions, including two spare locations, are sited in T24 MD BPP.

The applicant contracted TRC Environmental, Inc. (TRC) and Stantec Inc. (Stantec) to perform wetland and stream delineations within the proposed Project Area. Approximately 6,267-acres were surveyed (Survey Area) between November 2016 and December 2020. Wetlands were delineated using the methods outlined in the U.S. Army Corps of Engineers (USACE) *Wetland Delineation Manual* ("Manual;" USACE 1987) and the *Regional Supplement to the USACE Wetland Delineation Manual: Northeast Region*, Version 2.0 ("Regional Supplement;" USACE 2012). The wetland delineation Survey Area is outlined in Figure 1. The results of this field investigation have been utilized to inform the siting of the Project facilities and to avoid and minimize impacts to jurisdictional wetland and water resources. Attachment A includes resource maps, Attachment B includes USACE Wetland determination data forms, and Attachment C includes a photographic log for wetlands and streams.

[1] Available Online: http://legislature.maine.gov/statutes/35-A/title35-Ach34-Asec0.html

Figure 1. Proposed Downeast Wind Survey Area



2.0 APPLICABLE REGULATORY PROGRAMS

The investigations described in this report were conducted to address the Project's compliance with Section 10 of the Rivers and Harbors Act, Section 404 of the Clean Water Act (CWA), the General Permit for the State of Maine, and the Natural Resources Protection Act (NRPA). The following sections provide a summary of applicable regulatory programs. A summary of the Project with respect to compliance with these regulatory programs is provided in Section 6.0.

2.1 FEDERAL REGULATIONS

The USACE regulates construction and other work in navigable waterways and has authority of the discharge of dredged or fill material into "waters of the United States" a term which includes wetlands and other aquatic areas under the regulatory authority per Title 33 Code of Federal Regulations (CFR) Part 328, and the United States Environmental Protection Agency (EPA) per Title 40 CFR Part 230.3(s). In June of 2020, the USACE and the Environmental Protection Agency (EPA) made effective a final rule called the *Navigable Waters Protection Rule* (NWPR). This rule is intended to define the scope of waters and wetlands federally regulated under the CWA. The NWPR and current CWA guidance rely primarily upon surface water connections, linking wetlands to navigable waters, thereby creating a jurisdictional connection.

2.1.1 Clean Water Act Permits

Section 10 of the Rivers and Harbors Act of 1899 (33 CFR 322) regulates the construction of any structure in, over, under any navigable water of the U.S. (33 CRF 328). Navigable waters of the U.S. include territorial seas, tidal waters of the Unites States, and non-tidal waters of the United States. The Corps general definition of navigable waters of the United States is "those waters subject to the ebb and flow of the tide shoreward to the mean high water mark and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity."

Section 404 of the CWA (33 U.S.C 1344) authorizes the USACE to regulate the discharge of dredged or fill material into waters of the United States. The USACE issues General (GP) or Individual Permits (IP) for activities subject to USACE jurisdiction of wetland and waters of the United States within the boundaries of the State of Maine. In the New England District, the nationwide permits have been suspended and replaced with a state general permit specific to each state. In Maine, the GP is commonly referred to as the Maine General Permit (MEGP). The MEGP uses a tiered approach with two categories linked to impact thresholds that determine the level of review necessary from the USACE. The MEGP is issued with USACE regulations at 33 CFR 320-332 and specifically 33 CFR 325.2(e)(2). In order for activities to qualify for the MEGP, the activities shall meet the terms and eligibility criteria, all applicable general conditions and the terms, as provided for in the MEGP issued October 14, 2020.

2.1.2 Jurisdictional Determination

A Jurisdictional Determination (JD) is a process initiated by an applicant, which requests from the USACE a determination as to whether delineated wetlands or streams fall under federal jurisdiction pursuant to the CWA. A JD is based on the findings resulting from wetlands and waterbodies delineated by wetland scientists, in accordance with the USACE Wetland Delineation Manual and the appropriate Regional Supplement. Before a JD can be pursued, a complete wetland delineation should be completed. Wetlands and waterbodies extending off the property area controlled by the applicant would need to be delineated, and wetlands and waterbodies extending off of the property controlled by the applicant would be evaluated based on aerial photos, hydrologic reports, National Wetland Inventory and soils maps, and stream statistics, since there would presumably be no field access. The wetland delineations and materials documenting off site conditions would be used to build a case for removal of a wetland from jurisdiction (assuming applicants wish to remove wetlands from jurisdiction, rather than add them).

Due to the prevalence of surface waters (intermittent and perennial streams etc.) and ephemeral jurisdictional connections (ephemeral streams, concentrated snow melt flow paths etc.), it is less common for a project in Maine to complete the JD process. Furthermore, all wetlands are jurisdictional under the NRPA in the State of Maine, so in the unusual event that certain delineated wetlands are deemed not jurisdictional under the CWA, they will be regulated under the NRPA. In unusual circumstances and site conditions, a truly isolated wetland, situated in a distinct upland landscape may be an ideal candidate to exclude as a jurisdictional wetland using the JD process. In this scenario or similar, where the effort of the JD results in an applicant avoiding USACE CWA permitting, thus only having the MDEP state permitting to contend with, permit hurdles and or compensation may be reduced.

2.1.3 Water Quality Certification

Under Section 401 of the CWA, a federal agency may not issue a permit or license to conduct any activity that may result in any discharge into waters of the United States unless a Section 401 water quality certification is issued, verifying compliance with water quality requirements, or certification is waived. In Maine, the Land Use Planning Commission (LUPC) and the Maine Department of Environmental Protection (MDEP) have been designated as the certifying agencies. A federal permit may not be issued until the water quality certification has been issued or waived. MDEP may add conditions to the certification and these must become conditions of the federal license.

2.2 STATE OF MAINE REGULATIONS

Wetlands in Maine are regulated by the Maine Department of Environmental Protection (MDEP) under the NRPA under the provisions set forth in Title 38 MRSA 480-B and the Wetlands and Waterbodies Protection Rules in Chapter 310. The NRPA defines wetlands and multiple protected natural resources (PNRs) and gives MDEP jurisdiction over these resource areas. In most cases the MDEP regulates activities in, on or over protected natural resources, including wetlands, waterbodies and Significant Wildlife

Habitat. Significant Wildlife Habitat rules can be found in Chapter 335. MDEP requires wetlands to be delineated pursuant to the methodology described in Section 4.0.

The authority of MDEP to regulate wetlands under the NRPA does not change with recent CWA guidance, or with the implementation of the NWPR. All wetlands, waterbodies and other PNRs remain under the jurisdiction of the MDEP. Because the USACE and the MDEP have similar, but not exact jurisdiction over wetlands, the agencies are cooperative in their permitting process, and often work together to streamline the review process.

2.2.1 Natural Resource Protection Act Permit

Impacts to wetlands and other PNRs under jurisdiction of the NRPA, will require permitting through the MDEP, where there are three (3) permit categories: Tier 1, Tier 2, and Tier 3/Individual. In general, and with specific standards Tier Permit Categories can broadly be defined as the following:

- Tier 1 <15,000 square feet;
- Tier 2 15,000 square feet to 1 acre; and
- Tier 3 (Individual Permit) >1 acre impacts.

Projects can qualify for Tier 1, depending on the resources impacted. A common threshold for Tier 1 is whether a Project impacts less than 15,000 square feet of wetland with permanent or temporary fill; however but impacts to certain wetlands of special significance (WOSS) must be permitted through the Tier 3/Individual application process, even if impacts are less than 15,000 square feet.

In addition to the Tier Permit categories, MDEP can permit certain activities through the Permit by Rule (PBR) process, which has a 14-day review period. PBR Standards are outlined in Chapter 305 of the NRPA rules.

2.2.2 Wetlands of Special Significance (WOSS)

Chapter 310, Wetlands and Waterbodies Protection Rules, of the NRPA provides additional protections for a subset of wetlands that provide a high level of functions and values to the public and environment, which are defined as Wetlands of Special Significance (WOSS). As important ecological resources, WOSS are afforded additional protections and require more rigorous permitting. Under Chapter 310, Section 3 (Definitions) a Freshwater WOSS has one or more of the following characteristics:

1) Critically imperiled (S1) or imperiled (S2) community;
2) Significant Wildlife Habitat;
3) Location near coastal wetland;
4) Location near a Great Pond (i.e., within 200 feet of a lake or pond greater than 10 acres in size, or an impounded water greater than 30 acres in size);
5) At least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water (not including artificial ponds and impoundments);

6) Wetlands subject to flooding (i.e., located within the FEMA 100-year floodplain);
7) Peatlands; and,
8) Located within 25 feet of a river, stream, or brook (as defined in Section 2.2.2 below).

2.2.3 Streams

Under the NRPA definition, "River, stream or brook" means a channel between defined banks. A channel is created by the action of surface water and has two or more of the following characteristics:

(a) It is depicted as a solid or broken blue line on the most recent edition of the U.S. Geological Survey 7.5-minute series topographic map or, if that is not available, a 15-minute series topographic map;
(b) It contains or is known to contain flowing water continuously for a period of at least 6 months of the year in most years;
(c) The channel bed is primarily composed of mineral material such as sand and gravel, parent material or bedrock that has been deposited or scoured by water;
(d) The channel contains aquatic animal such as fish, aquatic insects or mollusks in the water or, if no surface water is present, within the stream bed; and
(e) The channel contains aquatic vegetation and is essentially devoid of upland vegetation.

River, stream or brook does not mean a ditch or other drainage way constructed, or constructed and maintained, solely for the purpose of draining storm water or a grassy swale.

3.0 SURVEY AREA DESCRIPTION AND CURRENT LAND USE

The Project is situated across a landscape that has been developed primarily for commercial agriculture, specifically the production of blueberries, with adjacent second-growth and early successional forests. Within the Survey Area, approximately 49% is field/non-forested and 51% is forested. TRC and Stantec completed wetland delineation surveys for the Project on approximately 6,267 acres of land from 2016 to 2020. Delineated wetlands located in the Survey Area are depicted on resource mapping in Attachment A.

The Project is located within the Pleasant River-Frontal Atlantic Ocean (HUC 10: 0105000206), Lower Machias River (HUC 10: 0105000206), and Narraguagus River-Frontal Atlantic Ocean (HUC 10: 0105000210) watersheds. The water draining across the landscape and through the Survey Area generally flows south to southeast into the Pleasant River and Atlantic Ocean. Topography across the Survey Area varies from flat, gentle slopes to moderate and steeper slopes.

Upland forest cover in the Survey Area features species typical of spruce-fir and northern hardwood forests. The dominant tree and sapling species included red spruce (*Picea rubens*), balsam fir (*Abies balsamea*), eastern white pine (*Pinus strobus*), red oak (*Quercus rubra*), red maple (*Acer rubrum*), American beech (*Fagus grandifolia*), aspen species (*Populus* spp.), and birch species (*Betula* spp.). Common shrub species included wild raisin (*Viburnum nudum*), blackberry (*Rubus allegheniensis*), sheep laurel (*Kalmia angustifolia*) and raspberry (*Rubus idaeus*). Common herbaceous species included lowbush

blueberry (*Vaccinium angustifolium*), eastern teaberry (*Gaultheria procumbens*), bunchberry (*Cornus canadensis*), bracken fern (*Pteridium aquilinum*), and wild sarsaparilla (*Aralia nudicaulis*).

Forested, scrub-shrub, and emergent wetlands also part of the Survey Area are discussed in further detail in Section 4.1.

4.0 METHODOLOGIES FOR IDENTIFYING POTENTIAL JURISDICTIONAL STREAMS AND WETLANDS

The purpose of the field delineation was to delineate wetlands in accordance with the USACE *Wetland Delineation Manual* and the *Regional Supplement*. All surface waters and wetlands were assumed to be jurisdictional under the federal CWA and the NRPA.

A desktop analysis of existing literature and databases was conducted prior to field surveys to identify potential federally jurisdictional streams and wetlands in the Survey Area. The desktop analysis included review of USGS topographic mapping, USGS National Hydrography Dataset (NHD), United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, Natural Resources Conservation Service (NRCS) medium-intensity soil survey mapping, FEMA Flood Insurance Rate Maps (FIRM), State of Maine Office of GIS (MEGIS) data, and contemporary and historical aerial imagery. The purpose of the desktop analysis was to estimate the locations of potentially jurisdictional streams and wetlands and to plan field work accordingly.

Wetland delineations were conducted according to U.S. Army Corps of Engineers (USACE) *Wetland Delineation Manual* ("Manual;" USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, v2* ("Regional Supplement;" USACE 2012). The Regional Supplement follows criteria established in the USACE Wetlands Delineation Manual (Environmental Laboratory, Technical Report T-87-1, 1987), but is region specific, giving the wetland delineator a better tool to apply to regional vegetation communities, indicators of hydrology, and indicators of hydric soils when conducting a wetland boundary determination. The USACE Manual provides a repeatable methodology to identify potential wetland areas using a three-factor approach (*i.e.*, hydrophytic vegetation, indicators of hydrology, and the presence of hydric soils).

Field investigations were conducted from November 2-3, 2016, April 24-26, 2017, September 9–13, and 16-20, 2019, October 16, 2019, November 18–22, 2019, July 14–15, 2020, October 8, 2020, November 3-5 and 9-13, 2020, and December 9-10, 2020 to identify, delineate, and map wetlands and streams. When a location having the requisite three factors that constitute a wetland were encountered, the boundaries were flagged in the field using glo-pink survey flagging emblazoned with the words "Wetland Delineation" or "Wetland Boundary" and sequentially labeled with a unique alpha-numeric code. This code designates the Wetland Resource ID which is used on Wetland Determination Forms, resource mapping, and summary tables to identify each delineated resource. Wetland flags were geo-located as described in

Section 4.5. Representative photographs were taken of each delineated wetland and waters and are provided in Attachment C following the Wetland Determination Data Forms.

4.1 WETLAND AND VEGETATIVE COMMUNITY COVER TYPES

Wetland cover types were assigned to each delineated wetland according to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979). The Cowardin et al. (1979) classification system is a hierarchical system, based primarily on the general classification of wetlands into marine, estuarine, palustrine (freshwater wetland), riverine (stream), or lacustrine (lake) systems, and the dominant vegetation layer. Wetlands that would be classified under Cowardin et al. (1979) as riverine are listed under waterbody delineation results, as described in Section 4.4.

Palustrine forested (PFO) wetlands are characterized by woody vegetation that is taller than six (6) meters or more in height, and normally include an overstory of trees, an understory of young trees or shrubs, and an herbaceous layer (Cowardin et al., 1979).

Palustrine scrub-shrub (PSS) wetlands are dominated by woody vegetation less than three (3) inches in DBH (Cowardin et al., 1979). Scrub-shrub wetlands may include habitats where the climax community that typically is in margins of semi-permanent to permanently flooded areas, or where secondary-growth habitat composed of shrub or sapling species is present due to recent disturbance.

Palustrine emergent (PEM) wetlands are non-tidal wetlands characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. PEM wetlands usually are dominated by perennial plants (Cowardin et al., 1979). These wetlands are commonly referred to by a host of terms, including marsh, wet meadow, and sloped seeps.

The palustrine unconsolidated bottom (PUB) cover type includes wetlands with at least 25 percent cover of particles smaller than stones, and a vegetative cover less than 30 percent (Cowardin et al., 1979). These wetlands are seasonally to permanently flooded. PUB areas are dominated by mineral soils with a small percentage of the soil surface covered by vegetation.

4.2 HYDROLOGY

Site hydrology was examined within each wetland and adjacent upland area. Wetland determination data forms include documentation on hydrology for each wetland delineated within the Survey Area. Indications of permanent hydrology, seasonal flooding or saturation are included on the forms along with depth of inundation if observed. Wetland determination data forms are included in Attachment B.

4.3 SOILS

Soil profile characterizations were conducted at each wetland to confirm the presence or absence of hydric soil indicators. Soil characterizations were assigned to each delineated wetland according to the

Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineation Hydric Soils, Version 7.0 (USDA and NRCS, 2010)).

4.4 STREAMS

When a stream meeting the Federal CWA definition or NRPA criteria (defined in Section 2.2.2) was encountered, blue survey flagging was labeled with an alpha-numeric code and hung at points along the stream. Of note, the only NRPA jurisdictional stream that is not under the federal jurisdiction of the CWA is an ephemeral stream and those are presented separately in Table 2.2. For streams wider than six (6) feet, flags were hung along the banks of the stream. For streams narrower than six (6) feet, flags were hung along the centerline of the stream. Each flag was geo-located as described in Section 4.5. Photographs were taken of each stream and representative stream photos are included in Attachment C.

4.5 GEO-LOCATION OF DELINEATED RESOURCES

When any wetland or stream resources were encountered during field investigations, the feature boundaries, center points or centerlines were flagged with numbered strips of survey tape. Each flag was geo-located using a tablet based hand-held computer connected to a GPS unit. Each flag location was then post-processed using data collection and processing standards designed by the manufacturer to achieve sub-meter accuracy. These data points were then converted to ESRI shapefile format and plotted on maps using GIS software. Shapefile data is then utilized during Project design and natural resource minimization and avoidance planning.

5.0 RESULTS

A field delineation was completed within the Survey Area to identify jurisdictional wetlands and waters. The delineation methods were implemented pursuant to USACE guidance to assess each identified water feature for its potential jurisdictional status under the CWA and NRPA using the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, v2* (USACE 2012). Potential jurisdictional water resource features delineated and mapped within the Survey Area included emergent wetlands, scrub-shrub wetlands, forested wetlands, ephemeral streams, intermittent streams, perennial streams, and other waterbodies. Those features under the jurisdiction of the NRPA were evaluated for both WOSS and potential habitat classifications.

5.1 WETLANDS

5.1.1 NRPA Wetlands and Potential Wetlands Subject to Section 404 of the Clean Water Act

Wetland delineations for the Project Survey Area identified a total of 570 NRPA wetlands and wetlands potentially subject to the jurisdiction of Section 404 of the CWA. Delineated wetlands were also assigned to classifications as described in Cowardin et al. (1979). The total area of the wetlands identified within the Survey Area is 452 acres, approximately 7% of the entire Survey Area. Approximately 326 acres of the

delineated wetland areas are PFO wetlands, 69 acres are PEM wetlands, 56 acres of PSS wetlands, and less than 1 acre of PUB wetlands. Table 1 provides a list of NRPA wetlands and the potentially jurisdictional wetlands subject to Section 404 of the CWA identified in the Survey Area and includes the Wetland ID and the Cowardin (1979) classification.

Table 1. NRPA Wetlands and Potentially Jurisdictional Federal CWA Wetlands Delineated within the Survey Area

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
W-CWF-01	PFO	None
W-CWF-02	PFO	Crane Path
W-CWF-03	PFO	None
W-CWF-04	PFO	None
W-CWF-05	PFO	None
W-CWF-07	PFO	None
W-CWF-08	PFO	Collection Bore
W-CWF-09	PFO	None
W-CWF-10	PFO	Crane Path
W-CWF-10	PSS	None
W-CWF-11	PFO	Crane Path
W-CWF-12	PSS	Crane Path
W-CWF-13	PFO	Crane Path
W-CWF-14	PFO	None
W-CWF-15	PEM	None
W-CWF-16	PFO	Crane Path
W-CWF-17	PFO	Crane Path and Collection Bore
W-CWF-18	PFO	Crane Path
W-CWF-19	PUB	Collection
W-CWF-20	PEM	Collection
W-CWF-21	PFO	Crane Path
W-CWF-22	PEM	Crane Path and Collection
W-CWF-23	PEM	Crane Path
W-CWF-24	PFO	Crane Path and Collection
W-CWF-25	PEM	Crane Path
W-CWF-26	PFO	None
W-CWF-27	PFO	None
W-CWF-28	PFO	None
W-CWF-28	PFO	None
W-CWF-28	PSS	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
W-CWF-29	PSS	None
W-CWF-30	PFO	None
W-CWF-31	PFO	None
W-CWF-32	PEM	None
W-CWF-33	PFO	None
W-CWF-34	PFO	None
W-CWF-35	PFO	None
W-CWF-36	PSS	None
W-CWF-37	PFO	None
W-CWF-38	PSS	None
W-CWF-39	PFO	None
W-CWF-40	PFO	None
W-CWF-41	PUB	None
W-CWF-42	PUB	None
W-CWF-43	PFO	None
W-CWF-44	PFO	None
W-CWF-45	PFO	None
W-CWF-46	PSS	None
W-CWF-47	PFO	None
W-CWF-48	PFO	None
W-CWF-50	PFO	None
W-CWF-54	PFO	None
W-CWF-55	PFO	None
W-CWF-56	PFO	None
W-CWF-57	PFO	None
W-CWF-58	PEM	Access Road
W-CWF-58	PFO	Access Road and Collection Bore
W-CWF-59	PFO	Access Road
W-CWF-60	PFO	Access Road
W-CWF-61	PSS	Access Road
W-CWF-63	PEM	None
W-CWF-67	PFO	None
W-CWF-71	PEM	None
W-CWF-72	PFO	None
W-DBV-01	PFO	None
W-DBV-02	PFO	None
W-DBV-03	PFO	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
W-DBV-04	PFO	None
W-DBV-05	PFO	None
W-DBV-06	PFO	None
W-DBV-07	PFO	None
W-DBV-09	PFO	None
W-DBV-10	PFO	None
W-DBV-11	PFO	None
W-DBV-12	PFO	None
W-DBV-15	PFO	Collection
W-DBV-16	PFO	Collection Bore
W-DBV-17	PFO	None
W-DBV-18	PFO	None
W-DBV-19	PFO	None
W-DC-01	PFO	None
W-DC-02	PFO	None
W-DC-03	PFO	None
W-DC-04	PFO	Crane Path
W-DC-05	PFO	None
W-DMC-01	PFO	None
W-DMC-02	PFO	None
W-DMC-03	PFO	None
W-DMC-20	PFO	None
W-DMC-200	PEM	None
W-DMC-202	PFO	None
W-DMC-21	PFO	None
W-DMC-60	PFO	Collection
W-GAR-01	PFO	None
W-GAR-02	PFO	Access Road
W-GAR-03	PFO	None
W-GAR-04	PFO	Collection Bore
W-GAR-05	PFO	Collection Bore
W-GAR-06	PFO	Collection Bore
W-GAR-07	PEM	Access Road
W-GAR-07	PFO	Access Road and Collection Bore
W-GAR-07	PSS	Access Road and Collection Bore
W-GAR-08	PSS	Access Road
W-GAR-09	PEM	Access Road

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
W-GAR-10	PEM	None
W-GAR-11	PEM	Access Road
W-GAR-12	PFO	Collection Bore
W-GAR-13	PFO	None
W-JMR-01	PEM	None
W-JMR-01	PSS	None
W-JMR-02	PEM	None
W-JMR-03	PEM	None
W-JMR-03	PFO	None
W-JMR-03	PFO	None
W-JMR-04	PFO	None
W-JMR-04	PSS	None
W-JMR-05	PEM	None
W-JMR-06	PEM	None
W-JMR-06	PFO	None
W-JMR-07	PFO	None
W-JMR-08	PFO	None
W-JMR-09	PEM	None
W-JMR-09	PFO	None
W-JMR-10	PFO	None
W-JMR-11	PEM	Access Road
W-JMR-11	PFO	Access Road
W-JMR-12	PEM	None
W-JMR-12	PSS	Access Road
W-JMR-13	PFO	None
W-JMR-13	PSS	Access Road
W-JMR-14	PFO	None
W-JMR-14	PSS	None
W-JMR-15	PSS	None
W-JMR-16	PEM	None
W-JMR-17	PEM	None
W-JMR-17	PFO	Crane Path and Collection
W-JMR-18	PFO	None
W-JMR-19	PEM	None
W-JMR-20	PSS	None
W-JMR-21	PSS	None
W-JMR-22	PSS	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
W-JMR-23	PSS	Crane Path and Collection
W-JMR-24	PFO	Crane Path and Collection
W-JMR-25	PSS	None
W-JMR-26	PFO	None
W-JMR-27	PFO	Crane Path and Collection
W-JMR-28	PSS	None
W-JMR-29	PEM	None
W-JMR-30	PFO	None
W-MJR-01	PFO	None
W-MJR-02	PFO	None
W-MJR-03	PFO	None
W-MJR-03	PSS	None
W-MJR-04	PFO	None
W-MJR-05	PSS	None
W-MJR-06	PSS	None
W-MJR-07	PEM	None
W-MJR-08	PSS	None
W-MJR-09	PFO	None
W-MJR-10	PSS	None
W-MJR-11	PSS	Crane Path
W-MJR-12	PFO	None
W-MJR-13	PFO	None
W-MJR-14	PFO	None
W-MJR-15	PFO	None
W-MJR-16	PSS	None
W-MJR-17	PEM	None
W-MJR-18	PSS	None
W-MJR-19	PSS	Crane Path
W-MJR-20	PSS	None
W-MJR-21	PSS	None
W-MJR-22	PFO	None
W-MJR-22	PSS	None
W-MJR-23	PFO	Collection
W-MJR-24	PFO	None
W-MJR-25	PSS	Collection
W-MJR-26	PFO	None
W-MJR-27	PSS	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
W-MJR-28	PFO	None
W-MJR-29	PFO	None
W-MJR-30	PFO	None
W-MJR-31	PSS	None
W-MJR-32	PEM	None
W-MJR-32	PFO	None
W-MJR-32	PUB	None
W-MJR-33	PSS	None
W-MJR-34	PFO	None
W-MJR-35	PSS	None
W-MJR-36	PFO	None
W-MJR-37	PUB	None
W-MJR-38	PFO	None
W-MJT-01	PFO	O&M Facility
W-MJT-02	PFO	None
W-MJT-03	PSS	None
W-MJT-04	PFO	None
W-MJT-05	PFO	None
W-MJT-06	PFO	None
W-MJT-07	PFO	None
W-MJT-08	PSS	None
W-NSD-01	PFO	None
W-NSD-01	PUB	None
W-NSD-02	PFO	None
W-NSD-03	PFO	Crane Path and Collection
W-NSD-04	PSS	None
W-NSD-05	PFO	Collection Bore
W-NSD-06	PFO	None
W-NSD-08	PFO	Collection
W-NSD-09	PFO	Collection Bore
W-NSD-10	PFO	Crane Path and Collection Bore
W-NSD-11	PFO	None
W-NSD-12	PFO	None
W-NSD-13	PFO	None
W-NSD-14	PFO	None
W-NSD-15	PFO	None
W-NSD-16	PUB	Collection Bore

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
W-NSD-17	PEM	Crane Path
W-NSD-18	PUB	None
W-RKD-01	PEM	None
W-SLG-01	PSS	None
W-SLG-03	PSS	None
W-SLG-04	PFO	None
W-SLG-05	PFO	None
W-SLG-06	PFO	None
W-SLG-07	PFO	None
W-SLG-08	PFO	None
W-SLG-09	PSS	Access Road
W-SLG-10	PEM	None
W-SLG-10	PFO	Crane Path
W-SLG-11	PSS	None
W-SLG-12	PSS	None
W-SLG-13	PEM	None
W-THE-01	PEM	None
W-THE-02	PFO	None
W-THE-03	PFO	None
W-THE-04	PFO	None
W-THE-05	PFO	None
W-THE-06	PFO	None
W-THE-07	PFO	None
W-THE-08	PSS	None
W-THE-09	PEM	None
W-THE-09	PFO	None
W-THE-09	PSS	None
W-THE-10	PFO	None
W-THE-11	PFO	None
W-THE-12	PFO	None
W-THE-13	PFO	None
W-THE-14	PFO	None
W-THE-15	PEM	None
W-THE-16	PFO	None
W-THE-17	PFO	None
W-THE-18	PEM	None
W-THE-18	PFO	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
W-THE-18	PSS	None
W-THE-19	PEM	None
W-THE-19	PFO	None
W-THE-20	PSS	None
W-THE-21	PSS	Collection
W-THE-22	PFO	None
W-THE-23	PSS	Access Road
W-THE-24	PSS	None
W-THE-25	PFO	None
W-THE-25	PSS	Collection Bore
W-THE-25	PSS	Collection Bore
01CFA	PFO	None
01CFB	PFO	None
01CFC	PSS	None
01CFD	PFO	Collection Bore
01CFF	PFO	Collection Bore
01CFG	PSS	None
01CFH	PSS	None
01CFI	PFO	None
01CFJ/02JLJ	PSS	None
01CFK	PEM	None
01CFM	PSS	None
01CFN	PEM	None
01CFO	PSS	None
01CFP	PEM	None
01CFQ	PSS	None
01CFR	PSS	None
01CFT	PSS	None
01CFU	PSS	None
01CFW	PFO	None
01CFY	PFO	None
01EBA	PSS	None
01EBB	PSS	None
01EBC/01EBE/04TTU	PEM	None
01EBD	PSS	None
01EBG	PEM	None
01EBJ	PEM	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
01EBK/05TTP	PEM	None
01EBL	PSS	None
01EBO	PEM	None
01EBP	PEM	None
01EBS	PEM	None
01EBU	PSS	None
01EBV	PEM	None
01EBW	PFO	None
01EBX	PEM	None
01EBY	PFO	None
01EBZ	PSS	None
01JLA/02CFG	PFO	None
01JLB-02CFH	PFO	None
01JLE/01JLI/06TTQ	PFO	None
01JLF	PSS	None
01JLG	PFO	None
01JLG	PFO	None
01JLH	PFO	None
01JLJ/01tto	PSS	None
01JLK	PSS	None
01JLL	PEM	None
01JLM	PEM	None
01JLN	PEM	None
01JLO	PEM	None
01JLR	PFO	None
01JLS	PFO	None
01JLT	PFO	None
01jlu	PFO	None
01jlv	PSS	None
01jlx/03ttj	PFO	None
01jly	PFO	None
01jlz	PFO	None
01rka	PSS	None
01rkc	PSS	None
01rkd	PSS	None
01rkp	PFO	None
01rkr	PFO	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
01rks	PFO	None
01rku	PFO	None
01rkv	PEM	None
01rkw	PFO	None
01TTA	PFO	None
01TTB	PFO	None
01TTC	PFO	None
01TTD	PFO	None
01TTE	PFO	None
01TTF	PFO	None
01TTG	PFO	None
01TTH	PFO	None
01TTI	PFO	None
01TTJ	PFO	None
01TTK	PFO	None
01TTL	PFO	None
01TTM	PFO	None
01TTN	PSS	None
01TTO	PFO	None
01TTP	PFO	None
01TTR	PEM	None
01TTS/02CFJ/01JLC	PFO	None
01TTT	PFO	None
01TTU	PFO	None
01TTV	PFO	None
01TTW	PEM	None
01TTX	PEM	None
01TTY	PEM	None
02CFA	PSS	None
02CFE	PEM	None
02CFF	PEM	None
02CFI	PSS	None
02CFK/01JLD	PFO	None
02CFL	PFO	None
02CFM	PFO	None
02CFN	PFO	None
02CFO	PSS	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
02CFP	PEM	None
02CFQ/06ttj	PFO	None
02CFR	PFO	None
02CFS	PSS	None
02CFT/01EBF/04TTW	PEM	None
02CFU	PEM	None
02CFV	PSS	None
02CFW	PSS	None
02CFX/01EBH/04TTZ	PEM	None
02CFY	PEM	None
02CFZ/01EBI/05ttc/05ttf	PEM	None
02eba	PFO	None
02ebb	PFO	None
02ebc/02ebd/03cfq	PFO	None
02ebe/03cfu	PFO	None
02ebf	PFO	None
02ebg/03cfv	PFO	None
02ebi	PSS	None
02ebj	PFO	None
02ebk	PEM	None
02ebl	PFO	None
02ebm/04cfb/03tty	PSS	None
02ebn	PEM	None
02ebo	PEM	None
02ebp	PEM	None
02ebq	PEM	None
02ebr	PEM	None
02ebs	PEM	None
02ebu	PSS	None
02ebv	PFO	None
02ebz/04cfm	PEM	None
02jla	PFO	None
02jlb	PFO	None
02jlc	PEM	None
02jld	PFO	None
02jle	PFO	None
02jlf	PFO	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
02jlg	PFO	None
02jlh	PEM	None
02jli	PFO	None
02jlk	PFO	None
02jll	PFO	None
02jlm/01CFZ	PFO	None
02jln	PFO	None
02jlo	PFO	Collection Bore
02jlp	PFO	None
02TTB	PSS	None
02TTC	PFO	None
02TTD	PFO	None
02TTE	PFO	None
02TTF/01CFV	PFO	None
02TTG/01CFX	PFO	None
02TTH	PFO	None
02TTJ	PSS	None
02TTK	PFO	None
02TTl	PFO	None
02TTL/02CFB	PFO	None
02TTM	PFO	None
02TTN	PFO	None
02TTO	PSS	None
02TTP	PFO	None
02TTQ	PSS	None
02ttr/03cfo/01rkb/01rke/02tty/01rkl/01rkm/01rke	PEM	None
02tts	PFO	None
02ttt	PFO	None
02ttu	PFO	None
02ttv	PFO	None
02ttw	PFO	None
02ttx	PSS	None
03CFA	PSS	None
03CFB	PFO	None
03CFC	PSS	None
03CFD	PSS	None
03CFE	PSS	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
03CFF/03CFG/01EBM/01EBN	PFO	None
03CFH/01EBQ	PEM	None
03CFI/01EBR	PEM	None
03CFJ/03CFK/03CFL/03CFM/01EBT/01JLP	PEM	None
03CFN/01JLQ	PEM	None
03cfp	PFO	None
03cfr/03cfs	PFO	None
03cft	PSS	None
03cfw/02ebh	PFO	None
03cfx	PFO	None
03cfy	PSS	None
03cfz/04cfa/03ttv/03ttw/03ttx	PFO	None
03tta	PSS	None
03ttb	PFO	None
03ttc/01rkt	PFO	None
03ttd	PFO	None
03tte	PFO	None
03ttf	PFO	None
03ttg	PEM	None
03tth	PSS	None
03tti/03ttk/01jlw	PFO	None
03ttl	PFO	None
03ttm	PFO	None
03ttn	PSS	None
03tto	PFO	None
03ttp	PFO	None
03ttq	PFO	None
03ttr	PFO	None
03tts	PFO	None
03ttt	PFO	None
03ttu	PSS	None
04cfd/04cfc/03ttz	PEM	None
04cfe	PEM	None
04cff	PSS	None
04cfg/02ebt	PSS	None
04cfh	PFO	None
04cfi	PSS	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
04cfj/02ebw	PEM	None
04cfk/02ebx	PFO	None
04cfl/02eby	PEM	None
04ttb	PFO	None
04ttc	PFO	None
04ttd	PSS	None
04ttg	PSS	None
04tti	PEM	None
04ttj	PSS	None
04ttk	PFO	None
04ttr/06tti	PFO	None
04tts/06tth	PFO	None
04ttt	PFO	None
04ttv	PFO	None
04tty	PFO	None
05ttb	PFO	None
05ttd	PFO	None
05ttg	PFO	None
05tth	PSS	None
05tti	PFO	None
05ttj	PFO	None
05ttk	PFO	None
05ttl	PFO	None
05ttm	PFO	None
05ttn	PFO	None
05ttq	PFO	None
05tts	PFO	None
06ttf	PSS	None
06ttg	PFO	None
06ttk	PFO	None
06ttl	PFO	None
06ttm	PFO	None
06ttn	PFO	None
06tto	PFO	None
06TTQ	PFO	None
06ttr	PFO	None
06tts	PFO	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
06ttt	PFO	None
06ttu	PFO	None
06ttv	PFO	None
06ttw	PFO	None
06ttx	PFO	None
06tty	PFO	None
06ttz	PFO	None
07tta	PFO	None
07ttb	PFO	None
07ttc	PFO	None
07ttd	PFO	None
07ttf/07ttg	PFO	None
07tth	PFO	None
07ttj	PFO	None
07ttk	PFO	None
07ttl/07ttm	PFO	None
07ttn	PFO	None
07tto	PFO	None
07ttp	PFO	None
07ttq	PFO	None
07ttr	PFO	None
07tts	PSS	None
07ttt	PSS	None
07ttu	PFO	None
07ttv	PFO	None
07ttw	PFO	None
07ttx	PFO	None
07tty	PFO	None
07ttz	PFO	None
08tta	PFO	None
08ttb	PFO	None
08ttc	PFO	None
08ttd	PFO	None
08tte	PFO	None
08ttf	PFO	None
08ttg	PFO	None
08tth	PFO	None

Wetland ID	Cowardin Classification	Potential Infrastructure Impact or Avoidance Measure
08tti	PFO	None
08ttj	PSS	None
08ttk	PFO	None
08ttl	PFO	None
08ttm	PSS	None
08ttn/09tth/09tti/09ttj/09ttk	PFO	None
08tto	PFO	None
08ttp	PSS	None
08ttq	PFO	None
08ttr	PFO	None
08tts	PFO	None
08ttt	PFO	None
08ttu/09ttg	PFO	None
08ttv	PFO	None
08ttw	PFO	None
08ttx	PFO	None
08tty	PFO	None
08ttz	PFO	None
09tta	PFO	None
09ttb	PFO	None
09ttc	PFO	None
09ttd	PFO	None
09tte	PFO	None
09ttf	PFO	None
09ttl	PSS	None
09ttm	PFO	None
20tta	PFO	None

5.1.2 Wetland Classification System Types within the Project Area

Using the Cowardin et al. (2019) hierarchical wetland classification system, only palustrine and riverine classification types were identified within the Survey Area, and the four primary cover types were identified for vegetated wetlands in the Survey Area: palustrine forested (PFO), palustrine scrub shrub (PSS), palustrine emergent (PEM), and palustrine unconsolidated bottom (PUB) wetlands. Some wetlands contained multiple cover types and were described as co-dominant emergent, scrub-shrub, or forested vegetation. There were also some wetlands identified as palustrine unconsolidated bottom (PUB). Wetland resources delineated in the Survey Area are presented in Table 1.

Vegetation communities for PFO wetlands in the Survey Area were dominated by the following species: red maple, Eastern white pine, Eastern hemlock (*Tsuga canadensis*), red spruce, wild raisin, common winterberry (*Ilex verticilata*), American witch-hazel (*Hamamelis virginiana*), speckled alder (*Alnus incana*), catberry (*Nemopanthus mucronatus*), lowbush blueberry, cinnamon fern (*Osmundastrum cinnamomeum*), interrupted fern (*Osmunda claytoniana*), sensitive fern (*Onoclea sensibilis*), sedge species (*Carex* spp.), cottongrass bulrush (*Scirpus cyperinus*), sheep-laurel, fowl manna grass (*Glyceria striata*), and steeplebush (*Spiraea tomentosa)*. Forested wetlands represented approximately 72% of all wetland cover types.

Vegetation communities for PSS wetlands in the Survey Area were dominated by the following species:, gray birch (*Betula populifolia*), yellow birch (*Betula alleghaniensis*), speckled alder, highbush blueberry (*Vaccinium corymbosum*), common winterberry, broad-leaf meadowsweet (*Spiraea latifolia*), white meadowsweet (*Spiraea alba*), bluejoint (*Calamagrostis canadensis*), leatherleaf (*Chamaedaphne calyculata*), rhodora (*Rhododendron canadense*), cinnamon fern, sensitive fern, cottongrass bulrush, and sedge species. Scrub-shrub wetlands represented approximately 12% of all wetland cover types.

Vegetation communities for PEM wetlands in the Survey Area consisted of the following species: gray willow (*Salix bebbiana*), common winterberry, wild raisin, rhodora, cottongrass bulrush, steeplebush, three-way sedge (*Dulichium arundinaceum*), bluejoint, interrupted fern, cinnamon fern, sensitive fern, sweetgale (*Myrica gale*), and fringed sedge (*Carex crinata*). Emergent wetlands represented approximately 15% of all wetland cover types.

Vegetation communities for PUB wetlands in the Survey Area consisted of the following species: broad-leaf pondweed (*Potamogeton natans*), greater bladderwort (*Utricularia macrorhiza*), uptight sedge (*Carex stricta*), speckled alder, gray birch, black spruce (*Picea mariana*), Eastern white pine, and cottongrass bulrush. Unconsolidated bottom wetlands represented approximately less than 1% of all wetland cover types.

5.1.1 Wetlands of Special Significance Subject to NRPA

Wetland delineations identified a total of 252 WOSS within the Survey Area. The WOSS are comprised of 21 peatlands; 25 marshlands aquatic vegetation, or open water areas larger than 20,000 square feet; 104 Significant Wildlife Habitats (in these cases, they are Significant Vernal Pools, Inland Waterfowl/Wading Bird Habitat, and Atlantic Salmon Habitat); five (5) great ponds; 108 wetlands within 25 feet of a stream; and one (1) wetland located within a flood prone location. Note that 42 of the 252 wetlands contain two or more of the WOSS habitat classifications. Table 2 provides a list of each WOSS wetlands subject to NRPA jurisdiction and designated WOSS habitat classification, where applicable.

Table 2. Wetlands of Special Significance Delineated within the Survey Area

Wetland ID	Potential Infrastructure Impact or Avoidance Measure	WOSS (Habitat Classification)
W-CWF-08	Collection Bore	Streamside
W-CWF-10	Crane Path	Streamside, Large Marsh, IWWH and PSVP-MJT-001
W-CWF-10	None	Streamside, Large Marsh, IWWH and PSVP-MJT-001
W-CWF-11	Crane Path	Streamside and IWWH
W-CWF-12	Crane Path	Streamside and IWWH
W-CWF-13	Crane Path	IWWH
W-CWF-20	Collection	Large Marsh, Streamside and SVP-V-DC-190430-02
W-CWF-21	Crane Path	Streamside
W-CWF-22	Crane Path and Collection	SVP V-DC-190430-02
W-CWF-23	Crane Path	SVP V-DC-190430-02
W-CWF-28	None	SVP V-DC-190502-01
W-CWF-28	None	SVP V-DC-190502-01
W-CWF-28	None	SVP V-DC-190502-01
W-CWF-40	None	Streamside
W-CWF-41	None	Streamside
W-CWF-42	None	Great Pond
W-CWF-50	None	SVP V-JR-190503-01
W-CWF-54	None	SVP V-JR-190503-01
W-CWF-55	None	SVP V-JR-190503-01
W-CWF-56	None	SVP V-JB-190503-02
W-CWF-58	Access Road	Streamside and PSVP-SLG-03
W-CWF-58	Access Road and Collection Bore	Streamside, Atlantic Salmon Habitat and PSVP-V-SLG-03
W-CWF-60	Access Road	Large Marsh
W-CWF-61	Access Road	Peatland
W-CWF-63	None	Streamside
W-CWF-72	None	IWWH
W-DBV-03	None	Streamside
W-DBV-05	None	Streamside
W-DBV-09	None	Streamside
W-DBV-10	None	Streamside
W-DBV-15	Collection	Streamside
W-DBV-16	Collection Bore	PSVP V-DBV-02
W-DC-01	None	Streamside
W-DMC-200	None	Streamside and IWWH

Wetland ID	Potential Infrastructure Impact or Avoidance Measure	WOSS (Habitat Classification)
W-GAR-01	None	Streamside
W-GAR-02	Access Road	Streamside and SVP V-JR-190503-01
W-GAR-03	None	SVP V-JR-190503-01
W-GAR-05	Collection Bore	Flood Prone Zone
W-GAR-07	Access Road	Streamside and IWWH
W-GAR-07	Access Road and Collection Bore	Streamside and IWWH
W-GAR-07	Access Road and Collection Bore	Streamside and IWWH
W-GAR-08	Access Road	IWWH
W-GAR-09	Access Road	Peatland
W-GAR-10	None	Peatland
W-JMR-03	None	Peatland
W-JMR-03	None	Streamside
W-JMR-03	None	Streamside
W-JMR-07	None	Streamside
W-JMR-09	None	Streamside
W-JMR-09	None	Streamside
W-JMR-10	None	Streamside
W-JMR-11	Access Road	Large Marsh and Great Pond
W-JMR-11	Access Road	Large Marsh and Great Pond
W-JMR-12	None	Streamside
W-JMR-12	Access Road	Streamside
W-JMR-14	None	Streamside
W-JMR-14	None	Peatland and Streamside
W-JMR-15	None	Peatland
W-JMR-16	None	Large Marsh/Open Water and IWWH
W-JMR-17	Crane Path and Collection	Streamside and PSVP V-MPA-01
W-JMR-18	None	PSVP V-MPA-01
W-JMR-23	Crane Path and Collection	Streamside
W-JMR-24	Crane Path and Collection	Streamside
W-JMR-26	None	Streamside
W-JMR-29	None	Streamside
W-MJR-10	None	Streamside
W-MJR-12	None	Streamside and PSVP-MPA-01
W-MJR-24	None	Peatland
W-MJR-32	None	Streamside and Large Marsh
W-MJR-32	None	Streamside, Peatland and Large Marsh
W-MJR-32	None	Large Marsh/Open Water

Wetland ID	Potential Infrastructure Impact or Avoidance Measure	WOSS (Habitat Classification)
W-MJR-34	None	Peatland
W-MJR-37	None	Large Marsh
W-MJR-38	None	SVP 19jl
W-MJT-01	O&M Facility	Streamside
W-MJT-04	None	Streamside
W-MJT-05	None	Streamside
W-MJT-08	None	PSVP-MJT-001
W-NSD-01	None	Streamside
W-NSD-01	None	Streamside
W-NSD-02	None	Streamside
W-NSD-10	Crane Path and Collection Bore	Streamside
W-NSD-17	Crane Path	Large Marsh and Great Pond
W-SLG-01	None	Streamside, IWWH and Atlantic Salmon Habitat
W-SLG-06	None	PSVP-SLG-04
W-SLG-07	None	PSVP-SLG-05
W-SLG-08	None	PSVP-MJT-01 and PSVP-SLG-08
W-SLG-09	Access Road	IWWH
W-SLG-11	None	PSVP V-SLG-08
W-THE-07	None	Streamside, IWWH and Large Marsh
W-THE-09	None	Peatland
W-THE-10	None	Streamside
W-THE-13	None	Streamside
W-THE-18	None	Large Marsh
W-THE-18	None	Large Marsh and Streamside
W-THE-18	None	Large Marsh
W-THE-20	None	Streamside and PSVP-V-SLG-02
W-THE-25	None	Streamside and IWWH
W-THE-25	Collection Bore	Streamside, IWWH and Atlantic Salmon Habitat
W-THE-25	Collection Bore	Streamside, IWWH and Atlantic Salmon Habitat
01CFA	None	IWWH
01CFD	Collection Bore	Streamside and IWWH
01CFF	Collection Bore	Streamside
01CFG	None	Peatland
01CFI	None	Open Water
01CFJ/02JLJ	None	Peatland and IWWH
01CFM	None	SVP 19jl

Wetland ID	Potential Infrastructure Impact or Avoidance Measure	WOSS (Habitat Classification)
01CFN	None	SVP 51tt
01CFO	None	SVP 51tt
01CFP	None	SVP 51tt
01CFQ	None	SVP 51tt
01CFR	None	Peatland
01CFT	None	IWWH
01CFU	None	Streamside
01EBA	None	Streamside
01EBC/01EBE/04TTU	None	Streamside
01EBG	None	PSVP 70tt
01EBL	None	Streamside
01EBU	None	PSVP 06eb
01EBV	None	Large Marsh/Open Water
01EBW	None	Streamside
01EBY	None	PSVP 09eb
01EBZ	None	PSVP 10eb
01JLB-02CFH	None	SVP 46tt
01JLE/01JLI/06TTQ	None	Streamside
01JLG	None	Streamside
01JLH	None	Large Marsh/Open Water
01JLL	None	Streamside and SVP 25tt
01rkp	None	PSVP 08rk
01TTC	None	Streamside
01TTD	None	Streamside
01TTE	None	Streamside
01TTF	None	Streamside and SVP 47tt
01TTG	None	SVP 22tt
01TTH	None	Streamside
01TTL	None	PSVP 02tt
01TTM	None	Streamside
01TTN	None	Peatland
01TTS/02CFJ/01JLC	None	SVP 58tt
01TTT	None	SVP 23tt
01TTU	None	SVP 24tt
01TTV	None	SVP 24tt
02CFE	None	SVP 19jl
02CFF	None	Open Water

Wetland ID	Potential Infrastructure Impact or Avoidance Measure	WOSS (Habitat Classification)
02CFI	None	SVP 46tt
02CFO	None	Streamside
02CFQ/06ttj	None	SVP 15cf
02CFR	None	SVP 15cf
02CFT/01EBF/04TTW	None	Streamside
02CFW	None	PSVP 69tt
02CFZ/01EBI/05ttc/05ttf	None	Streamside
02ebc/02ebd/03cfq	None	Streamside
02ebk	None	Streamside
02jlg	None	Streamside
02jli	None	SVP 13jl
02jll	None	SVPs 18jl and 19jl and Streamside
02jlm/01CFZ	None	Streamside
02TTB	None	Large Marsh/Open Water, Peatland, Streamside
02TTC	None	Streamside
02TTD	None	Streamside
02TTE	None	Streamside
02TTF/01CFV	None	Streamside
02TTN	None	Peatland
02TTO	None	Peatland
02TTQ	None	Peatland
02ttr/03cfo/01rkb/01rke/02tty/01rkl/01rkm/01rke	None	Large Marsh/Open Water and multiple PSVPs
02tts	None	PSVP 11tt
02ttt	None	PSVP 12tt
02ttu	None	PSVP 13tt
03CFJ/03CFK/03CFL/03CFM/01EBT/01JLP	None	Streamside
03cfp	None	Streamside
03tti/03ttk/01jlw	None	Streamside
03ttp	None	PSVP 20tt
03ttq	None	PSVP 20tt
03ttr	None	PSVP 20tt
04ttb	None	Peatland
04ttd	None	Peatland
04ttg	None	Peatland, Open Water and Great Pond
04tti	None	SVP 53tt
04ttr/06tti	None	Streamside and SVP 45tt
04tts/06tth	None	Streamside and SVP 60tt

Wetland ID	Potential Infrastructure Impact or Avoidance Measure	WOSS (Habitat Classification)
05tti	None	Streamside
06ttg	None	SVP 49tt
06ttk	None	Streamside
06ttl	None	Streamside
06tto	None	SVP 60tt
06TTQ	None	Open Water and Streamside
06ttu	None	PSVPs 62tt and 63tt
07tta	None	SVP 25tt
07ttb	None	IWWH
07ttc	None	Large Marsh/Open Water and IWWH
07ttf/07ttg	None	Streamside
07tth	None	Streamside
07ttl/07ttm	None	PSVP 67tt and Streamside
07ttn	None	PSVP 69tt
07tto	None	PSVP 70tt
07ttq	None	PSVP 76tt
07ttv	None	PSVP 76tt
07ttw	None	PSVP 75tt
07ttx	None	PSVP 75tt and 76tt
07tty	None	PSVP 76tt
08ttc	None	Streamside
08ttd	None	PSVP 80tt
08tte	None	PSVP 80tt
08ttf	None	PSVP 80tt
08ttg	None	PSVP 80tt
08tti	None	Streamside
08ttn/09tth/09tti/09ttj/09ttk	None	PSVP 81tt
08tts	None	Streamside and PSVP 84tt
08ttz	None	Streamside
09ttc	None	Streamside
20tta	None	Streamside

5.1.1 Wetland Hydrology

In the Survey Area indicators of wetland hydrology include inundation or evidence of inundation (such as water stained leaves), high water table and/or saturation within the upper portion (12 inches) of the soil during the growing season, drainage patterns, sediment deposition, surface scouring, drift lines within wetlands, geomorphic position, iron deposits, presence of reduced iron, and oxidized root channels in the upper 12 inches of soil. Hydrologic factors contributing to the presence of wetland hydrology within wetlands in the Survey Area included precipitation, inundation with river, pond, or stream water, temporarily ponded snowmelt and runoff, and seasonally to permanently shallow groundwater tables. Hydrologic indicators for individual wetlands are located in Attachment B.

5.1.2 Soils

Typical hydric soil indicators in the Survey Area include ponded or flooded soils, soils with a subsoil matrix depleted of iron near the surface, and soils with dark surface horizons underlain by subsoils with redoximorphic features grading to a depleted matrix near the surface. Upland soils in the Survey Area typically exhibited brown to reddish brown surface horizons underlain by brown to olive brown subsoils. Redoximorphic features indicative of periodic short term saturation, such as iron concentrations and pore linings, were sometimes present in upland subsoils but hydric soil morphologies were absent (i.e. depths and amount of redoximorphic features were not appropriate to make the soils key using Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineation Hydric Soils, Version 7.0 (USDA and NRCS, 2010)). Hydrologic soil profiles for individual wetlands are located in Attachment B.

5.2 STREAMS AND OTHER WATERBODIES

137 stream segments and other waterbodies were delineated within the Survey Area. Of the 137 streams and waterbodies delineated within the Survey Area, 78 were identified as perennial, 33 were identified as intermittent. Another 16 were identified as ephemeral, which by definition are not jurisdictional under the CWA. In addition, ten waterbodies ponds were identified and delineated as ponded water. Table 3 includes a summary of the intermittent and perennial streams, and waterbodies delineated within the Survey Area. The streams and waterbodies are depicted on mapping in Attachment A. Attachment B includes stream and waterbody delineation forms. Attachment C includes a detailed photographic log of the delineated stream and waterbody features.

Table 3. Intermittent and Perennial Streams and Other Waterbodies Delineated within the Survey Area

Stream ID	Associated Water Feature	Stream Class
S-CWF-01	Ingersoll Branch Tributary	Intermittent
S-CWF-02	Beech Hill Brook	Perennial
S-CWF-03	Beech Hill Brook Tributary	Perennial
S-CWF-04	Beech Hill Brook Tributary	Perennial
S-CWF-07	Pleasant River Tributary	Perennial
S-CWF-09	Pleasant River Tributary	Perennial
S-CWF-10	Pleasant River Tributary	Perennial
S-CWF-12	Pleasant River	Perennial
S-CWF-15	Pleasant River Tributary	Perennial
S-CWF-16	Pleasant River	Perennial
S-DBV-06	Pleasant River Tributary	Perennial
S-DMC-600	Pleasant River	Perennial
S-DMC-200	Bog Stream Tributary	Intermittent
S-GAR-1	Pleasant River Tributary	Intermittent
S-GAR-2	Pleasant River Tributary	Perennial
S-JMR-01	Western Little River	Intermittent
S-JMR-02	Western Little River Tributary	Perennial
S-JMR-03	Taylor Branch Tributary	Intermittent
S-JMR-04	Taylor Branch Tributary	Intermittent
S-JMR-05	Taylor Branch	Perennial
S-JMR-06	Colonel Brook	Perennial
S-JMR-07	Northwest Branch Montegail Stream Tributary	Perennial
S-JMR-08	Northwest Branch Montegail Stream	Perennial
S-JMR-09	Northwest Branch Montegail Stream	Perennial
S-JMR-10	Colonel Brook Tributary	Intermittent
S-JMR-20	Fred Dorr Brook Tributary	Intermittent
S-JMR-21	Fred Dorr Brook	Perennial
S-JMR-22	Fred Dorr Brook Tributary	Intermittent
S-JMR-23	Fred Dorr Brook Tributary	Intermittent
S-MJR-01	Fred Dorr Brook	Perennial
S-MJR-03	Fred Dorr Brook Tributary	Intermittent
S-MJR-05	Western Little River Tributary	Perennial
S-MJR-06	Western Little River	Perennial
S-MJR-07	Western Little River	Perennial
S-MJR-08	Taylor Branch	Perennial
S-MJR-09	Taylor Branch Tributary	Perennial

Stream ID	Associated Water Feature	Stream Class
S-MJR-10	Taylor Branch Tributary	Perennial
S-MJT-01	Branch Brook Tributary	Farm Pond
S-MJT-02	Beech Hill Brook Tributary	Perennial
S-MJT-03	Beech Hill Brook Tributary	Intermittent
S-NSD-1	Fred Dorr Brook	Perennial
S-NSD-2	Fred Dorr Brook	Intermittent
S-NSD-3	Fred Dorr Brook Tributary	Intermittent
S-NSD-4	Pleasant River Tributary	Intermittent
S-NSD-5	Pleasant River Tributary	Perennial
S-NSD-6	Ingersoll Branch Tributary	Intermittent
S-NSD-7	Ingersoll Branch Tributary	Intermittent
S-SLG-02	Colonel Brook	Perennial
S-SLG-05	Pleasant River Tributary	Perennial
S-SLG-06	Pleasant River Tributary	Intermittent
S-SLG-07	Beech Hill Brook Tributary	Intermittent
S-THE-01	Taylor Branch	Intermittent
S-THE-02	Taylor Branch Tributary	Intermittent
S-THE-03	Taylor Branch	Perennial
S-THE-04	Taylor Branch	Perennial
S-THE-05	Taylor Branch Tributary	Intermittent
S-THE-06	Taylor Branch Tributary	Perennial
S-THE-08	Pleasant River Tributary	Perennial
S-THE-09	Pleasant River	Perennial
S-THE-10	Pleasant River Tributary	Perennial
WB-THE-01	Beaver Pond	Pond
01CF	Pleasant River Tributary	Perennial
01CFE	Pleasant River Tributary	Pond
01CFS	East Pike Brook Pond	Pond
01EB	Trout Brook Tributary	Perennial
01JL	Trout Brook Tributary	Perennial
01KWA	Myers Ponds	Pond
01RK	Trout Brook Tributary	Perennial
01TT	Great Marsh Stream Tributary	Perennial
01TTQ	Great March Stream Tributary	Pond
01TTZ	Myers Ponds	Pond
02CF	Pleasant River Tributary	Perennial
02EB	Bells Brook Tributary	Perennial
02JL	Trout Brook Tributary	Perennial
02TT	Great March Stream Tributary	Perennial

Stream ID	Associated Water Feature	Stream Class
03CF	Pleasant River Tributary	Intermittent
03EB	Bells Brook Tributary	Perennial
03JL	Branch Brook Tributary	Intermittent
03TT	Trout Brook Tributary	Perennial
04cf	Bog Stream Tributary	Perennial
04EB	Bells Brook Tributary	Perennial
04JL	Branch Brook Tributary	Perennial
04TT	Trout Brook	Perennial
04TTE	West Pike Brook Pond	Pond
04TTF	West Pike Brook Pond	Pond
04TTH	West Pike Brook Pond	Pond
05CF	Trout Brook Tributary	Perennial
05EB	Branch Brook Tributary	Perennial
05JL	Bog Stream Tributary	Intermittent
05TT	Trout Brook Tributary	Perennial
06CF	Bells Brook Tributary	Perennial
06EB/10CF	Branch Brook Tributary	Perennial
06JL	Bog Stream Tributary	Intermittent
06TT	Great Marsh Stream Tributary	Perennial
06TT	Great Marsh Stream Tributary	Intermittent
07CF	Bells Brook Tributary	Perennial
07EB	Branch Brook Tributary	Perennial
07TT	Bog Stream Tributary	Perennial
08CF	Branch Brook Tributary	Perennial
08EB	Branch Brook Tributary	Intermittent
08TT	Bog Stream Tributary	Intermittent
08TT	Branch Brook Tributary	Perennial
09CF	Trout Brook Tributary	Perennial
09TT	Mud Hole Brook Tributary	Intermittent
10TT	Trout Brook Tributary	Perennial
12TT	Bells Brook Tributary	Perennial
16TT	Bells Brook Tributary	Perennial
17TT	Bells Brook Tributary	Perennial
18TT	Branch Brook Tributary	Perennial
19TT	Bells Brook Tributary	Intermittent
20TT	Bells Brook Tributary	Intermittent
20TT	Bells Brook Tributary	Perennial
21TT	Bells Brook Tributary	Intermittent
22TT	Bells Brook Tributary	Perennial

Stream ID	Associated Water Feature	Stream Class
23TT	Bells Brook Tributary	Perennial
24TT	Bells Brook Tributary	Perennial
25TT	Branch Brook Tributary	Perennial
26TT	Branch Brook Tributary	Perennial
27TT	Branch Brook Tributary	Perennial
28TT	Branch Brook Tributary	Perennial
29TT	Branch Brook Tributary	Perennial

Table 4 includes a list of the ephemeral streams identified within the Survey Area. Of note, these features are not considered jurisdictional under the CWA. Rather, they are considered jurisdictional under the NRPA.

Table 4. Ephemeral Streams Delineated within the Survey Area

Stream ID	Associated Water Feature	Stream Class
S-CWF-05	Beech Hill Brook Tributary	Ephemeral
S-CWF-06	Pleasant River Tributary	Ephemeral
S-CWF-08	Pleasant River Tributary	Ephemeral
S-CWF-11	Pleasant River Tributary	Ephemeral
S-DBV-01	Pleasant River Tributary	Ephemeral
S-DBV-02	Pleasant River Tributary	Ephemeral
S-DBV-03	Pleasant River Tributary	Ephemeral
S-DBV-04	Pleasant River Tributary	Ephemeral
S-DBV-05	Pleasant River Tributary	Ephemeral
S-JMR-24	Fred Dorr Brook Tributary	Ephemeral
S-MJR-02	Fred Dorr Brook Tributary	Ephemeral
S-MJR-04	Western Little River Tributary	Ephemeral
S-MJT-01	Pleasant River Tributary	Ephemeral
S-SLG-02	Colonel Brook & Pleasant River Tributary	Ephemeral
S-SLG-04	Pleasant River Tributary	Ephemeral
S-THE-07	Taylor Branch Tributary	Ephemeral

6.0 CONCLUSIONS AND DISCUSSION

For the purposes of this delineation, all wetlands and surface waters encountered were delineated and are jurisdictional under the NRPA. However, under the CWA officially determining and verifying the locations and boundaries of delineated wetlands and other surface waters can be done by the initiation of the applicant and evaluation and resulting determination by the USACE, as described in Section 2.1.2. The delineation of wetlands and waters potentially jurisdictional under the CWA, and presented in this report is based on TRC and Stantec's professional training, best professional judgment, and regional experience, combined with guidance from various agencies and regulatory sources, and applicable USACE methodologies (USACE 1987, 2012).

NRPA wetlands and potentially jurisdictional CWA wetlands and waters of the U.S. were delineated to inform the Project design such that potential impacts to protected water resources are avoided or minimized. Based on the extent and location of wetlands and waters within the Survey Area, some level of impact to these potentially jurisdictional CWA and / or NRPA features will be required to construct the proposed Project.

Section 404 of the CWA authorizes the USACE to regulate the discharge of dredged or fill material into waters of the U.S. Due to impacts to potentially jurisdictional wetland and waters of the U.S. from construction of the proposed Project, a CWA Section 404 permit administered by the USACE will be required.

In Maine, the MDEP regulates impacts to those wetland and waterbody resources under the jurisdiction of the NRPA. Impacts to these wetland and waters will generally require the issuance of a NRPA permit. These permits are separated into three tiers based upon the type and quantity of project impacts. The following impact thresholds apply for NRPA permits:

- Tier 1 <15,000 square feet;
- Tier 2 15,000 square feet to 1 acre; and
- Tier 3 (Individual Permit) >1 acre impacts.

For projects with a development footprint greater than 20 acres, a Maine Site Location of Development (Site Law) or "SLODA" permit is required. Under this impact circumstance, MDEP has requested that the Site Law application be filed separately from the NRPA application.

The impact or alteration of a WOSS requires a NRPA permit review. Part of this review will require an in-depth look at Project alternatives and identify compensation or mitigation. Compensation is off-setting a lost function with a function of equal or greater value, with the goal of achieving no net loss of functions and values and an equal or greater net benefit for wetland systems. Alternatives for mitigation and compensation where wetland and stream impacts are unavoidable include restoring degraded resources, enhancing the functions of existing resources, preserving wetlands or waterbodies or adjacent uplands

that have similar functions and are vulnerable to development, creating wetlands or waterbodies from upland areas, and/or contributing to an in-lieu fee program. Alternatives, wetland function and values, and similar calculations will be addressed in greater detail as part of the NRPA permit that will be submitted in parallel with the SLODA permit. The applicant has assumed the use of the Maine In-Lieu-Fee compensation program for those impacts to wetlands under the NRPA, and which is also supported for those impacts to CWA jurisdictional wetlands and waters of the U.S. via the USACE General Permit and mitigation process.

7.0 REFERENCES

Cowardin, L.M., V. Carter, F. Golet and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service.

Gawler, S. and A. Cutko. 2018. Natural Landscapes of Maine: A Guide to Natural Communities and Ecosystems. Maine Natural Areas Program, Maine Department of Conservation, Augusta, Maine.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed [02/20/2020].

United States Army Corps of Engineers 2016. National Wetland Plant List, Version 3.3. http://wetland_plants.usace.army.mil/. U.S Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH.

United States Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

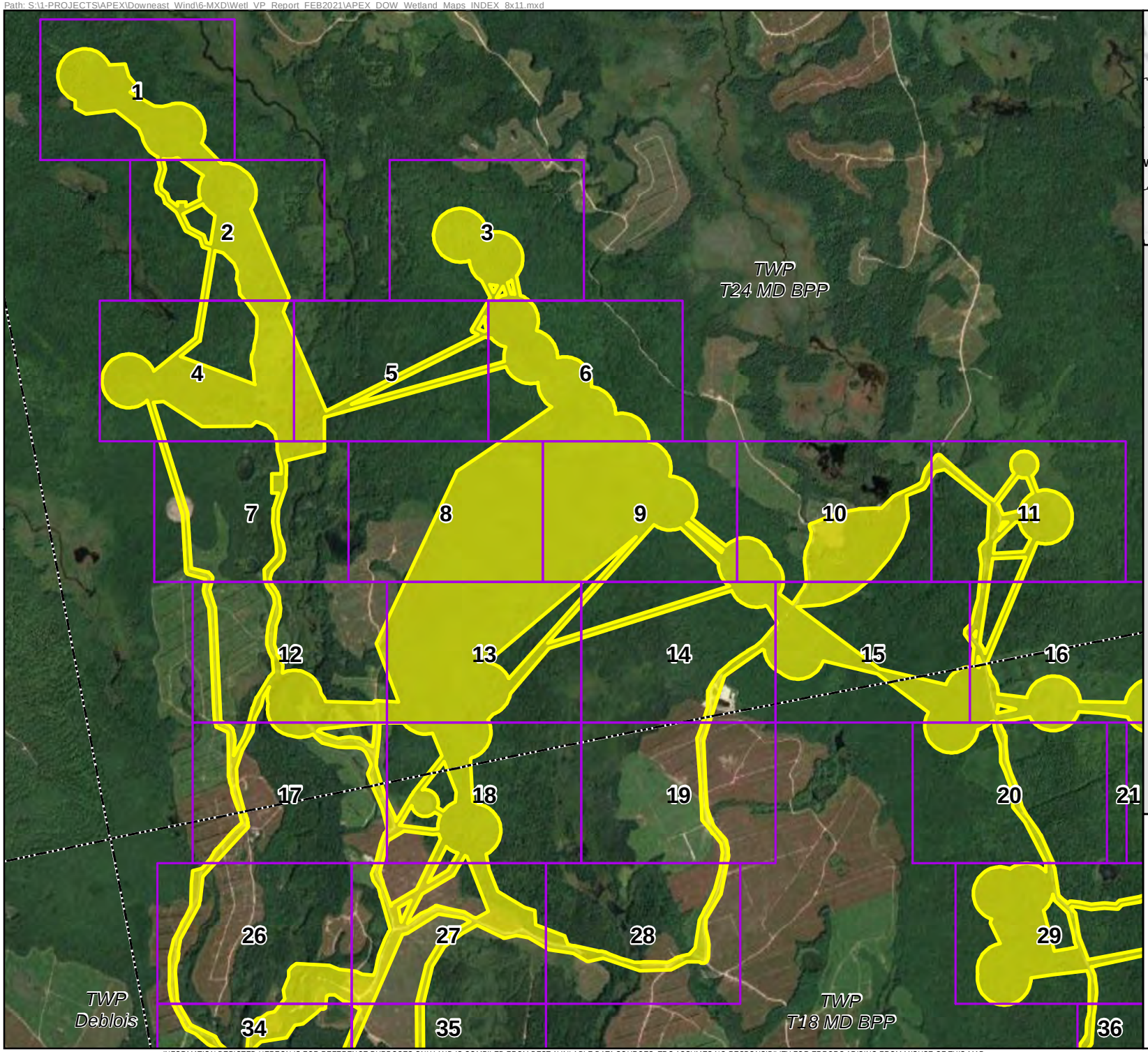
United States Army Corps of Engineers. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. Waterways Experiment Station, Vicksburg MS.

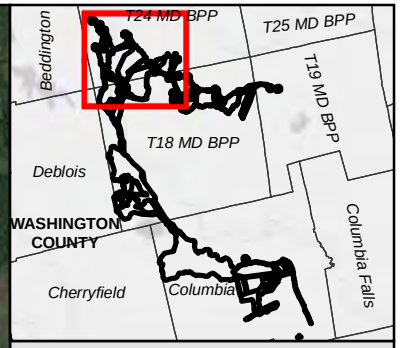
United States Department of Agriculture, Natural Resources Conservation Service. 2010. Field Indicators of Hydric Soils in the United States, Version 8.1. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils

Attachment A

Resource Mapset: Field Delineated Wetlands and Waterbodies

Path: S:\1-PROJECTS\APEX\Downeast_Wind\6-MXD\Wetl_VP_Report_FEB2021\APEX_DOW_Wetland_Maps_INDEX_8x11.mxd





Legend

- Survey Area
- Wetland Map Page Index
- Town Boundary

N

0 0.5

Miles

APEX
Downeast Wind

Washington County, Maine

Wetland
Map Index

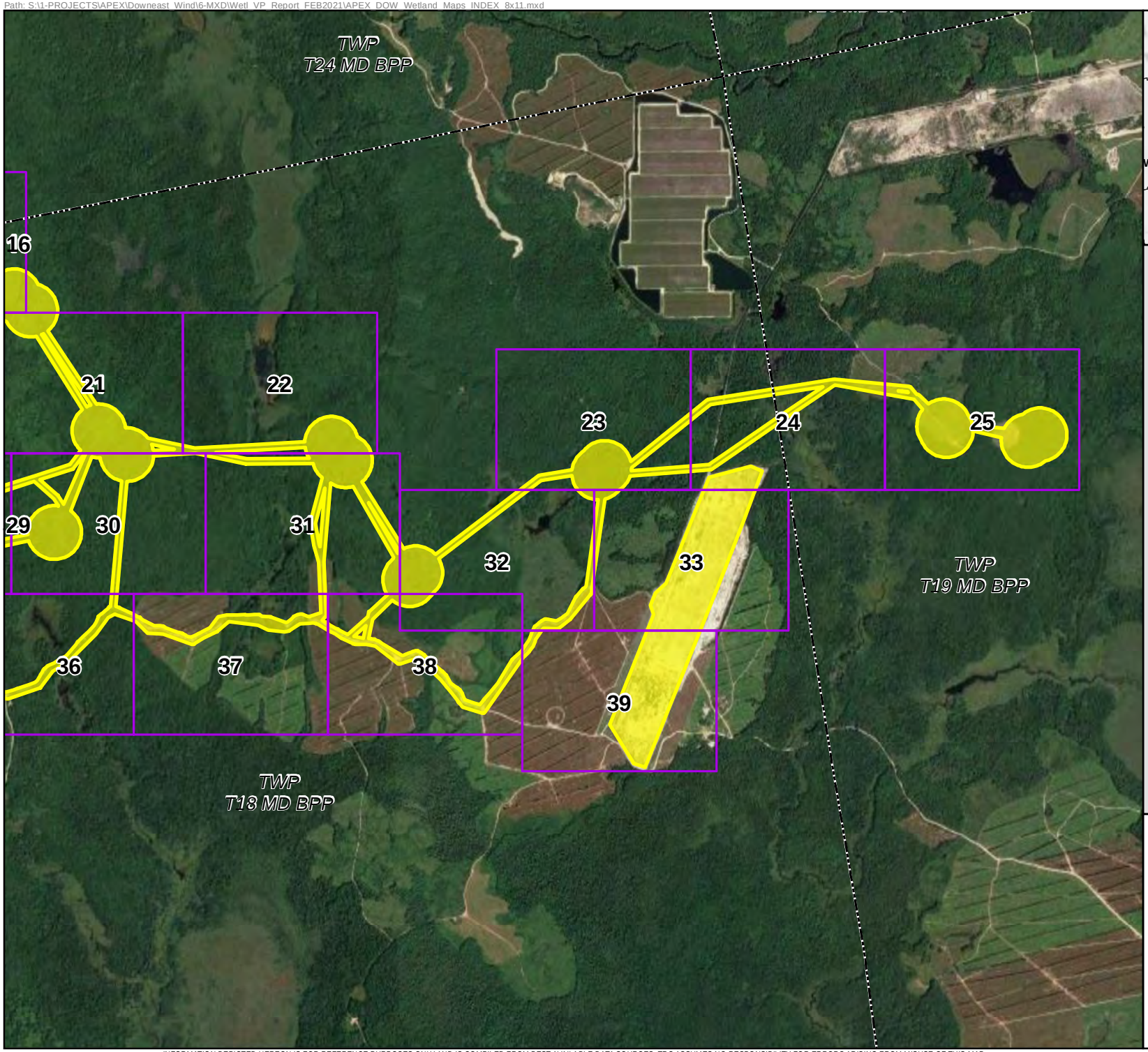
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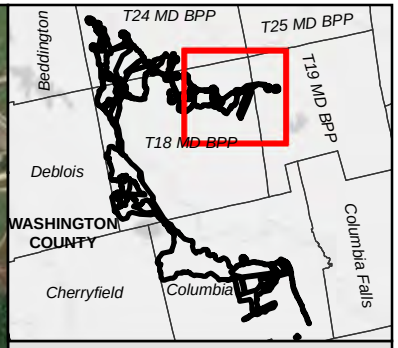
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Legend

- Survey Area
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Miles

APEX
Downeast Wind

Washington County, Maine

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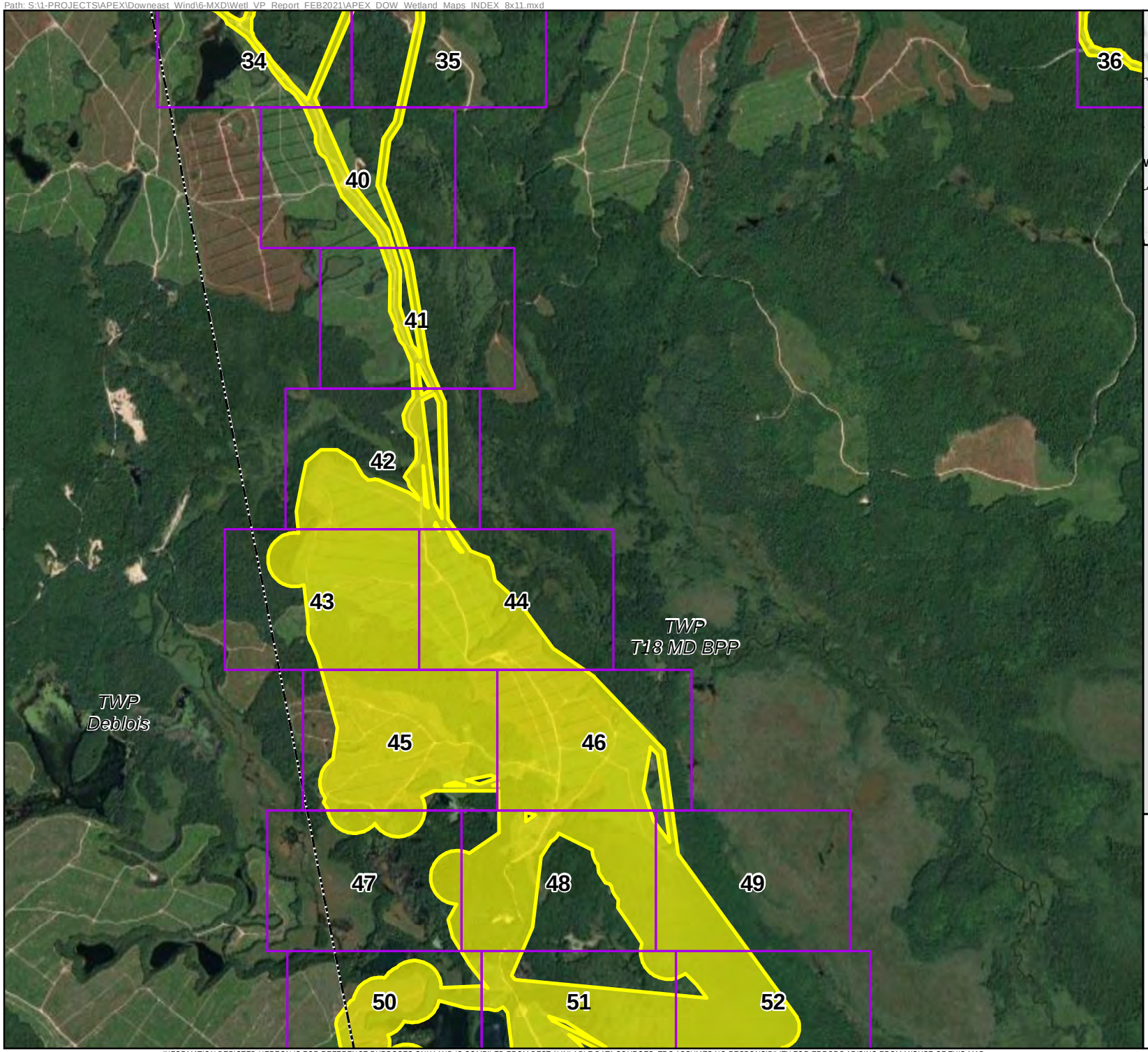
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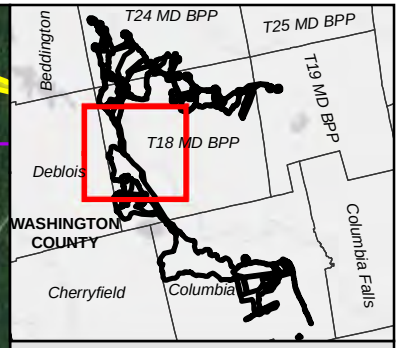
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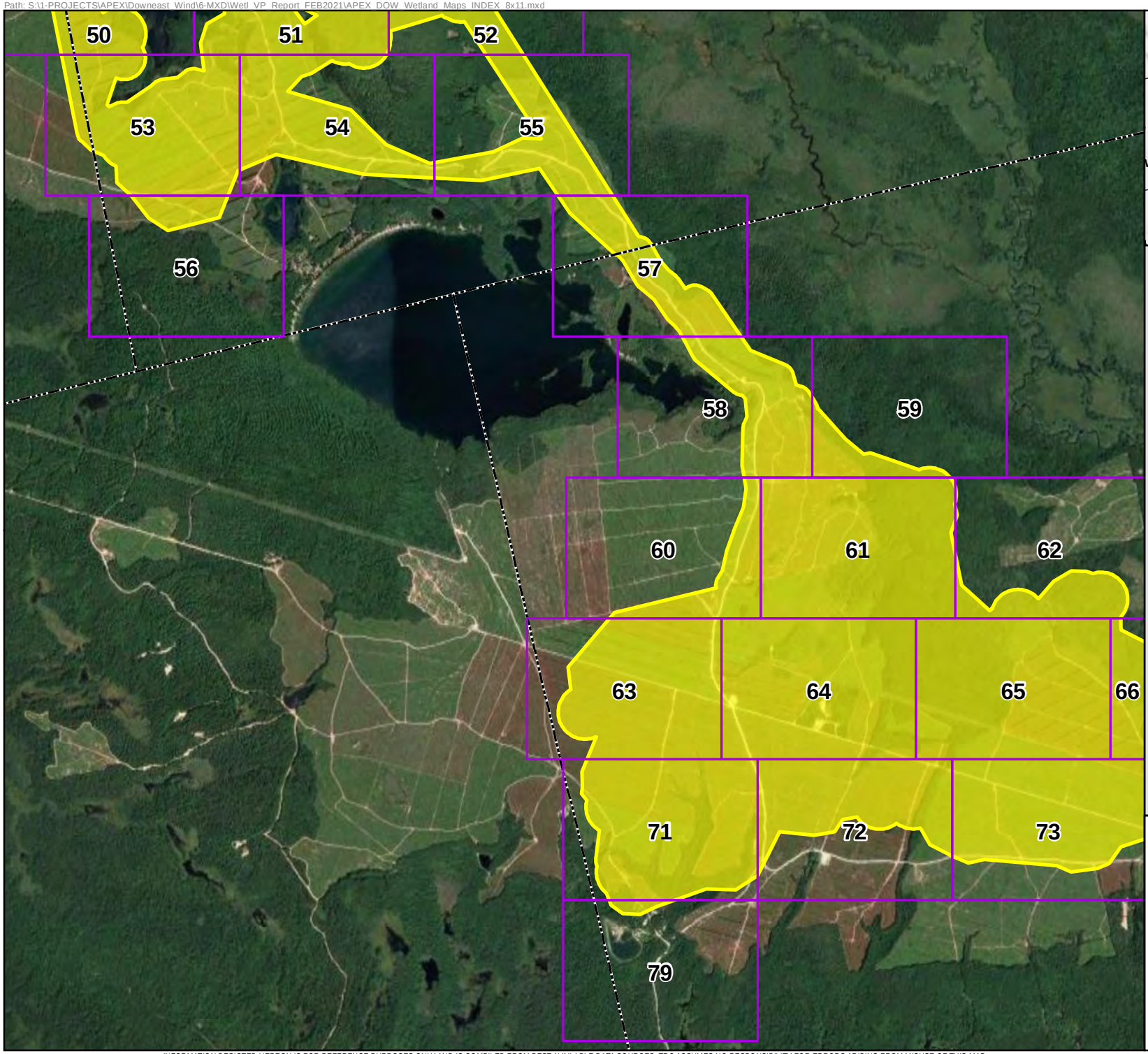
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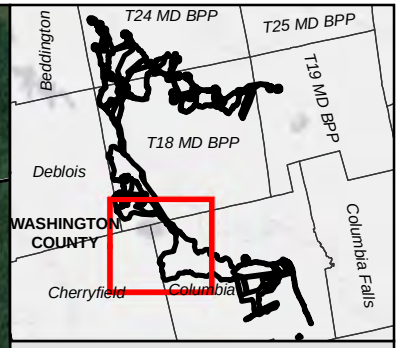
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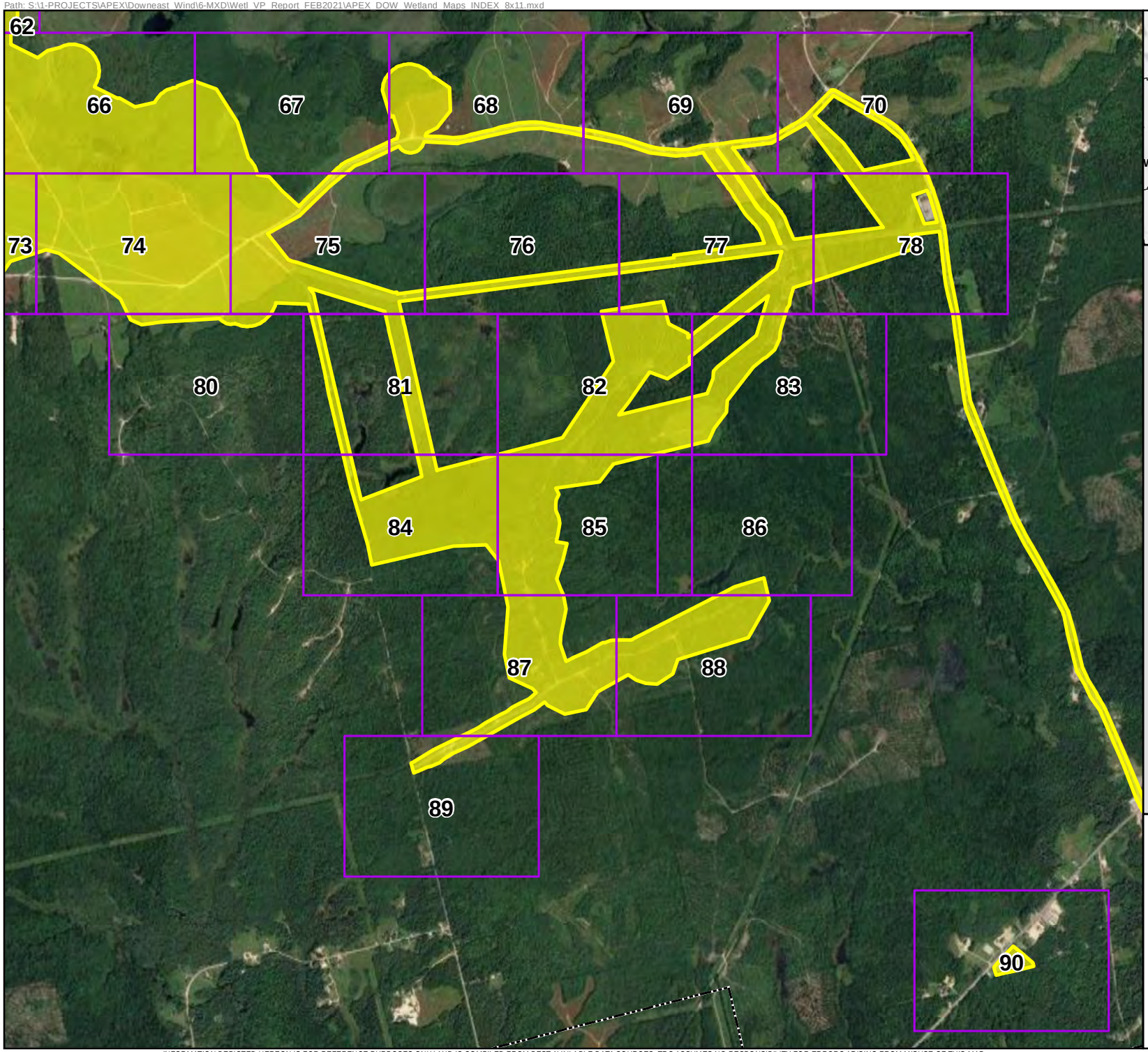
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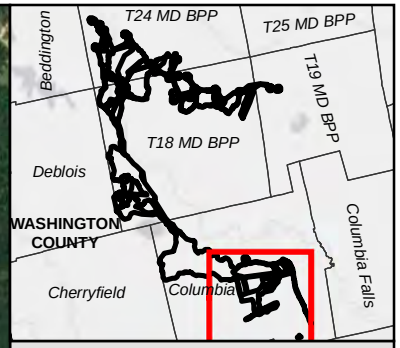
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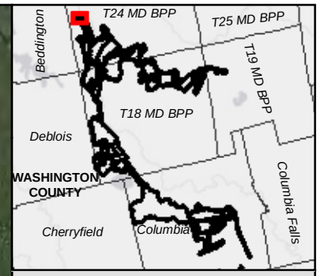
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Feet

APEX
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Washington County, Maine

Wetlands

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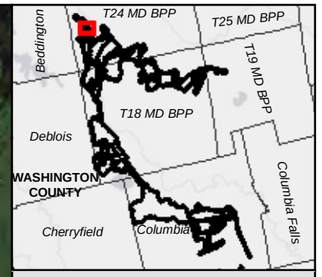
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W-CWF-55
W-GAR-02



Survey Area
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Feet

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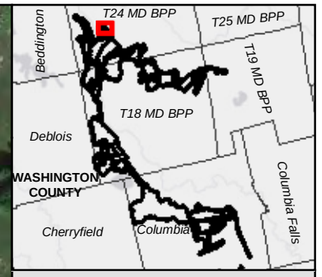
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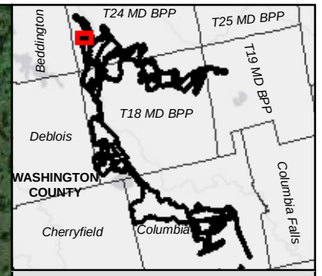
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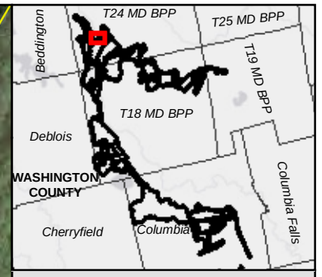
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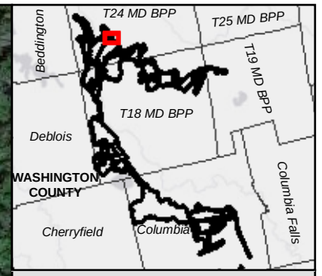
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Washington County, Maine

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2/16/2021

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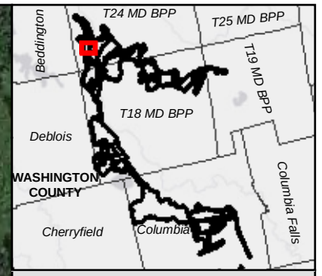
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W-CWF-60



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APEX
Downeast Wind

Washington County, Maine

Wetlands

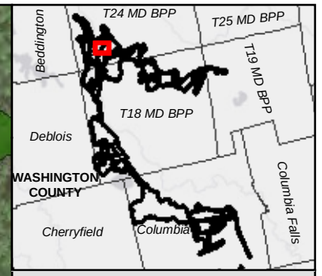
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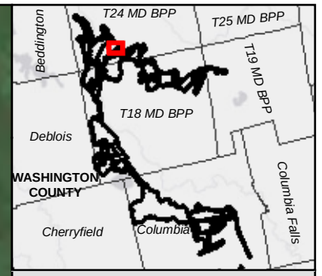
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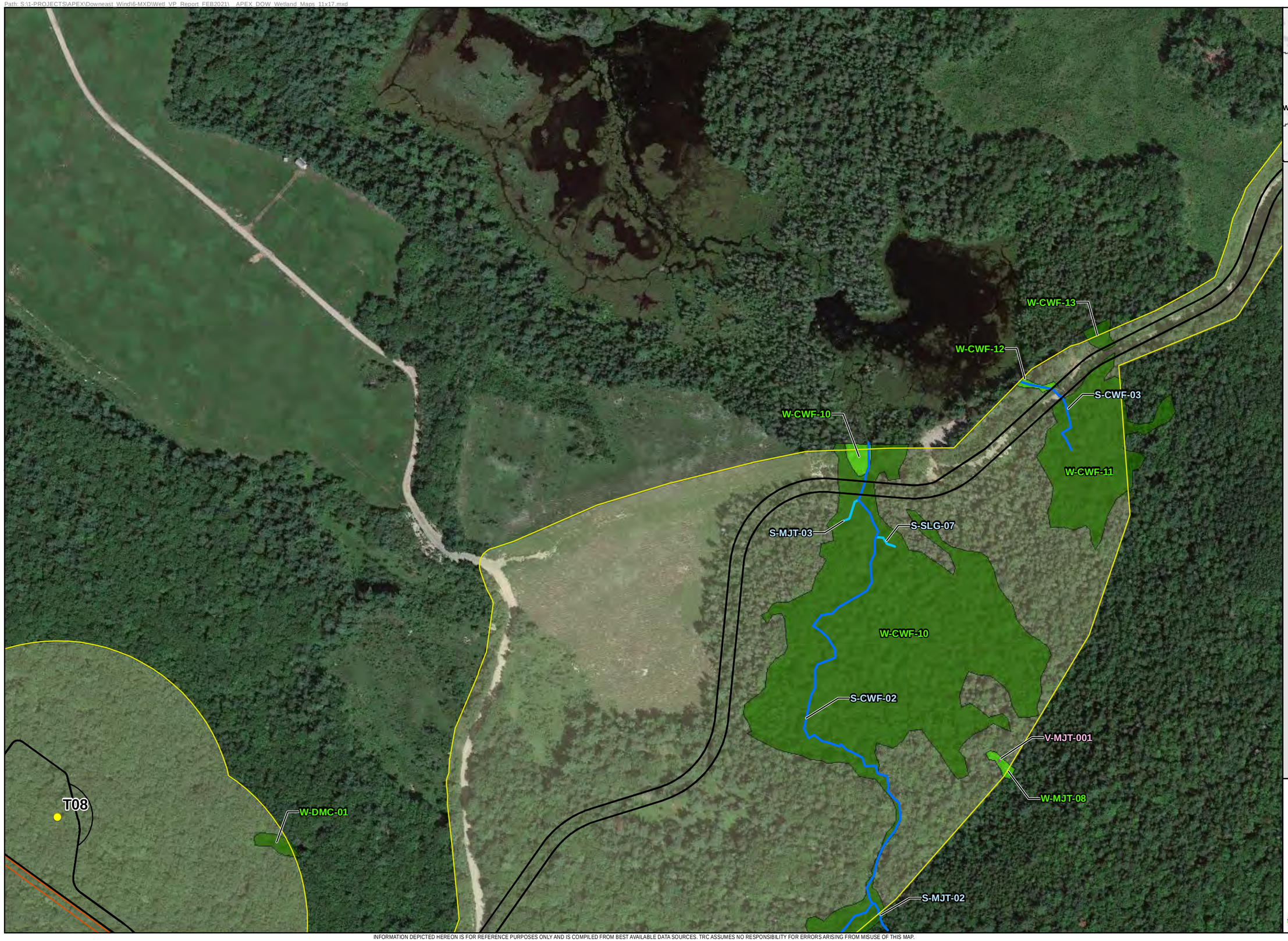
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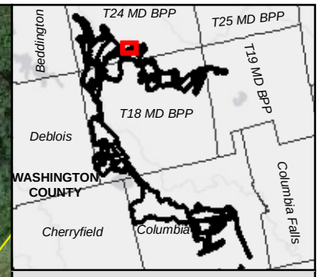
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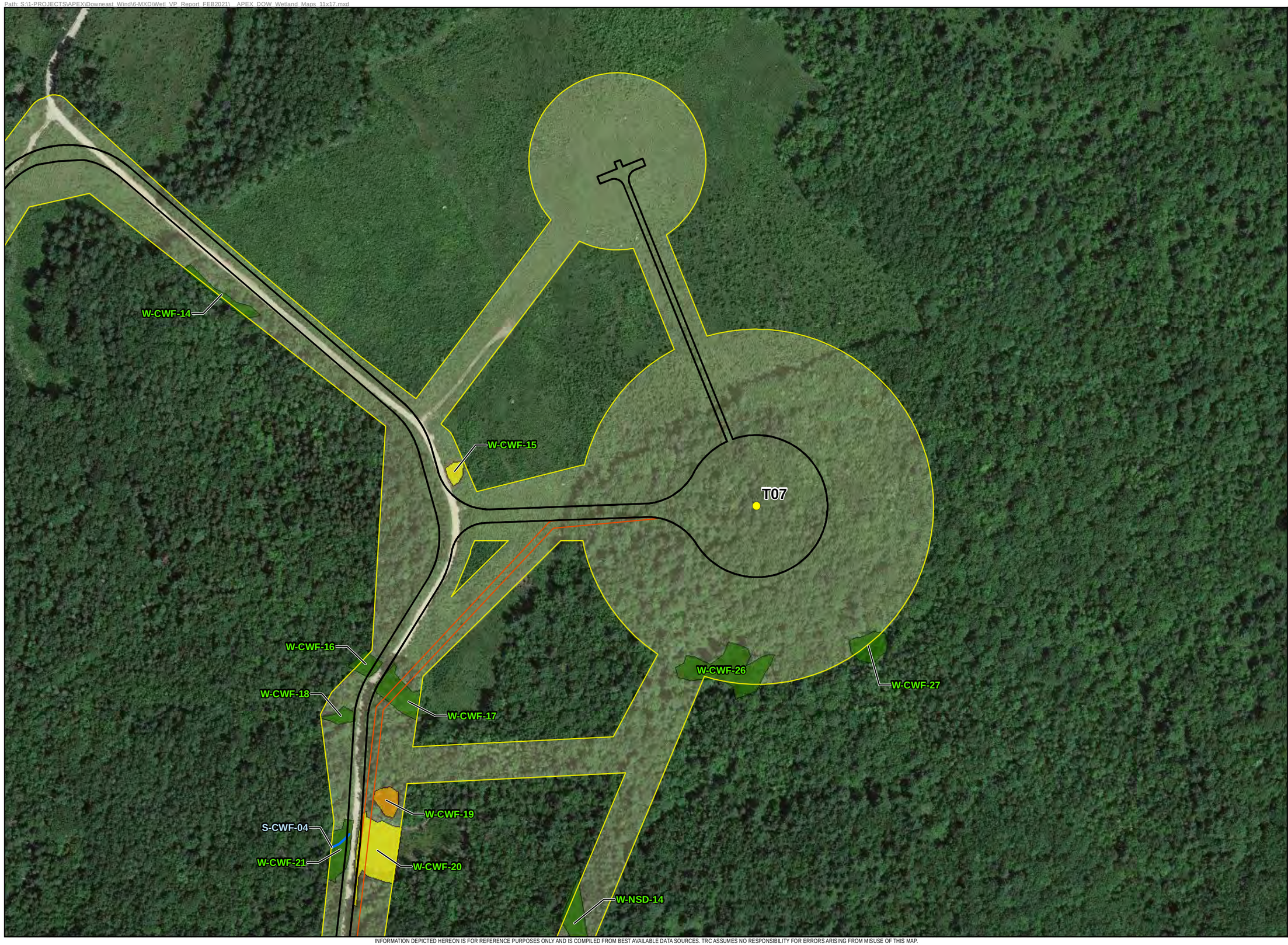
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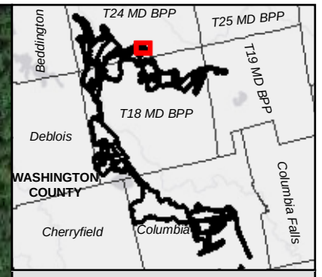
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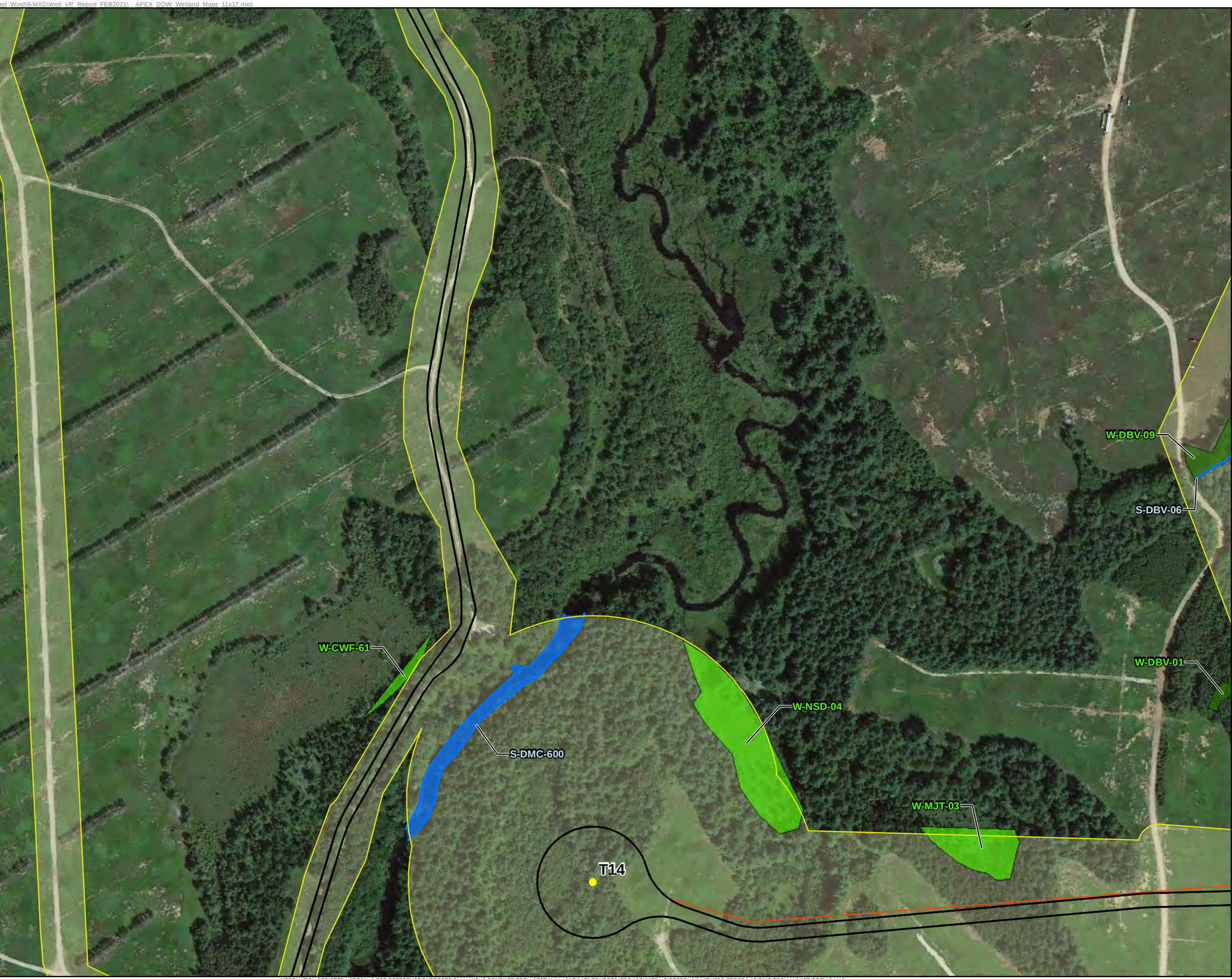
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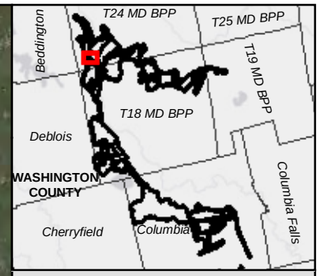
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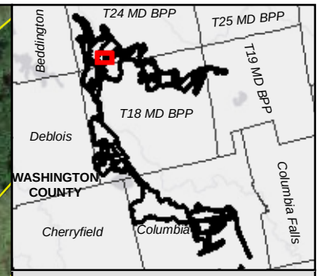
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W-DBV-09
W-DBV-11
W-DBV-02
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S-MJT-01
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W-DMC-60
W-CWF-29



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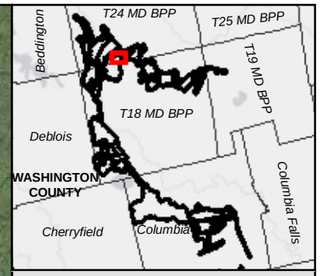
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- Potential Significant Vernal Pool
- Vernal Pool

N

0 250

Feet

APEX
Downeast Wind

Washington County, Maine

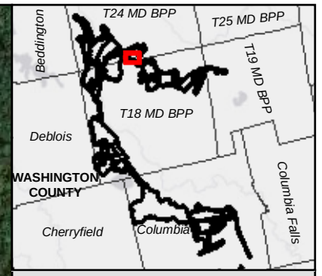
Wetlands

TRC
14 Gabriel Drive
Augusta, ME 04330

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2/16/2021





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N

0 250
Feet

APEX
Downeast Wind
Washington County, Maine

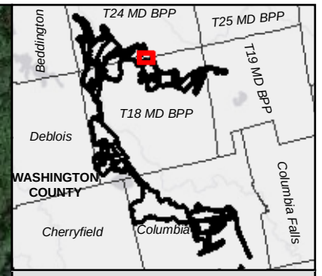
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2/16/2021

W-CWF-22
W-NSD-13
V-DC-190430-02
W-CWF-23
W-NSD-12
S-CWF-05
W-DC-01
W-DC-05
W-DC-02
W-DC-04
W-DC-03
W-NSD-11
W-CWF-24
W-CWF-25
W-MJR-20
W-NSD-15
W-MJR-23
T10a
T11
T12
W-MJR-18
W-DMC-202
W-CWF-02
W-MJR-19
W-MJR-21
W-MJR-24



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Feet

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Downeast Wind
Washington County, Maine

Wetlands

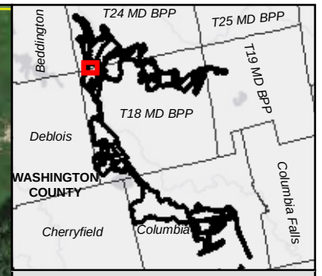
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APEX
Downeast Wind
Washington County, Maine

Wetlands

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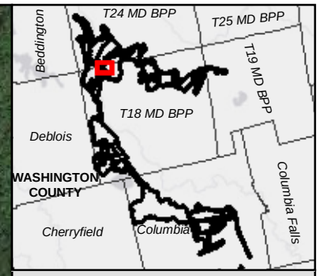
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V-DC-190502-01

W-CWF-28

V-JR-190502-01

T15



- Survey Area
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0 250

Feet

APEX
Downeast Wind

Washington County, Maine

Wetlands

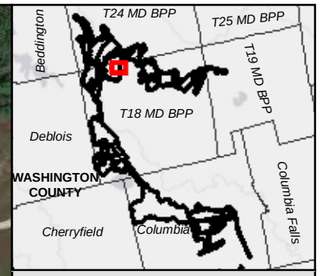
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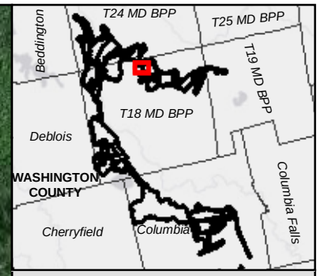
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W-CWF-03

W-CWF-07

W-MJR-22

V-RJ-190430-08



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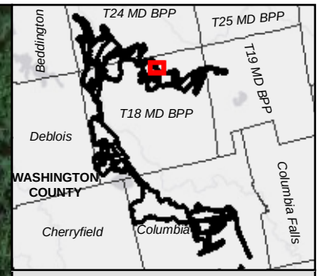
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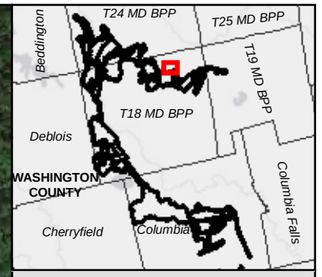
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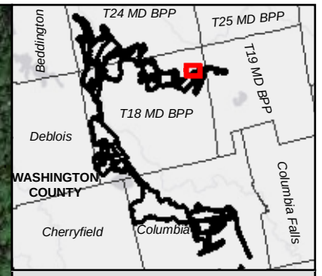
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Downeast Wind

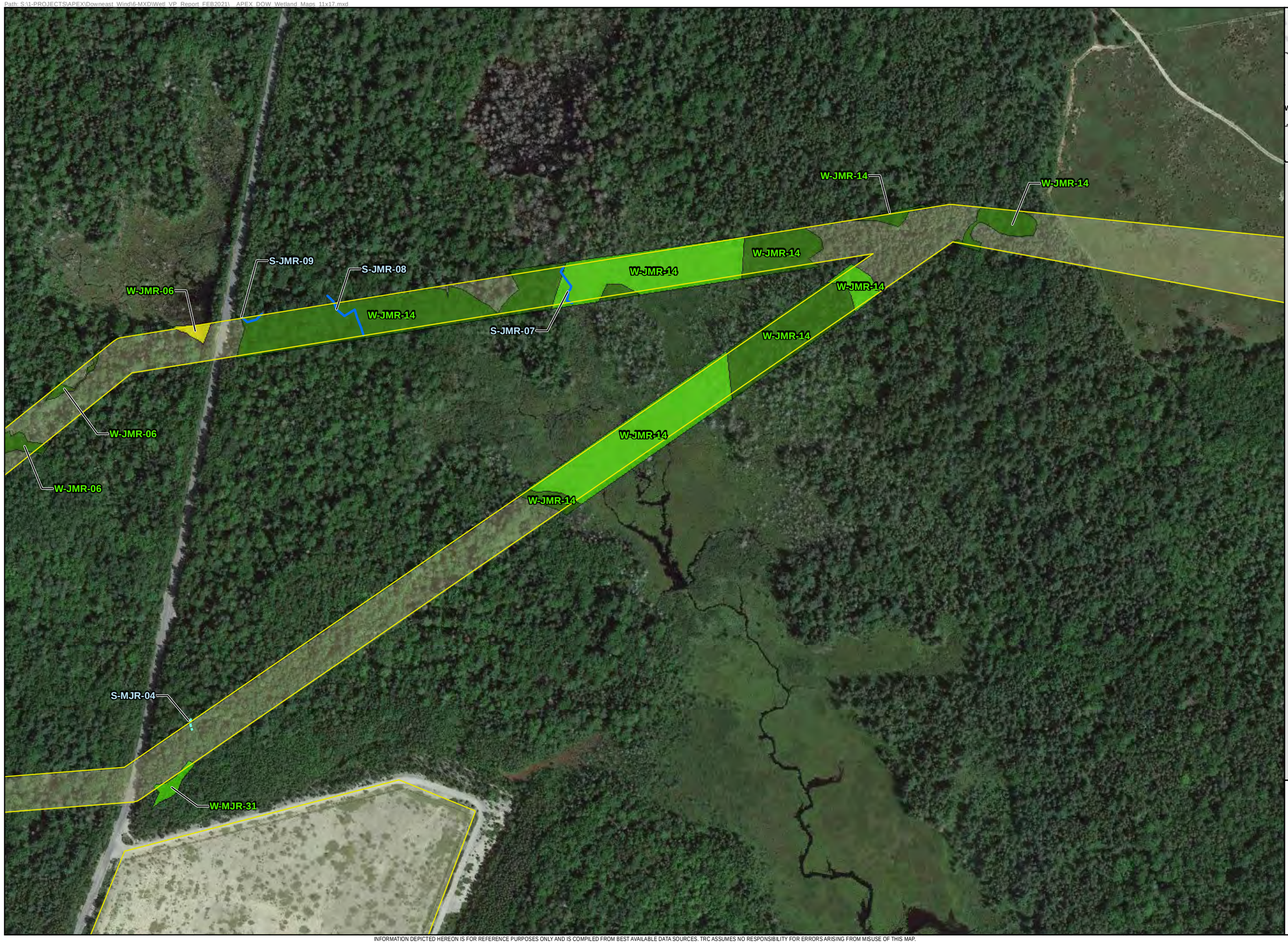
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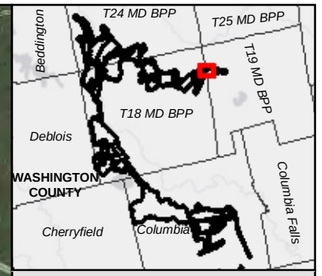
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APEX
Downeast Wind

Washington County, Maine

Wetlands

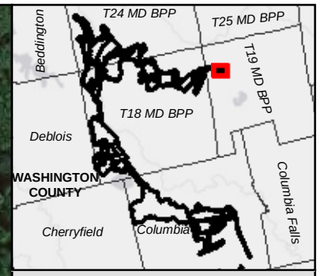
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N

0 250
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APEX
Downeast Wind
Washington County, Maine

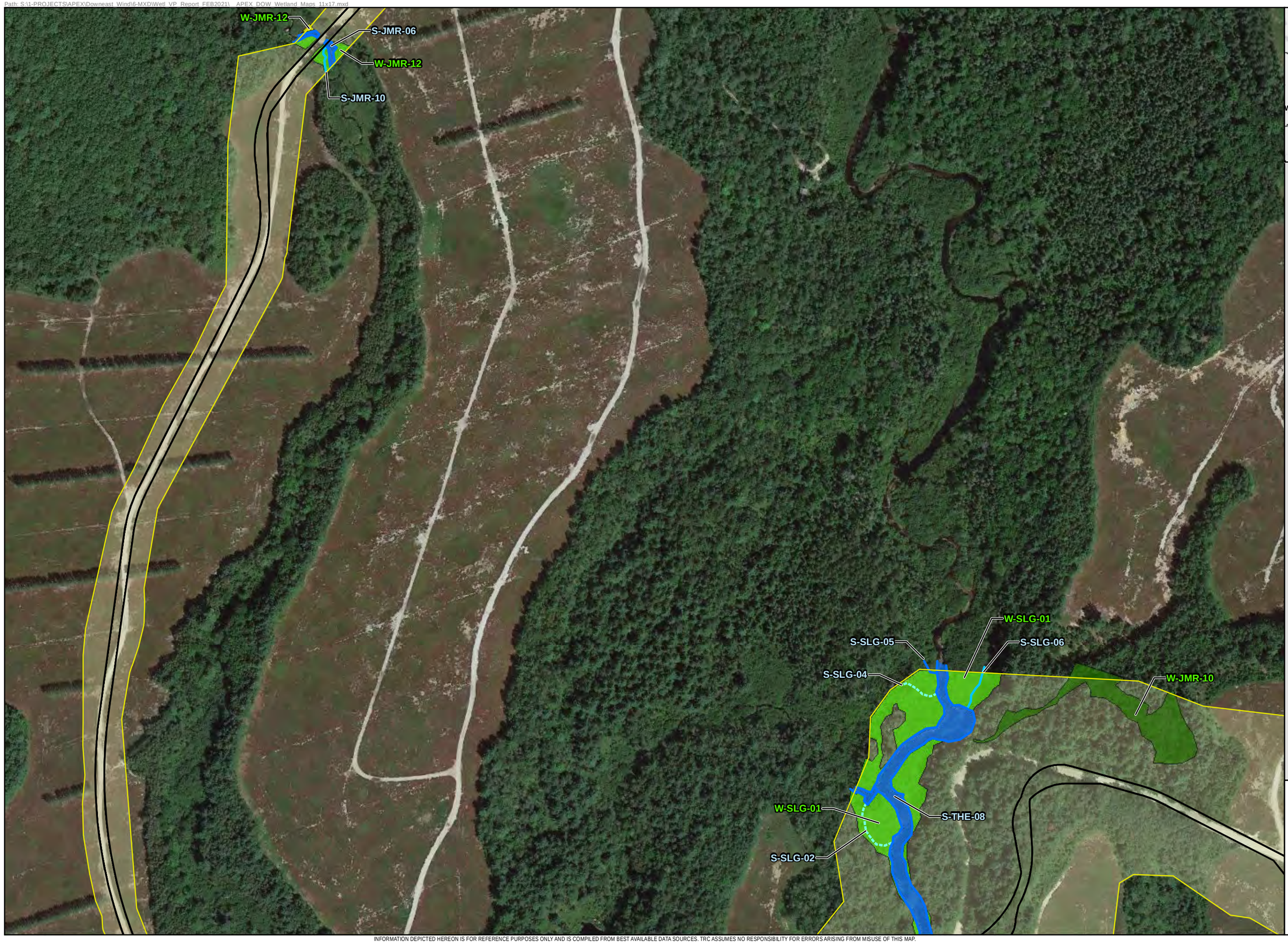
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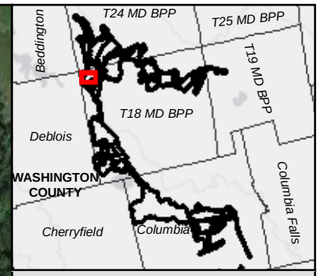
TRC
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Augusta, ME 04330

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0 250

Feet

APEX
Downeast Wind
Washington County, Maine

Wetlands

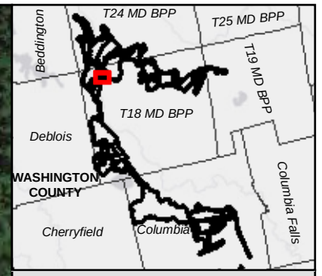
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Washington County, Maine

Wetlands

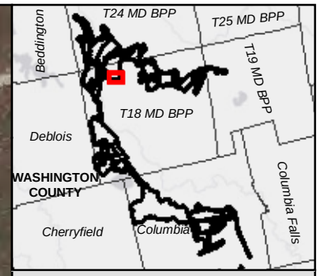
Page 27 of 90

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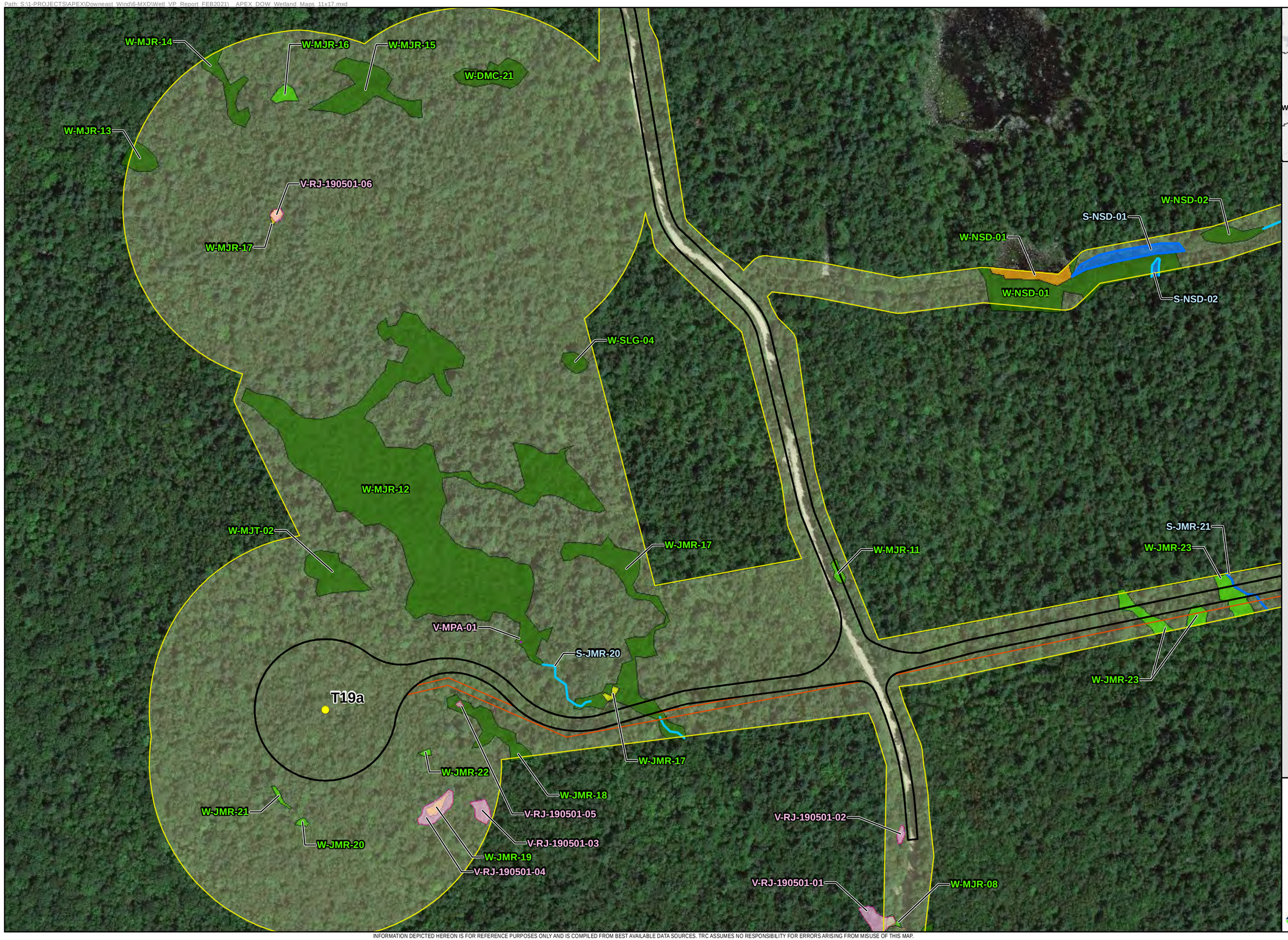
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Washington County, Maine

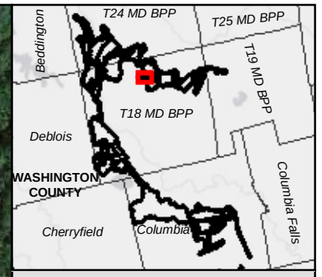
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Washington County, Maine

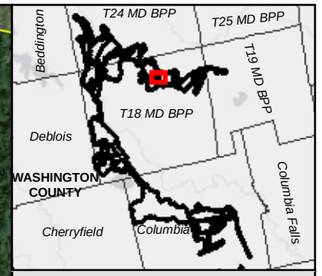
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2/16/2021

W-NSD-03
S-NSD-03
W-JMR-25
W-JMR-27
S-JMR-22
T18
W-JMR-26
S-JMR-23
W-JMR-24
S-JMR-24
W-JMR-26
W-JMR-28
W-JMR-29



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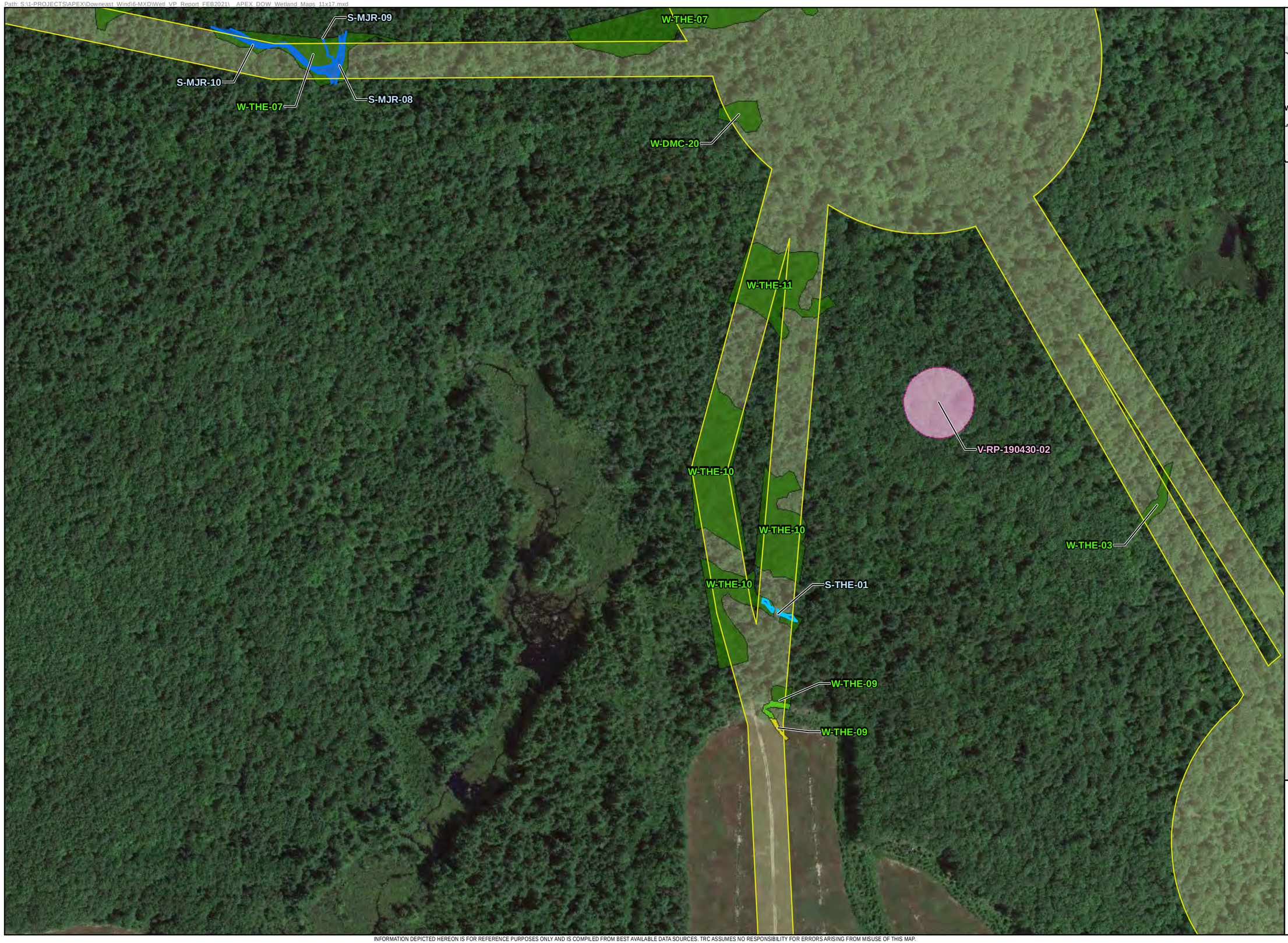
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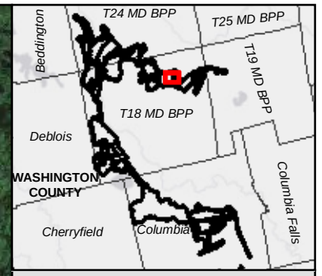
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Washington County, Maine

Wetlands

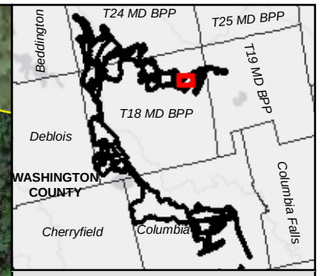
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Washington County, Maine

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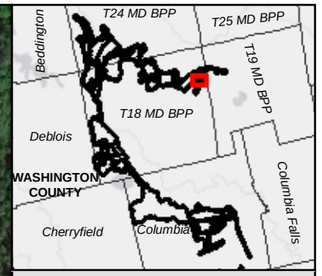
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W-JMR-08

S-JMR-02

W-JMR-03



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N

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Feet

APEX
Downeast Wind
Washington County, Maine

Wetlands

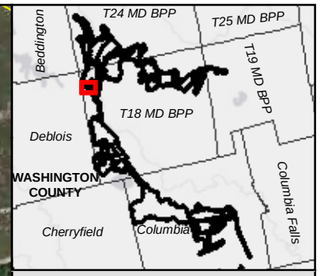
TRC
14 Gabriel Drive
Augusta, ME 04330

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APEX
Downeast Wind

Washington County, Maine

Wetlands

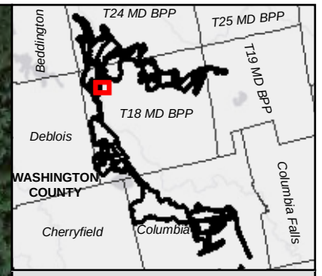
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Washington County, Maine

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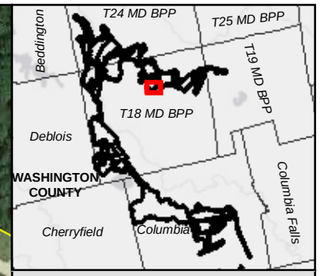
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W-MJR-06



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Wetlands

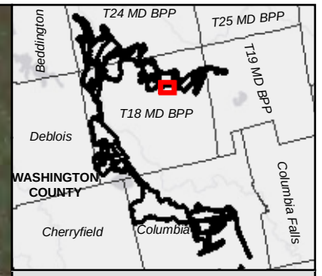
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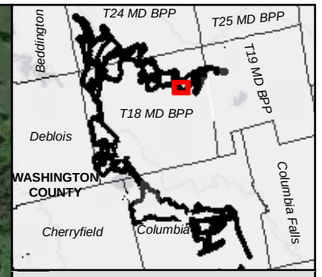
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W-JMR-04

W-JMR-04



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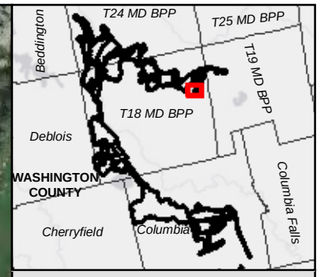
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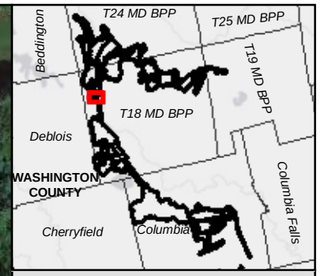
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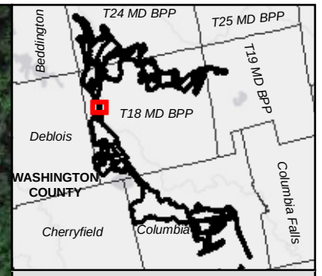
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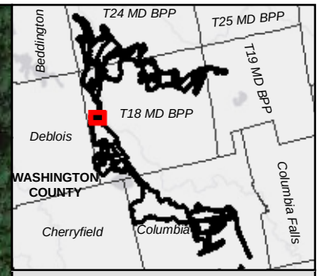
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2/16/2021

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W-GAR-10
W-CWF-71
W-GAR-09
W-CWF-72
W-GAR-08
W-GAR-07
W-GAR-07
S-GAR-02
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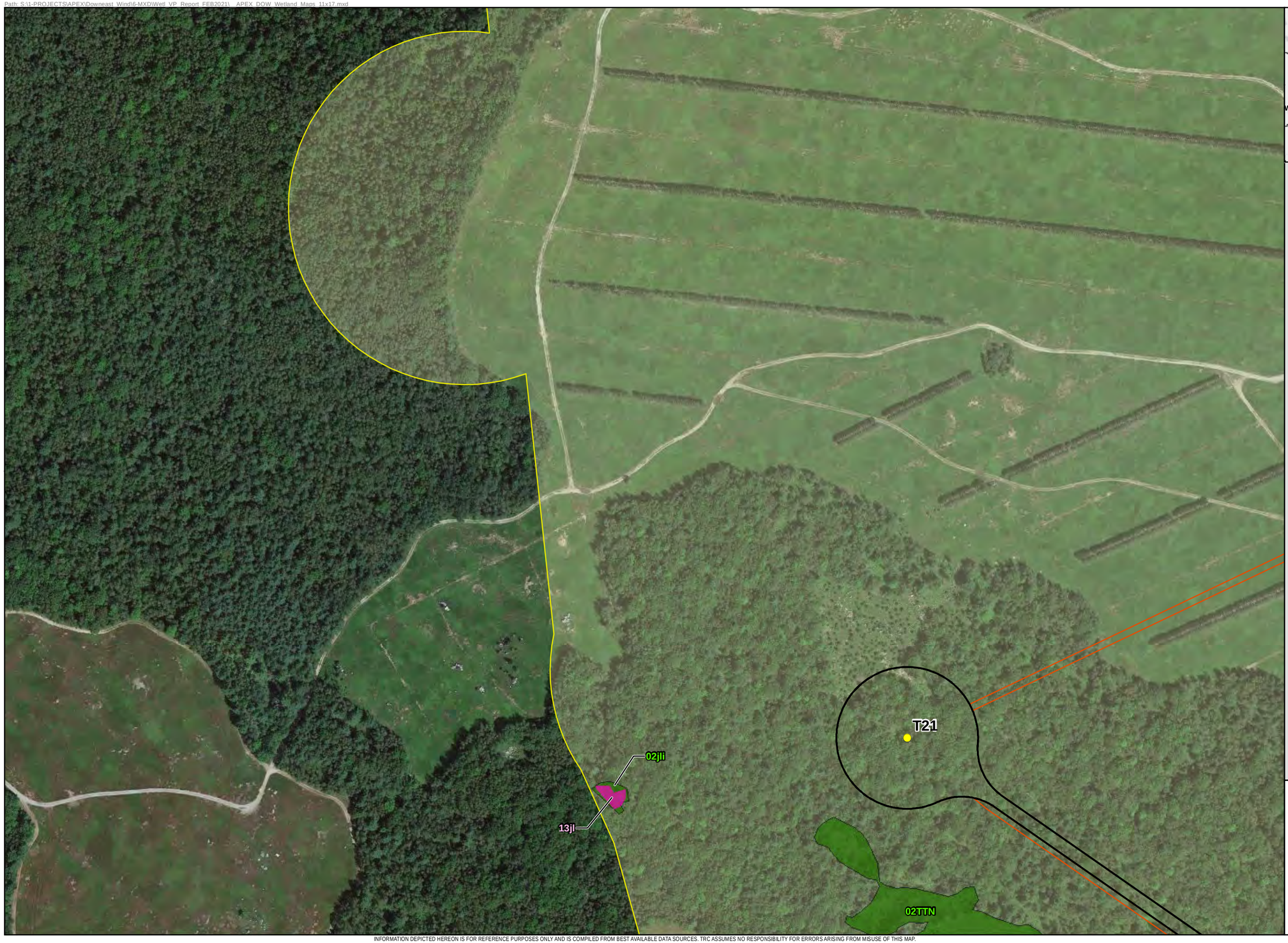
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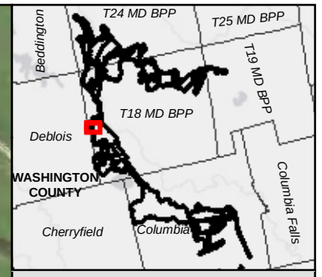
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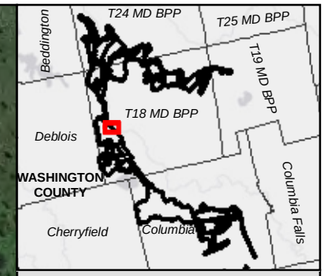
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Washington County, Maine

Wetlands

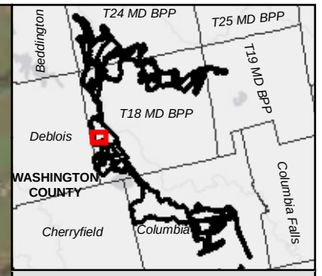
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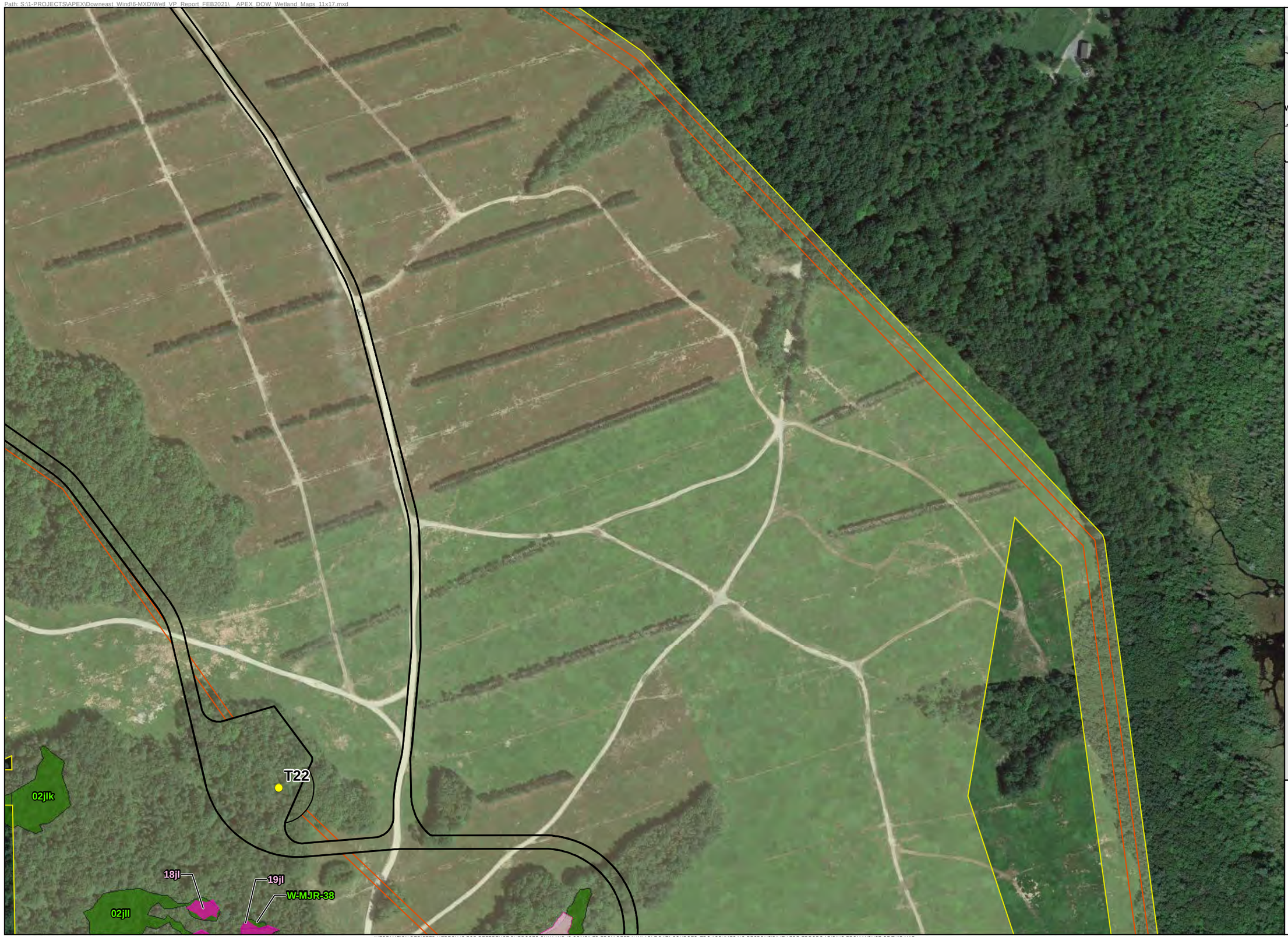
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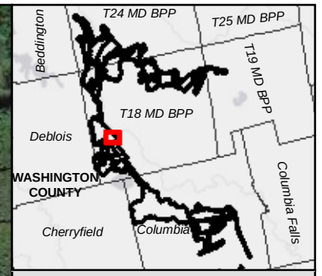
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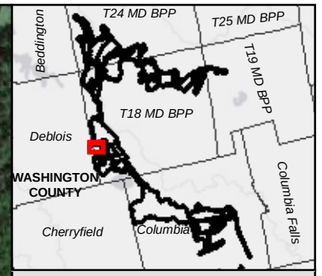
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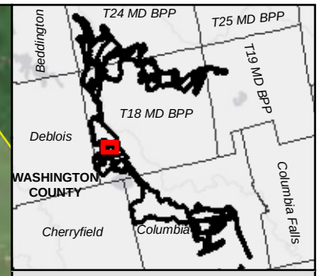
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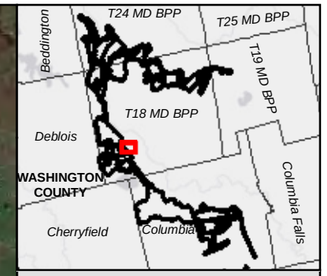
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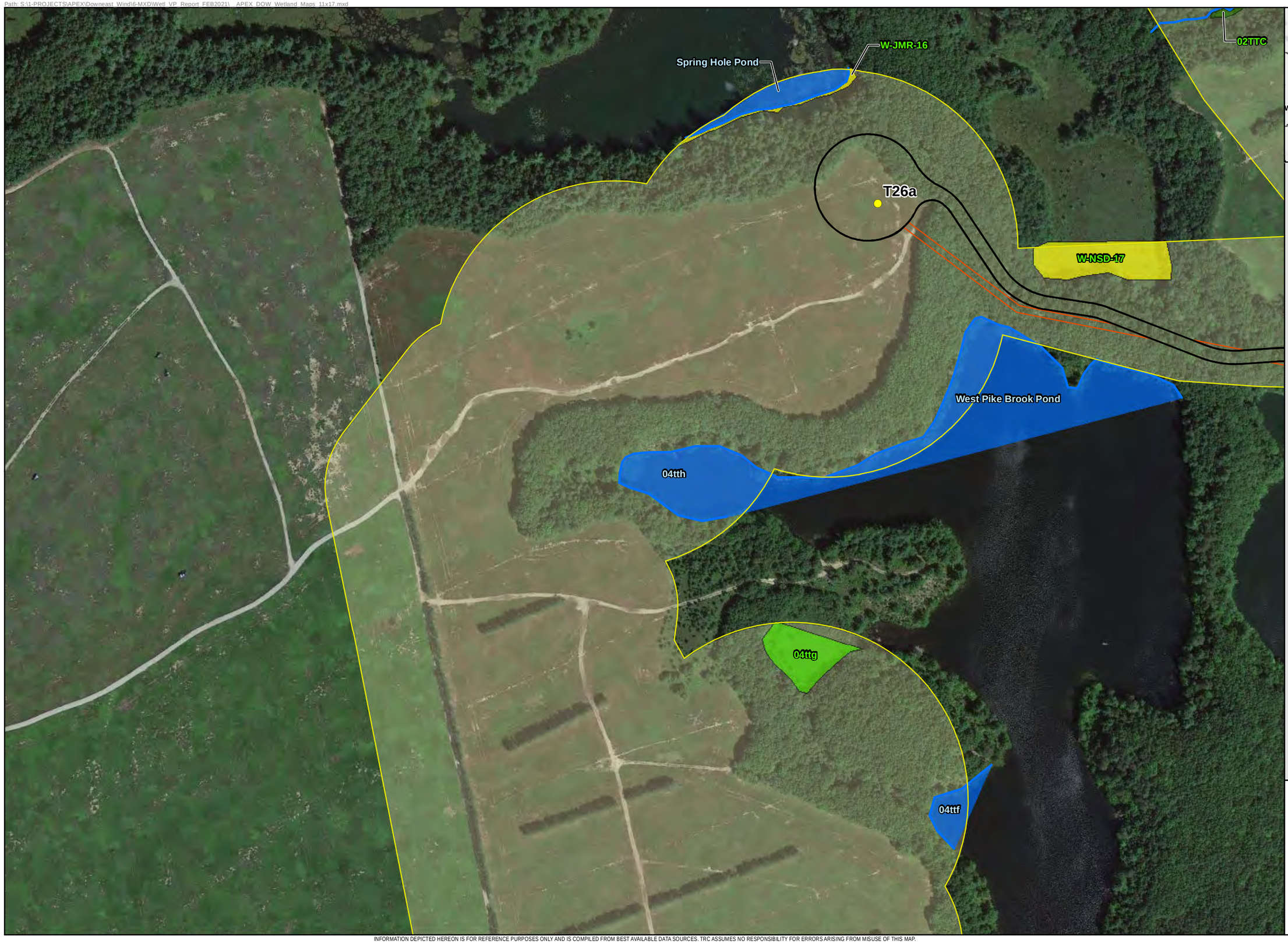
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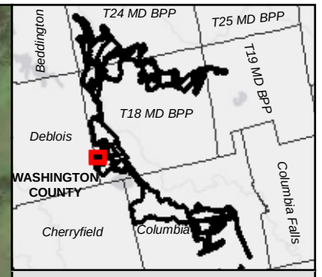
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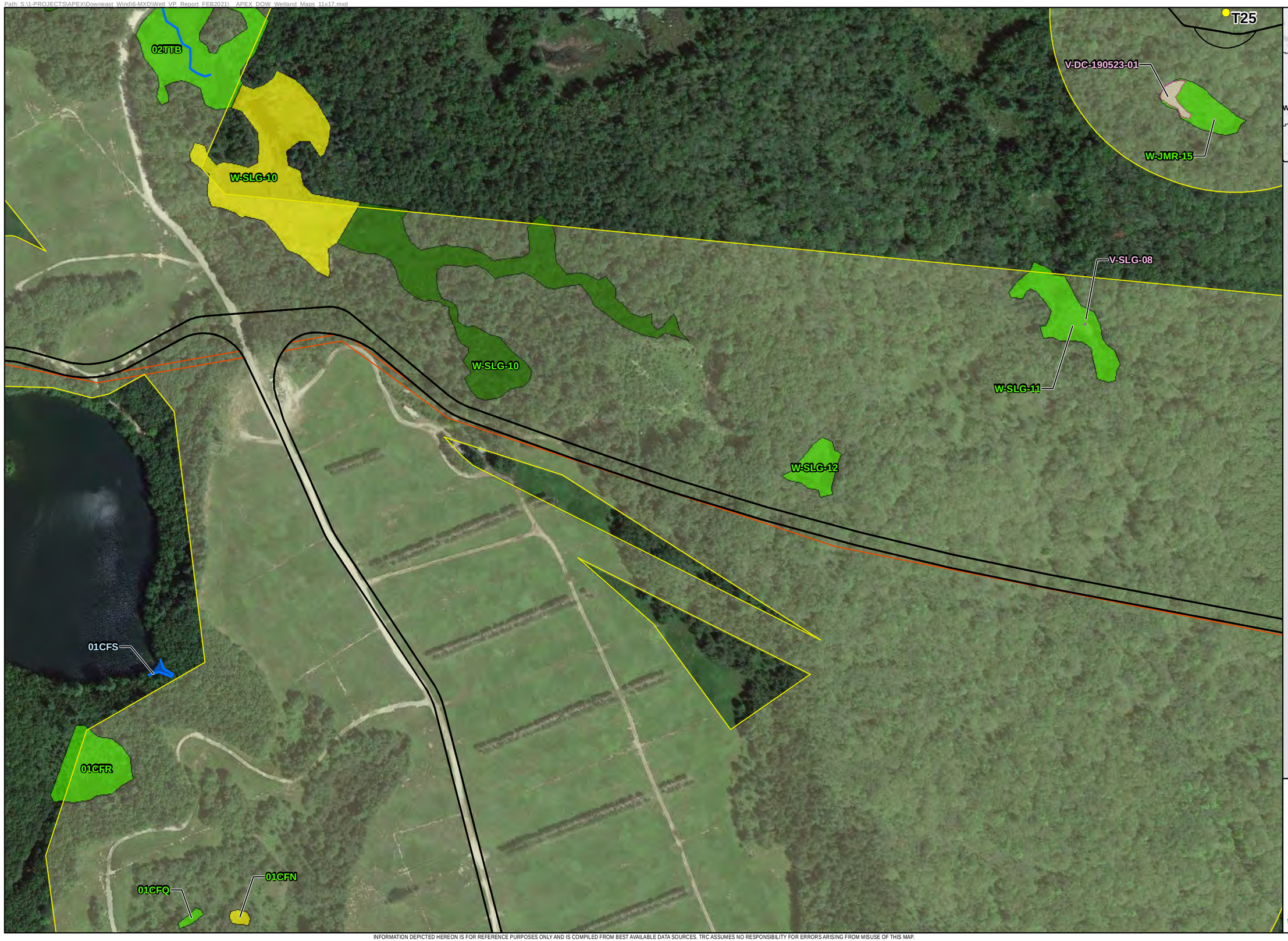
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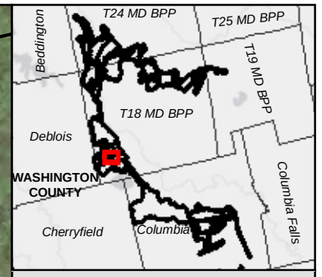
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Washington County, Maine

Wetlands

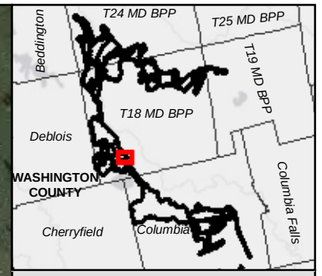
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Feet

APEX
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Washington County, Maine

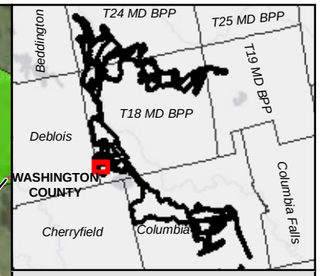
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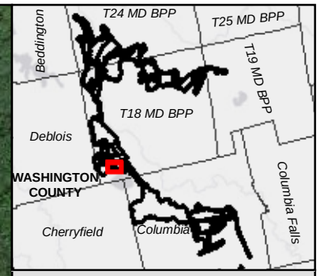
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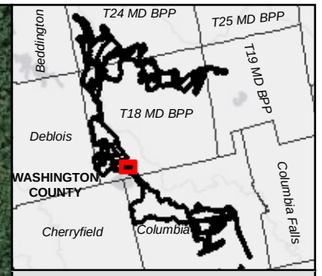
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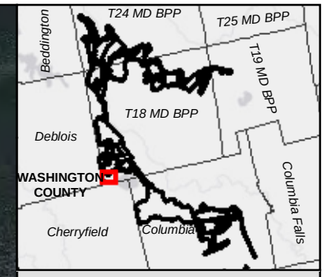
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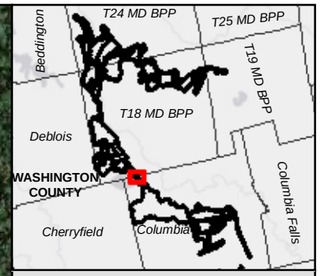
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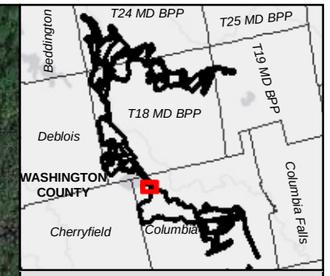
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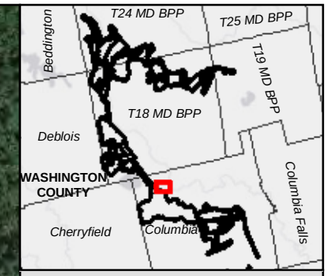
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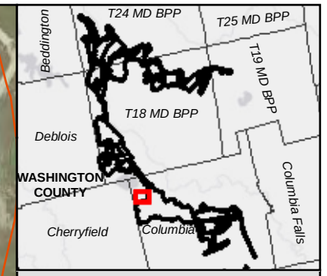
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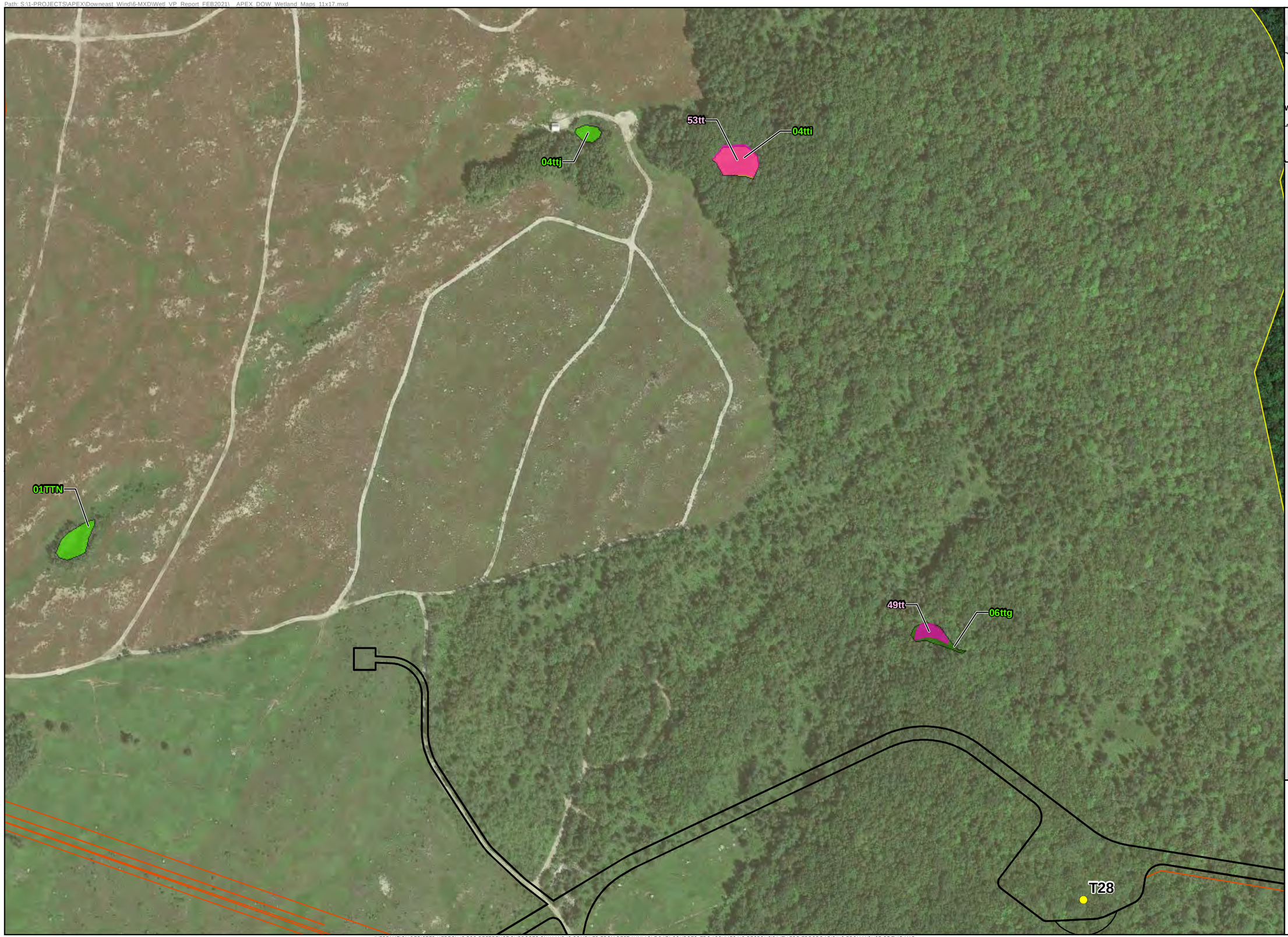
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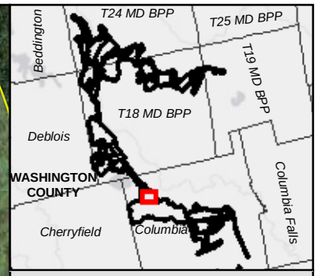
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Wetlands

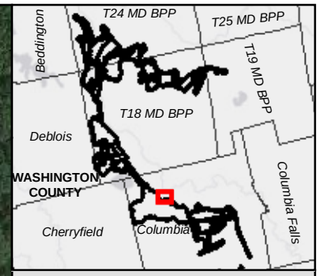
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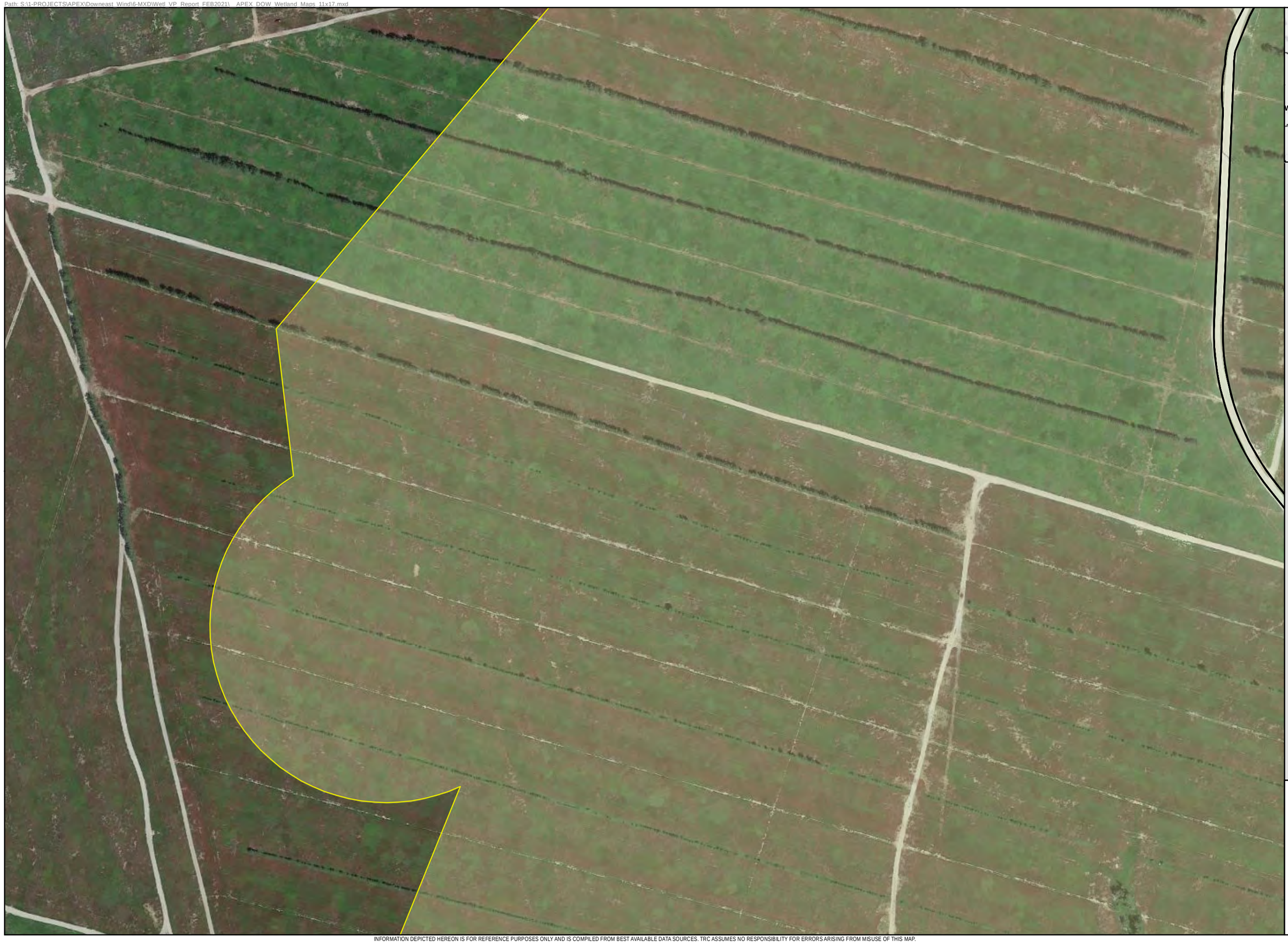
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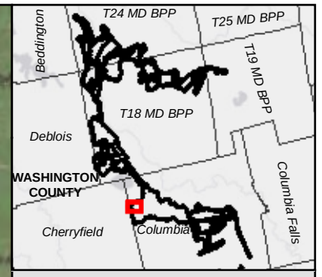
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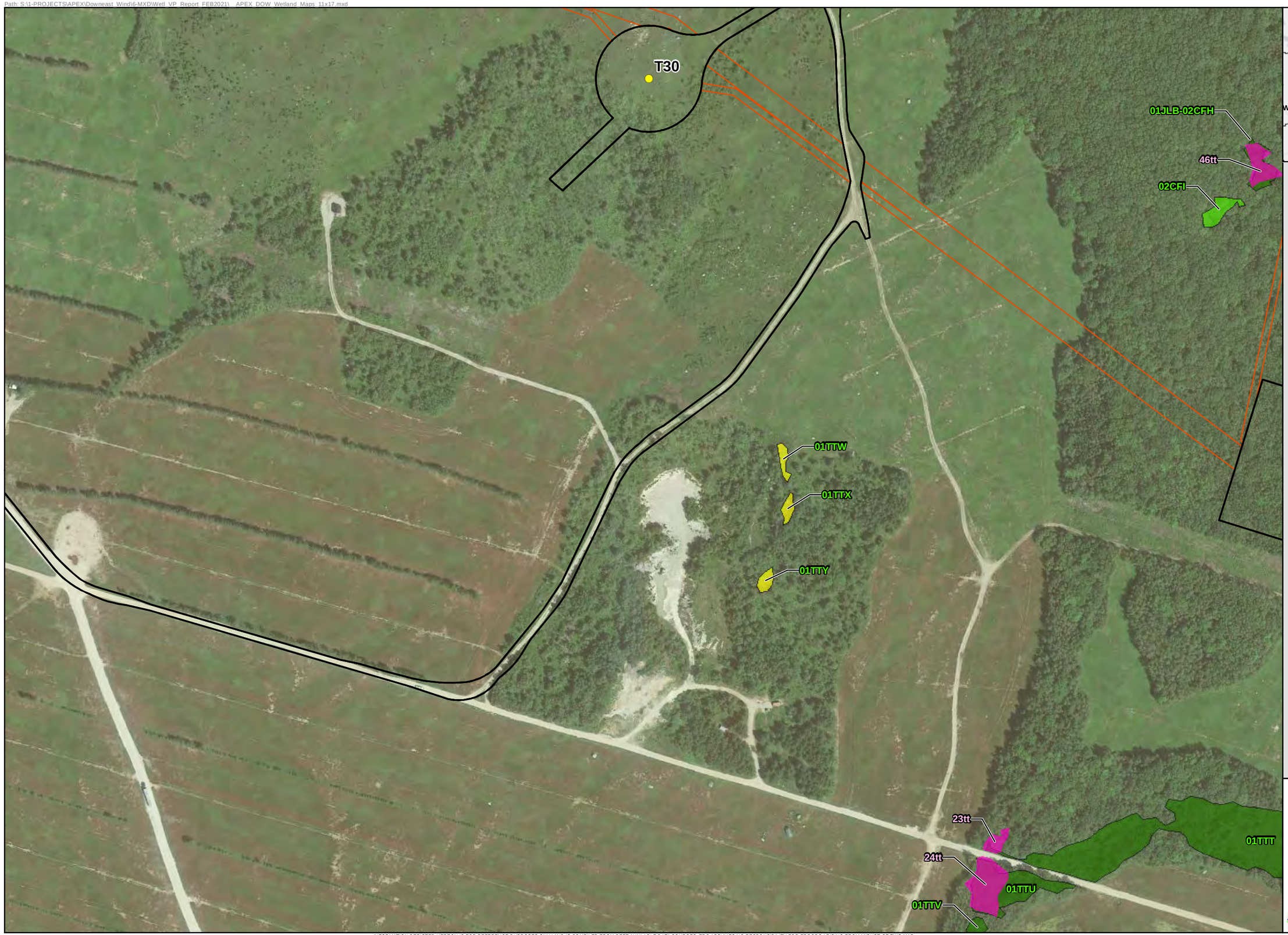
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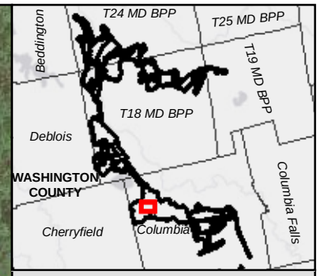
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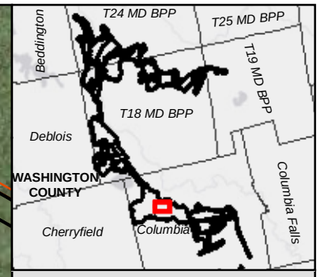
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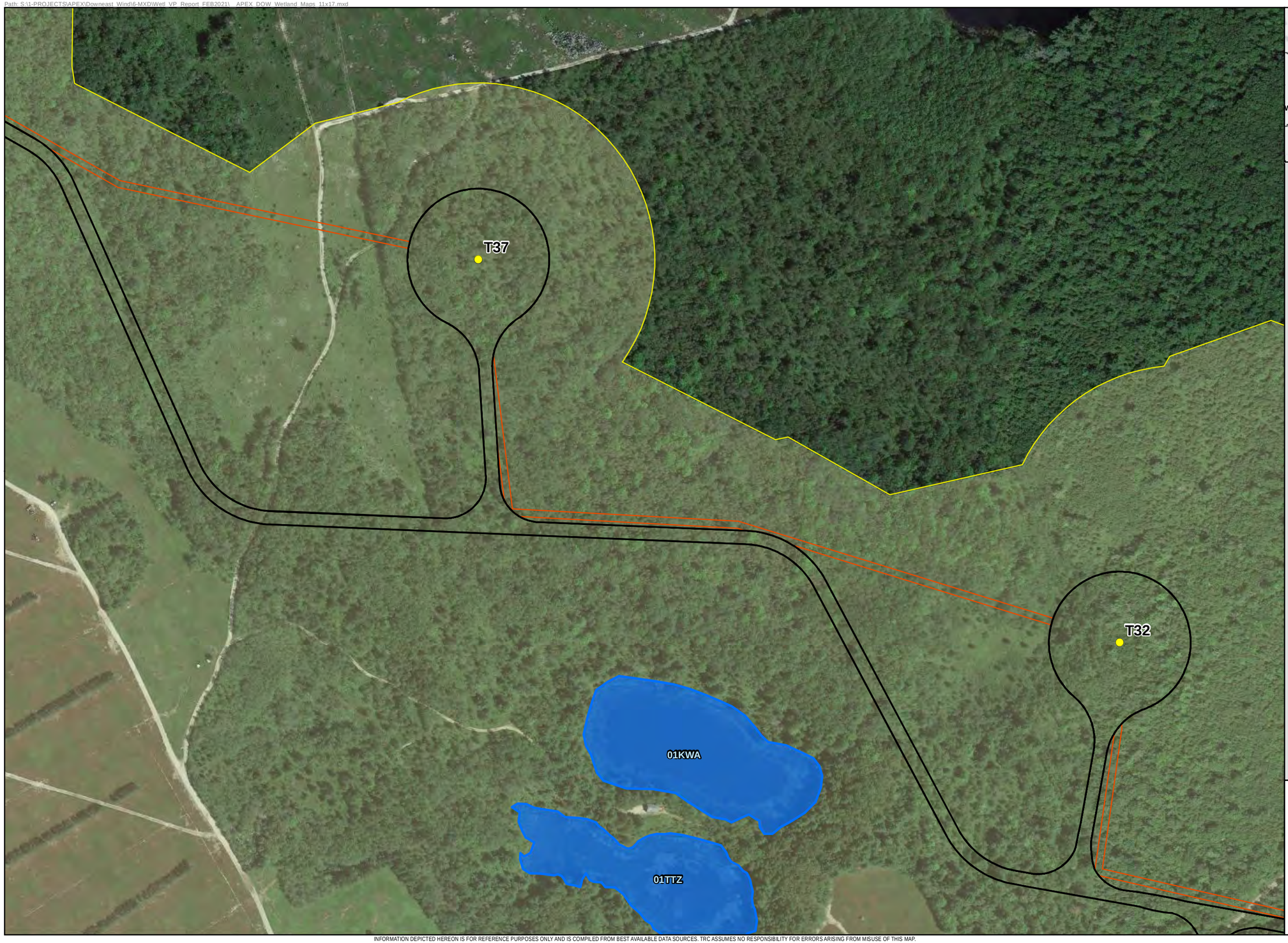
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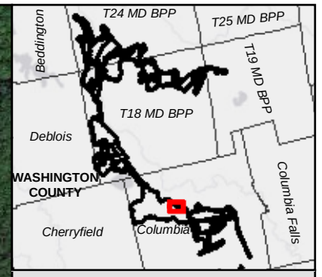
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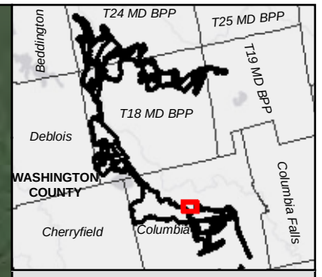
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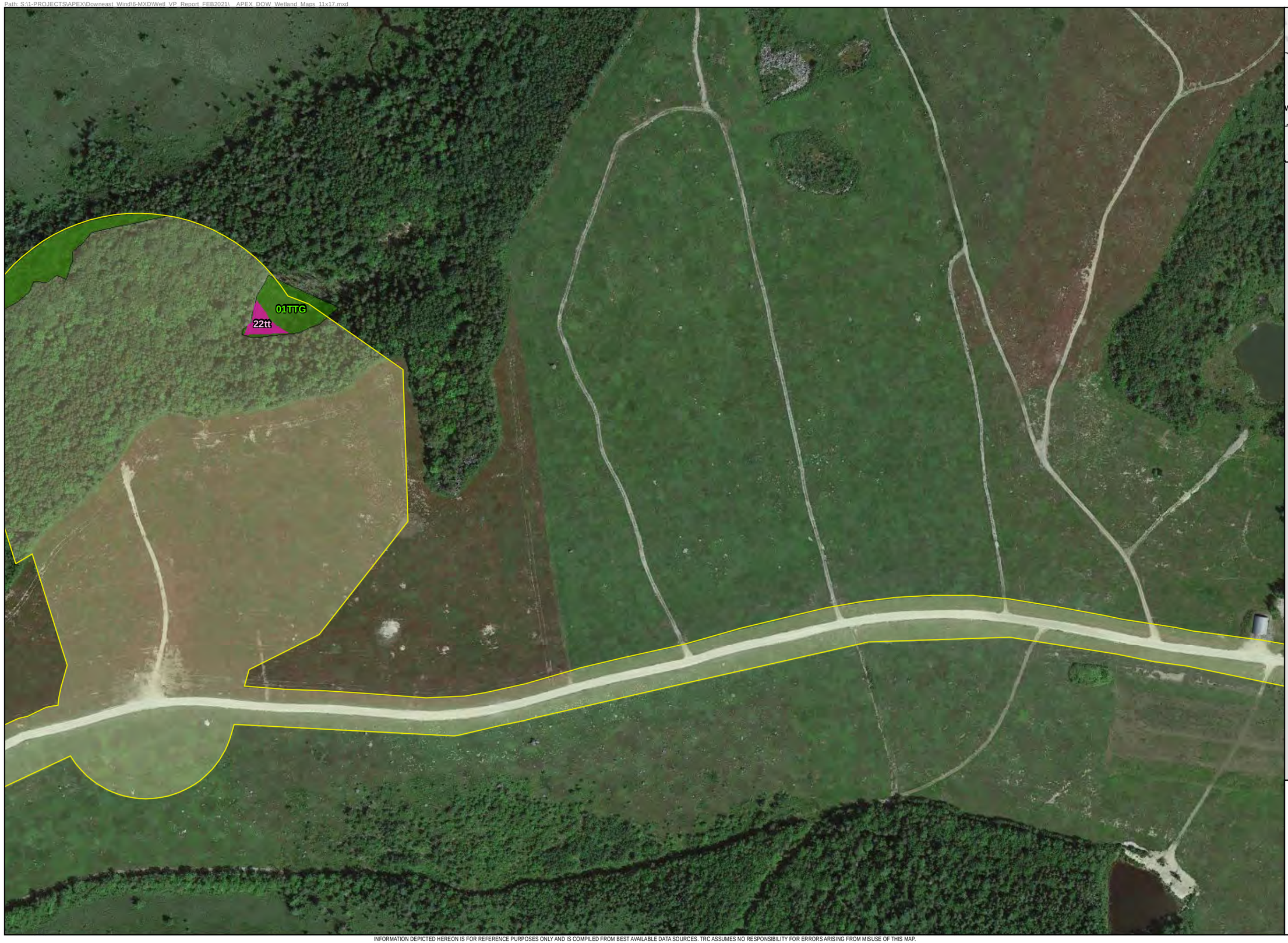
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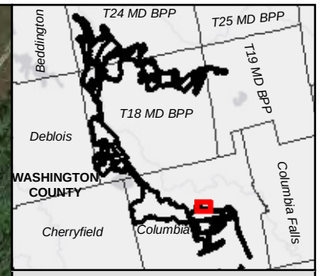
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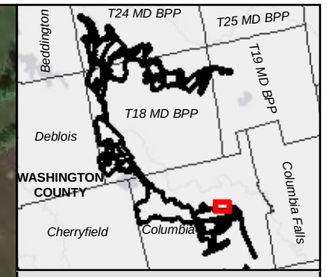
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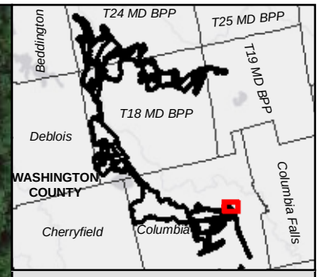
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Wetlands

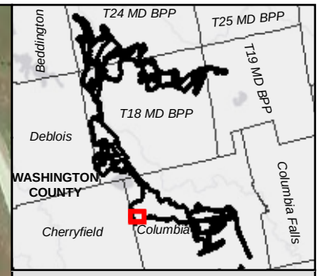
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14 Gabriel Drive
Augusta, ME 04330

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Feet

APEX
Downeast Wind
Washington County, Maine

Wetlands

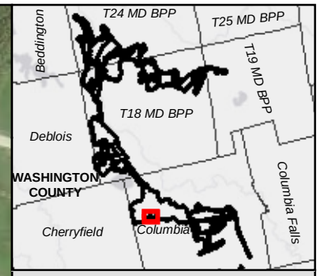
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APEX
Downeast Wind
Washington County, Maine

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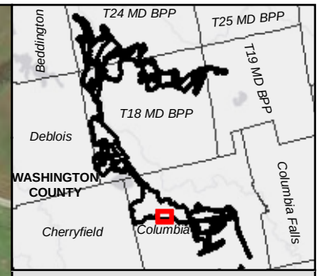
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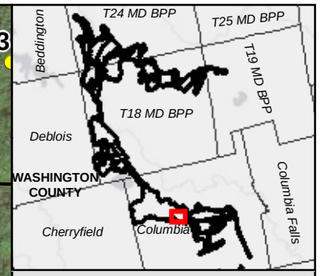
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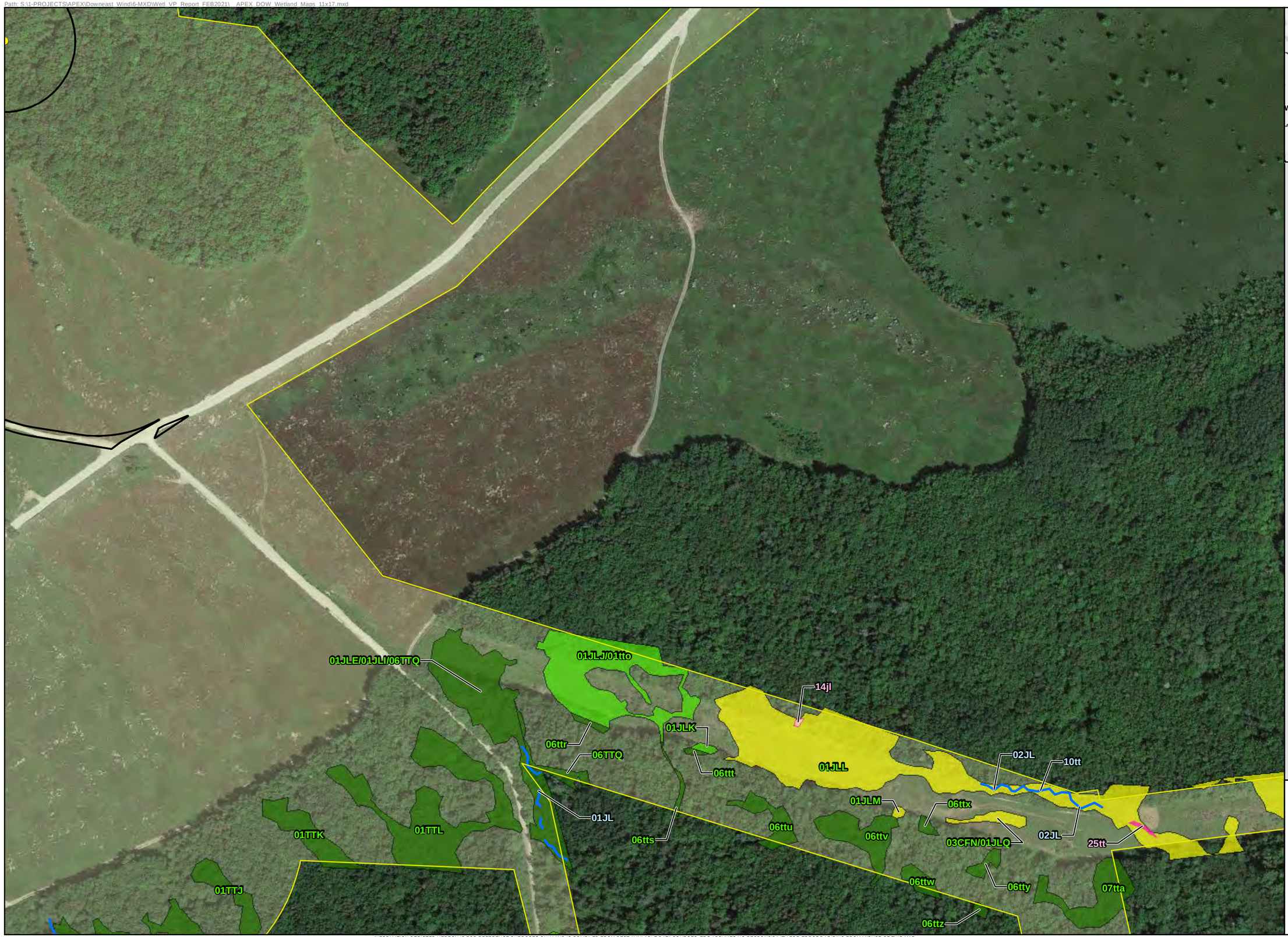
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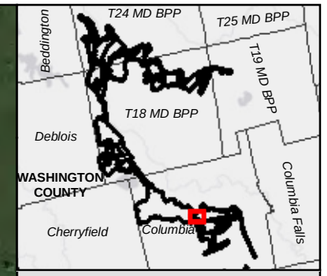
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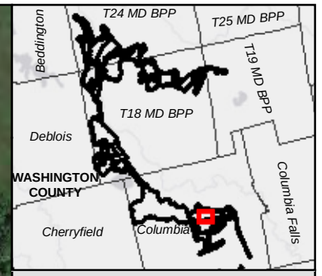
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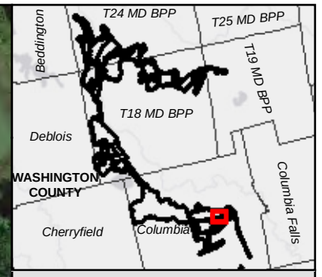
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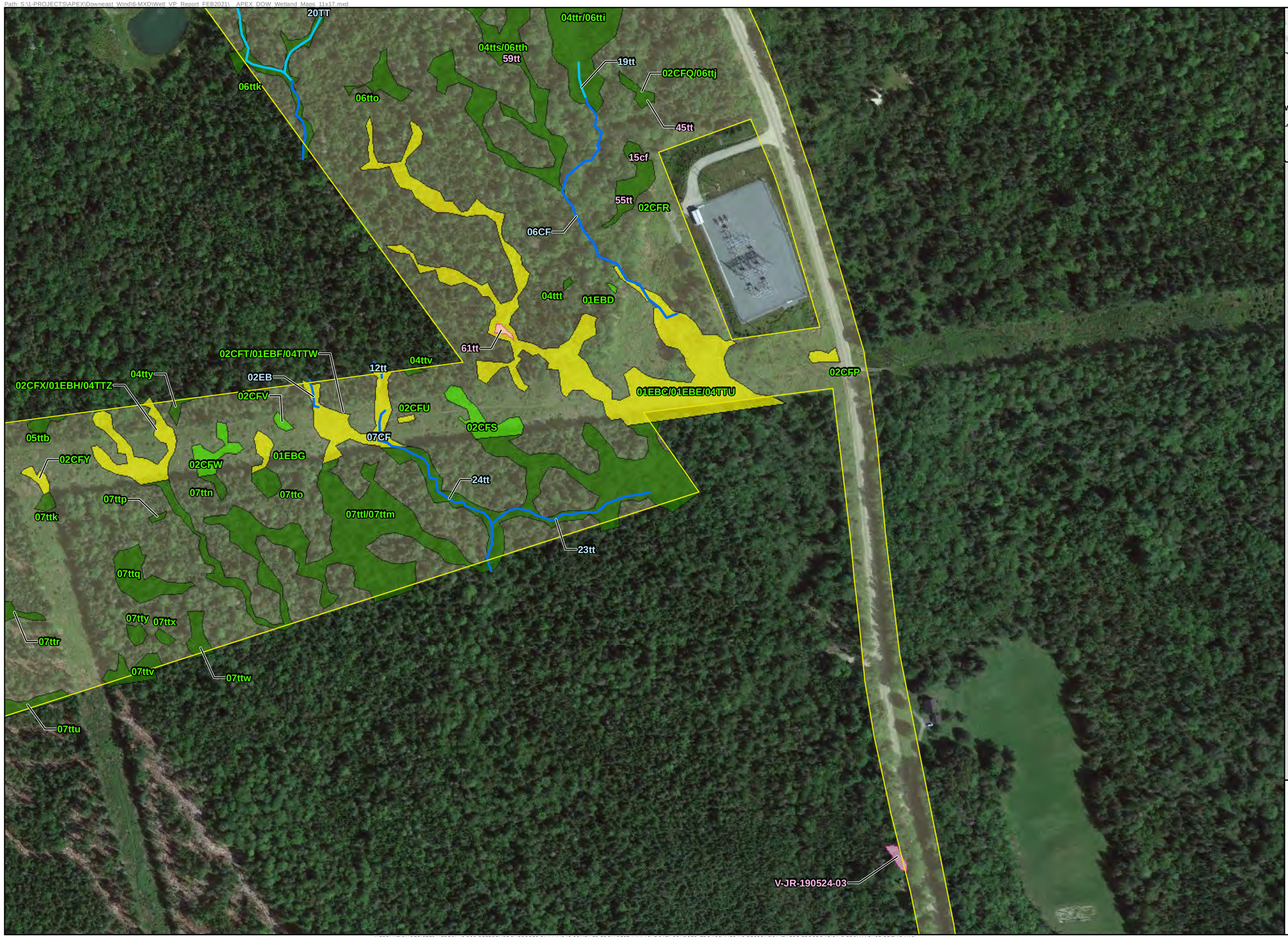
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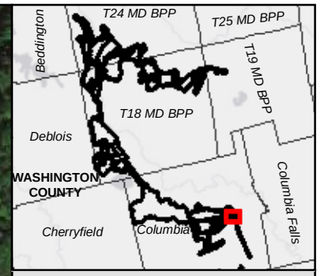
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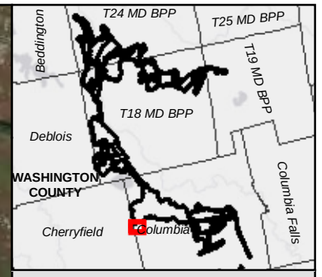
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Washington County, Maine

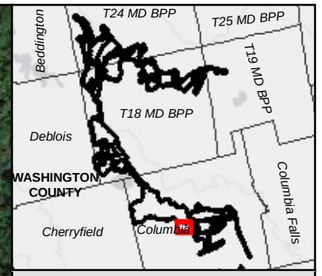
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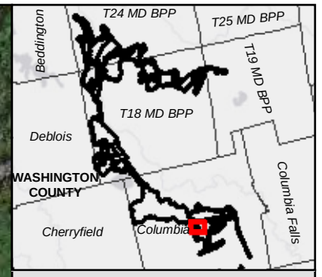
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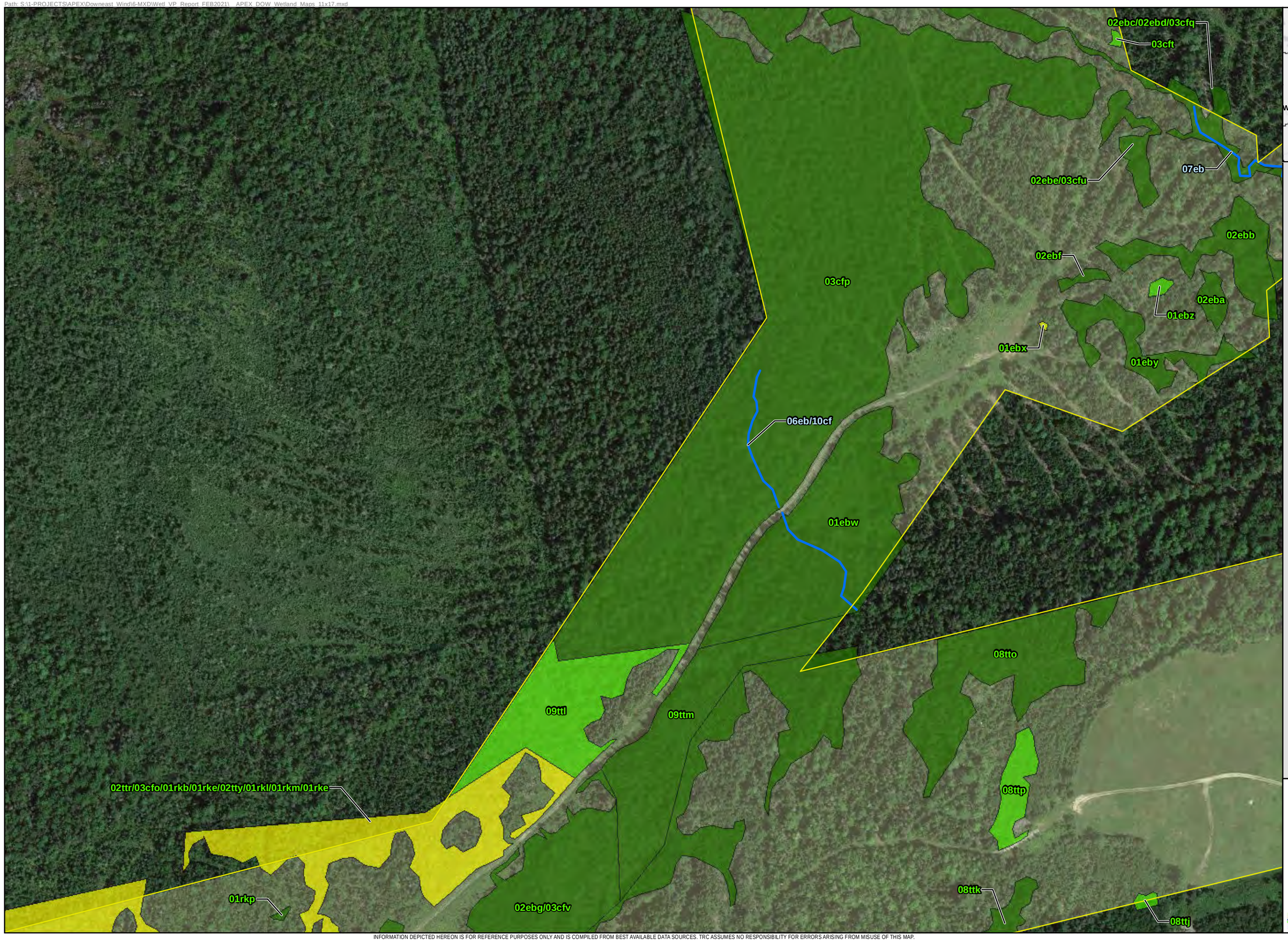
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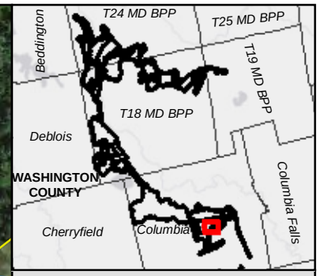
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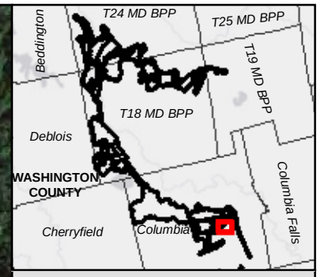
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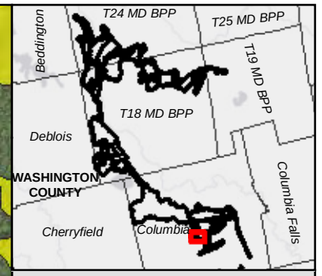
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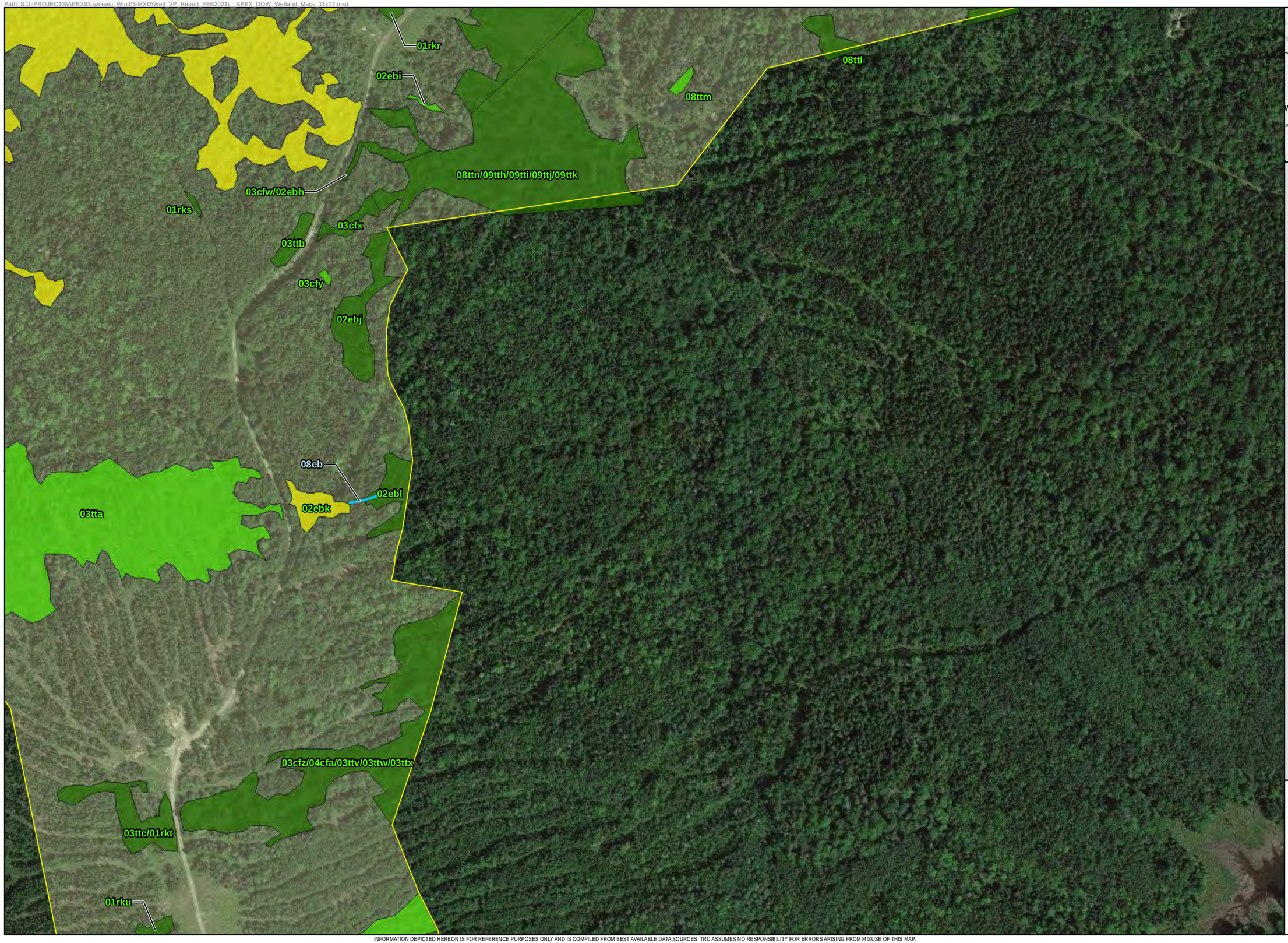
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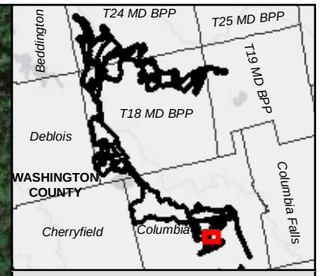
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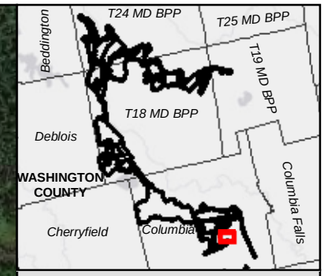
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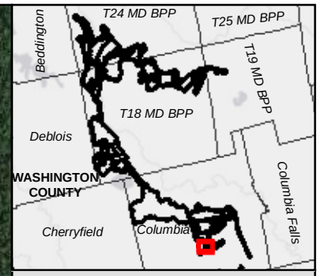
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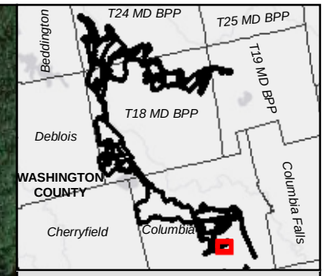
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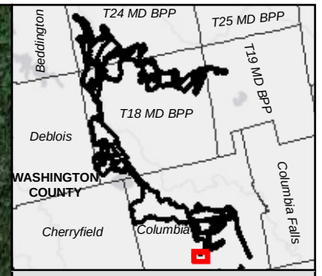
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2/16/2021

Path: S:\1-PROJECTS\APEX\Downeast_Wind\6-MXD\Wetl_VP_Report_FEB2021_APEX_DOW_Wetland_Maps_11x17.mxd





- Survey Area
- Turbine Location
- Facility and Access Way
- Collection Corridor
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Surface Water
- PFO Wetland
- PSS Wetland
- PEM Wetland
- PUB Wetland
- Significant Vernal Pool
- Potential Significant Vernal Pool
- Vernal Pool

N

0 250

Feet

APEX
Downeast Wind

Washington County, Maine

Wetlands

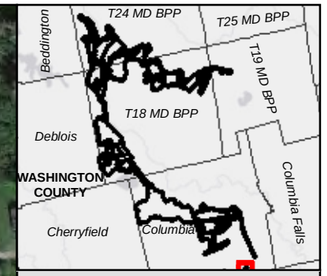
TRC
14 Gabriel Drive
Augusta, ME 04330

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2/16/2021

Path: S:\1-PROJECTS\APEX\Downeast_Wind\6-MXD\Wetl_VP_Report_FEB2021_APEX_DOW_Wetland_Maps_11x17.mxd





- Survey Area
- Turbine Location
- Facility and Access Way
- Collection Corridor
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Surface Water
- PFO Wetland
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N

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Feet

APEX
Downeast Wind

Washington County, Maine

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2/16/2021

ATTACHMENT B

USACE Wetland Determination Completed Field Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-01_PFO-1
Investigator(s): Chuck Ferris, DCB, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.775662 **Long:** -67.794501 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-01

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	6

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-01_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	75	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	55	Yes	FACW
2. *Alnus incana*	5	No	FACW
3. *Abies balsamea*	2	No	FAC
4.			
5.			
6.			
7.			
	62	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus pubescens*	35	Yes	FACW
2. *Osmunda claytoniana*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	87	x 3 =	261
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	182 (A)		451 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-01_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/1	100					Loamy Sand	
3 - 8	10YR 4/1	100					Loamy Sand	
8 - 16	10B 6/1	60	7.5YR 5/6	40	C	M	Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
_✓_ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Milbridge, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-01_UPL-1
Investigator(s): Chuck Ferris, Joseph Rov **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.775808 **Long:** -67.794432 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-01_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Quercus rubra*	30	Yes	FACU
3. *Betula populifolia*	25	Yes	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	20	Yes	FACU
2. *Viburnum nudum*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	2	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	60	x 3 =	180
FACU species	52	x 4 =	208
UPL species	0	x 5 =	0
Column Totals	127	(A)	418 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-01_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 5/6	100					Loamy Sand	
8 - 20	10YR 6/8	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-02_PFO-1
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7832965 **Long:** -67.8729453 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation x, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-02

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-02_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	20	Yes	FACU
2. *Picea rubens*	15	Yes	FACU
3. *Acer rubrum*	15	Yes	FAC
4. *Betula populifolia*	10	No	FAC
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	25	Yes	FACU
2. *Ilex verticillata*	10	Yes	FACW
3. *Alnus incana*	5	No	FACW
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	25	x 3 =	75
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	100	(A)	345 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

_✓_ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (Morphological Adaptations).

SOIL

Sampling Point: W-CWF-02_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Boulders

Depth (inches): 8

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-02_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7834352 **Long:** -67.8732604 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-02_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Quercus rubra*	15	No	FACU
3. *Betula papyrifera*	10	No	FACU
4. *Abies balsamea*	10	No	FAC
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	10	Yes	FACU
2. *Viburnum nudum*	10	Yes	FACW
3. *Quercus rubra*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	30	Yes	FACU
2. *Aralia nudicaulis*	5	No	FACU
3. *Cornus canadensis*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	60	x 3 =	180
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals	145	(A)	500 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-02_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Loam	
1 - 3	10YR 6/2	100					Sandy Loam	
3 - 8	7.5YR 5/8	100					Sandy Loam	
8 - 12	10YR 5/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-03_PFO-1
Investigator(s): Chuck Ferris, Joesph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7835337 **Long:** -67.8740322 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-03_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Betula alleghaniensis*	15	Yes	FAC
3. *Tsuga canadensis*	10	No	FACU
4.			
5.			
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	25	Yes	FACW
2. *Alnus incana*	5	No	FACW
3. *Tsuga canadensis*	5	No	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmunda spectabilis*	35	Yes	OBL
2. *Osmundastrum cinnamomeum*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	35	x 1 =	35
FACW species	45	x 2 =	90
FAC species	55	x 3 =	165
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	150 (A)		350 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-03_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 2/2	100	7.5YR 5/6	5	C	M	Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Boulder

Depth (inches): 20

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-03_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7834376 **Long:** -67.8741072 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-03_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	25	Yes	FACU
2. *Populus grandidentata*	15	Yes	FACU
3. *Fagus grandifolia*	15	Yes	FACU
4. *Betula papyrifera*	10	No	FACU
5. *Pinus strobus*	10	No	FACU
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	15	Yes	FACU
2. *Quercus rubra*	10	Yes	FACU
3. *Acer pensylvanicum*	5	No	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	25	Yes	FACU
2. *Cornus canadensis*	10	Yes	FAC
3. *Aralia nudicaulis*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	14.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	145	(A)	570 (B)
Prevalence Index = B/A =	3.9		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-03_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Silt Loam	
1 - 6	10YR 6/1	100					Silt Loam	
6 - 12	7.5YR 5/8	95					Sandy Loam	
12 - 20	7.5YR 6/4	95					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-04_PFO-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7844224 **Long:** -67.8774047 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-04

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-04_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Betula alleghaniensis*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer pensylvanicum*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	75	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	50	x 3 =	150
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	130	(A)	320 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-04_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Boulder

Depth (inches): 10

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-04_UPL-2
Investigator(s): Chuck Ferris. Joseph Rov **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7845667 **Long:** -67.8767184 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-04_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	35	Yes	FACU
2. *Acer saccharum*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer pensylvanicum*	20	Yes	FACU
2. *Pinus strobus*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	45	Yes	FACU
2. *Aralia nudicaulis*	5	No	FACU
3. *Pyrola americana*	2	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	52	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	2	x 3 =	6
FACU species	140	x 4 =	560
UPL species	0	x 5 =	0
Column Totals	142	(A)	566 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-04_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Loam	
1 - 2	10YR 6/1	100					Loam	
2 - 20	10YR 6/8	95					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-05_PFO-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.783586 **Long:** -67.8764095 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-05

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-05_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Betula alleghaniensis*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	2	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	2	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	25	Yes	FACW
2. *Rubus pubescens*	2	No	FACW
3. *Lycopus americanus*	2	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	29	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	2	x 1 =	2
FACW species	27	x 2 =	54
FAC species	60	x 3 =	180
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals	91	(A)	244 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-05_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Silt Loam	
8 - 16	10YR 5/2	100	7.5YR 5/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-05_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7835928 **Long:** -67.8765363 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-05_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	45	Yes	FACU
2. *Betula papyrifera*	25	Yes	FACU
3. *Acer saccharum*	15	No	FACU
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	25	Yes	FACU
2. *Pteridium aquilinum*	15	Yes	FACU
3. *Vaccinium angustifolium*	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **6** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	150	x 4 =	600
UPL species	0	x 5 =	0
Column Totals	150	(A)	600 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-05_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Loam	
1 - 3	10YR 6/2	100					Loam	
3 - 20	7.5YR 5/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-07_PFO-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7827537 **Long:** -67.8746969 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-07

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-07_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Betula alleghaniensis*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	35	Yes	FACU
2. *Hamamelis virginiana*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	45	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	45	x 3 =	135
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	135	(A)	405 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-07_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	
6 - 16	10YR 5/2	95	7.5YR 5/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 16

Hydric Soil Present? Yes ✓ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-07_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7824119 **Long:** -67.8744466 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-07_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	45	Yes	FACU
2. *Tsuga canadensis*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	45	Yes	FACU
2. *Quercus rubra*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	2	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	117	x 4 =	468
UPL species	0	x 5 =	0
Column Totals	117	(A)	468 (B)
Prevalence Index = B/A =	4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-07_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 2	10YR 6/2	100					Silt Loam	
2 - 20	10YR 4/4	80					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-08_PFO-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7864906 **Long:** -67.8815552 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-08

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-08_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	25	Yes	FAC
2. *Betula alleghaniensis*	20	Yes	FAC
3. *Abies balsamea*	20	Yes	FAC
4. *Fraxinus pennsylvanica*	15	No	FACW
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	40	Yes	FACW
2. *Rubus pubescens*	15	Yes	FACW
3. *Onoclea sensibilis*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	75	x 3 =	225
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	150 (A)		375 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-08_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/2	100					Mucky Peat	
8 - 14	10YR 5/2	100	7.5YR 5/6	7	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 14

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-08_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7862441 **Long:** -67.8815911 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-08_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	25	Yes	FAC
2. *Acer rubrum*	25	Yes	FAC
3. *Picea rubens*	10	No	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer pensylvanicum*	8	Yes	FACU
2. *Abies balsamea*	3	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	11	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Abies balsamea*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	73	x 3 =	219
FACU species	18	x 4 =	72
UPL species	0	x 5 =	0
Column Totals	91	(A)	291 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-08_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 4	10YR 6/2	100					Loam	
4 - 16	See Remarks	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

Layer missing soil color.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-CWF-09_PFO-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7872335 **Long:** -67.8832204 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-09

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ✓ No ____	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-09_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	45	Yes	FACU
2. *Betula alleghaniensis*	10	No	FAC
3. *Abies balsamea*	10	No	FAC
4.			
5.			
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	25	Yes	FACU
2. *Acer rubrum*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	35	Yes	FACW
2. *Athyrium angustum*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	45	x 3 =	135
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	150	(A)	485 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

_✓_ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (Morphological Adaptations).

SOIL

Sampling Point: W-CWF-09_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	
6 - 16	10YR 6/1	100	7.5YR 5/6	5	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-CWF-09_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.787051 **Long:** -67.8832281 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-09_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	35	Yes	FACU
2. *Picea rubens*	25	Yes	FACU
3. *Quercus rubra*	20	Yes	FACU
4. *Acer rubrum*	15	No	FAC
5.			
6.			
7.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	10	Yes	FACU
2. *Acer pensylvanicum*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pyrola americana*	5	Yes	FAC
2. *Acer pensylvanicum*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	120	(A)	460 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-09_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 4	10YR 6/2	100					Sandy Loam	
4 - 8	7.5YR 4/4	100					Loamy Sand	
8 - 14	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Boulder
Depth (inches): 14

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-10_PFO-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7943261 **Long:** -67.8818361 **Datum:** WGS84
Soil Map Unit Name: Wonsqueak and Bucksport mucks, 0 to 2 percent slopes, frequently flooded **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-10

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-10_PFO-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	45	Yes	FACU
2. *Thuja occidentalis*	15	Yes	FACW
3. *Acer rubrum*	15	Yes	FAC
4.			
5.			
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Thuja occidentalis*	35	Yes	FACW
2. *Viburnum nudum*	5	No	FACW
3. *Nemopanthus mucronatus*	5	No	OBL
4.			
5.			
6.			
7.			
	45	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	25	Yes	FAC
2. *Carex trisperma*	25	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	83.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	30	x 1 =	30
FACW species	55	x 2 =	110
FAC species	40	x 3 =	120
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	170	(A)	440 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-10_PFO-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 2/2	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-10_PSS-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7942853 **Long:** -67.8818499 **Datum:** WGS84
Soil Map Unit Name: Wonsqueak and Bucksport mucks, 0 to 2 percent slopes, frequently flooded **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-10

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	4
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-10_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja occidentalis*	15	Yes	FACW
2. *Picea rubens*	7	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	22	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	45	Yes	FACW
2. *Nemopanthus mucronatus*	5	No	OBL
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	75	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	80	x 1 =	80
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals	147	(A)	228 (B)

Prevalence Index = B/A = 1.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-10_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 2/2	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** M E **Sampling Point:** W-CWF-10_UPL-3
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7942281 **Long:** -67.8815515 **Datum:** WGS84
Soil Map Unit Name: Wonsqueak and Bucksport mucks, 0 to 2 percent slopes, frequently flooded **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-10_UPL-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja occidentalis*	20	Yes	FACW
2. *Picea rubens*	15	Yes	FACU
3. *Populus tremuloides*	5	No	FACU
4.			
5.			
6.			
7.			
	40	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Populus tremuloides*	25	Yes	FACU
2. *Abies balsamea*	5	No	FAC
3. *Pinus resinosa*	5	No	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	70	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	5	x 3 =	15
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals	145	(A)	535 (B)
Prevalence Index = B/A =	3.7		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-10_UPL-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 2	10YR 6/2	100					Sandy Loam	
2 - 6	7.5YR 4/6	95					Loamy Sand	
6 - 16	10YR 5/8	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-11_PFO-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7945957 **Long:** -67.879747 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-11

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-11_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja occidentalis*	30	Yes	FACW
2. *Picea rubens*	25	Yes	FACU
3. *Acer rubrum*	15	Yes	FAC
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Thuja occidentalis*	10	Yes	FACW
2. *Alnus incana*	10	Yes	FACW
3. *Abies balsamea*	5	Yes	FAC
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	85	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	135	x 2 =	270
FAC species	20	x 3 =	60
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	180	(A)	430 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-11_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-CWF-11_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7946564 **Long:** -67.8797215 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-11_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	45	Yes	FACU
2. *Pinus strobus*	20	Yes	FACU
3. *Betula papyrifera*	10	No	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Thuja occidentalis*	15	Yes	FACW
2. *Tsuga canadensis*	3	No	FACU
3.			
4.			
5.			
6.			
7.			
	18	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	65	Yes	FACU
2. *Thuja occidentalis*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	143	x 4 =	572
UPL species	0	x 5 =	0
Column Totals	163	(A)	612 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-11_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Silt Loam	
1 - 2	10YR 6/2	100					Sandy Loam	
2 - 8	10YR 5/8	85					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-12_PSS-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7947894 **Long:** -67.8799214 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-12

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-12_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja occidentalis*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	70	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	40	Yes	OBL
2. *Carex crinita*	15	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	55	x 1 =	55
FACW species	75	x 2 =	150
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	130	(A)	205 (B)

Prevalence Index = B/A = 1.6

Hydrophytic Vegetation Indicators:

- ✓ 1- Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-12_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Loamy Sand	
6 - 14	10YR 4/1	100	7.5YR 5/6	5	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** M E **Sampling Point:** W-CWF-12_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7949357 **Long:** -67.8799006 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-12_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	35	Yes	FACU
2. *Populus grandidentata*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	10	Yes	FAC
2. *Thuja occidentalis*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	25	Yes	FAC
2. *Vaccinium angustifolium*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	35	x 3 =	105
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	110	(A)	395 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-12_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 4	10YR 6/2	95					Sandy Loam	
4 - 20	10YR 6/8	90					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-13_PFO-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7953436 **Long:** -67.8792207 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-13

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-13_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja occidentalis*	65	Yes	FACW
2. *Picea rubens*	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Oxalis corniculata*	35	Yes	FACU
2. *Abies balsamea*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	15	x 3 =	45
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	140	(A)	415 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-13_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 30	10YR 2/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 30

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-13_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7951403 **Long:** -67.8791827 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-13_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus grandidentata*	45	Yes	FACU
2. *Thuja occidentalis*	20	Yes	FACW
3. *Betula papyrifera*	10	No	FACU
4. *Acer saccharum*	10	No	FACU
5.			
6.			
7.			
	85	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Thuja occidentalis*	15	Yes	FACW
2. *Abies balsamea*	15	Yes	FAC
3. *Acer saccharum*	3	No	FACU
4.			
5.			
6.			
7.			
	33	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Aralia nudicaulis*	25	Yes	FACU
2. *Abies balsamea*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	30	x 3 =	90
FACU species	93	x 4 =	372
UPL species	0	x 5 =	0
Column Totals	158	(A)	532 (B)
Prevalence Index = B/A =	3.4		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-13_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Loam	
1 - 3	10YR 6/2	100					Loamy Sand	
3 - 20	10YR 5/8	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-14_PFO-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.795247 **Long:** -67.874814 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-14

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ✓ No ____	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-14_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3. *Betula alleghaniensis*	5	No	FAC
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	25	Yes	FAC
2. *Hamamelis virginiana*	8	No	FACU
3. *Tsuga canadensis*	8	No	FACU
4. *Pinus strobus*	3	No	FACU
5.			
6.			
7.			
	44	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	50	Yes	FACW
2. *Athyrium angustum*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	70	x 3 =	210
FACU species	19	x 4 =	76
UPL species	0	x 5 =	0
Column Totals	149	(A)	406 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-14_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Mucky Peat	
4 - 16	10YR 6/1	100	7.5YR 5/6	10	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
✓ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-14_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7954256 **Long:** -67.8748252 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-14_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	65	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	35	Yes	FAC
2. *Alnus incana*	35	Yes	FACW
3. *Quercus rubra*	20	Yes	FACU
4.			
5.			
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Dennstaedtia punctilobula*	15	Yes	UPL
2. *Aralia nudicaulis*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	65	x 3 =	195
FACU species	90	x 4 =	360
UPL species	15	x 5 =	75
Column Totals	205	(A)	700 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-14_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Loam	
3 - 16	10YR 5/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-15_PEM-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7940684 **Long:** -67.8724919 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-15

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
✓ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
✓ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-15_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Salix bebbiana*	10	Yes	FACW
2. *Rhododendron canadense*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	85	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	85	x 1 =	85
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	105	(A)	125 (B)

Prevalence Index = B/A = 1.2

Hydrophytic Vegetation Indicators:

- ✓ 1- Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-15_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Mucky Peat	
4 - 10	10YR 4/2	100	7.5YR 5/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-15_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7940677 **Long:** -67.87249 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-15_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	35	Yes	FACU
2. *Betula populifolia*	25	Yes	FAC
3. *Fagus grandifolia*	25	Yes	FACU
4. *Rubus allegheniensis*	10	No	FACU
5.			
6.			
7.			
	95	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Comptonia peregrina*	40	Yes	UPL
2. *Gaultheria procumbens*	35	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	20	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	105	x 4 =	420
UPL species	40	x 5 =	200
Column Totals	170	(A)	695 (B)
Prevalence Index = B/A =	4.1		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-15_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Loam	
3 - 16	10YR 6/8	85					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-16_PFO-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7925133 **Long:** -67.873213 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-16

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	2
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-16_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Betula populifolia*	20	Yes	FAC
3. *Pinus strobus*	10	No	FACU
4. *Thuja occidentalis*	10	No	FACW
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	20	Yes	FAC
2. *Betula populifolia*	15	Yes	FAC
3. *Betula alleghaniensis*	15	Yes	FAC
4. *Abies balsamea*	10	No	FAC
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Glyceria striata*	35	Yes	OBL
2. *Onoclea sensibilis*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	35	x 1 =	35
FACW species	35	x 2 =	70
FAC species	115	x 3 =	345
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	195 (A)		490 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-16_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Loam	
4 - 16	10YR 5/1	90	7.5YR 5/6	10	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-16_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7925332 **Long:** -67.8733723 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-16_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Picea rubens*	25	Yes	FACU
3. *Pinus resinosa*	10	No	FACU
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	25	Yes	FAC
2. *Acer pensylvanicum*	25	Yes	FACU
3. *Abies balsamea*	15	Yes	FAC
4.			
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	15	Yes	FACU
2. *Vaccinium angustifolium*	15	Yes	FACU
3. *Aralia nudicaulis*	10	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	170	(A)	610 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-16_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Loam	
1 - 4	10YR 6/2	100					Sandy Loam	
4 - 8	5YR 4/4	100					Sandy Loam	
8 - 16	10YR 5/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-17_PFO-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7925792 **Long:** -67.8735622 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-17

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	6
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-17_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3. *Abies balsamea*	10	Yes	FAC
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Populus tremuloides*	15	Yes	FACU
2. *Abies balsamea*	10	Yes	FAC
3. *Alnus incana*	3	No	FACW
4. *Rhododendron canadense*	2	No	FACW
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	35	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	35	x 1 =	35
FACW species	15	x 2 =	30
FAC species	40	x 3 =	120
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	105	(A)	245 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-17_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/1	100					Mucky Peat	
10 - 20	10YR 5/1	100	7.5YR 5/6	5	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_ _ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-17_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7924616 **Long:** -67.8730263 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-17_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus grandidentata*	50	Yes	FACU
2. *Abies balsamea*	25	Yes	FAC
3. *Acer saccharum*	5	No	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	40	Yes	FAC
2. *Acer pensylvanicum*	15	Yes	FACU
3. *Viburnum lantanoides*	5	No	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals	140	(A)	495 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-17_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 3	10YR 6/2	100					Sandy Loam	
3 - 16	7.5YR 5/8	85					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-18_PFO-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7925685 **Long:** -67.8730284 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-18

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-18_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Abies balsamea*	25	Yes	FAC
3. *Picea rubens*	20	Yes	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	10	Yes	FAC
2. *Acer pensylvanicum*	10	Yes	FACU
3. *Betula alleghaniensis*	5	Yes	FAC
4.			
5.			
6.			
7.			
	25	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	45	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	115	x 3 =	345
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	145	(A)	465 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-18_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	
6 - 16	10YR 6/2	80	7.5YR 5/6	20	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-18_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7921313 **Long:** -67.873574 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-18_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	65	Yes	FACU
2. *Acer saccharum*	20	Yes	FACU
3. *Abies balsamea*	15	No	FAC
4.			
5.			
6.			
7.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	15	Yes	FACU
2. *Acer saccharum*	15	Yes	FACU
3. *Acer pensylvanicum*	15	Yes	FACU
4. *Populus grandidentata*	10	No	FACU
5.			
6.			
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	75	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	215	x 4 =	860
UPL species	0	x 5 =	0
Column Totals	230	(A)	905 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-18_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 3	10YR 6/2	100					Sandy Loam	
3 - 8	10YR 5/6	100					Sandy Loam	
8 - 16	10YR 6/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-19_PUB-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7922603 **Long:** -67.8730235 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-19

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PUB.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	36
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-19_PUB-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Potamogeton natans*	10	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	10	(A)	10 (B)
Prevalence Index = B/A =	1		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-19_PUB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 16	5GY 6/1	100					Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
_✓_ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-19_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.791419 **Long:** -67.8732647 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-19_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	45	Yes	FAC
2. *Pinus strobus*	20	Yes	FACU
3. *Pinus resinosa*	5	No	FACU
4. *Picea rubens*	5	No	FACU
5.			
6.			
7.			
	75	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	25	Yes	FACU
2. *Comptonia peregrina*	10	Yes	UPL
3. *Kalmia angustifolia*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	55	x 4 =	220
UPL species	10	x 5 =	50
Column Totals	125	(A)	450 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-19_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-20_PEM-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7910985 **Long:** -67.8733421 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-20

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-20_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Spiraea tomentosa*	3	No	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	3	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Dulichium arundinaceum*	35	Yes	OBL
2. *Eriophorum virginicum*	25	Yes	OBL
3. *Juncus canadensis*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	70	x 1 =	70
FACW species	3	x 2 =	6
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	73	(A)	76 (B)
Prevalence Index = B/A =	1		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-20_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/2	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-20_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7910305 **Long:** -67.873382 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-20_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	40	Yes	FACU
2. *Abies balsamea*	35	Yes	FAC
3. *Betula papyrifera*	10	No	FACU
4. *Betula alleghaniensis*	5	No	FAC
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	15	Yes	FACU
2. *Abies balsamea*	10	Yes	FAC
3. *Acer pensylvanicum*	5	No	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	10	Yes	FAC
2. *Cornus canadensis*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	135	(A)	475 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-20_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 3	10YR 6/2	100					Sandy Loam	
3 - 16	10YR 5/8	90					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-21_PFO-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7912513 **Long:** -67.8737199 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-21

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	3	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-21_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	25	Yes	FAC
2. *Acer rubrum*	15	Yes	FAC
3. *Picea rubens*	5	No	FACU
4.			
5.			
6.			
7.			
	45	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	25	Yes	FACW
2. *Picea rubens*	20	Yes	FACU
3. *Ilex verticillata*	20	Yes	FACW
4. *Betula populifolia*	5	No	FAC
5.			
6.			
7.			
	70	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Lycopus americanus*	65	Yes	OBL
2. *Carex trisperma*	15	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	83.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	80	x 1 =	80
FACW species	45	x 2 =	90
FAC species	45	x 3 =	135
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	195	(A)	405 (B)
Prevalence Index = B/A =	2.1		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-21_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/2	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-21_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7912612 **Long:** -67.8736604 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-21_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	30	Yes	FACU
2. *Acer saccharum*	25	Yes	FACU
3. *Picea rubens*	25	Yes	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	35	Yes	FACU
2. *Abies balsamea*	15	Yes	FAC
3. *Hamamelis virginiana*	5	No	FACU
4. *Acer pensylvanicum*	3	No	FACU
5.			
6.			
7.			
	58	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	3	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	126	x 4 =	504
UPL species	0	x 5 =	0
Column Totals	141	(A)	549 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-21_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 7	10YR 6/2	100					Sandy Loam	
7 - 16	7.5YR 5/8	90					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 16

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-22_PEM-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7899477 **Long:** -67.87345 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-22

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ✓ No ____	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-22_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus microcarpus*	65	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	65	x 1 =	65
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	70	(A)	75 (B)
Prevalence Index = B/A =	1.1		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-22_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	
6 - 12	10YR 3/1	90	7.5YR 5/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-22_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7898716 **Long:** -67.8735047 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-22_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	35	Yes	FACU
2. *Acer saccharum*	20	Yes	FACU
3. *Picea rubens*	20	Yes	FACU
4. *Quercus rubra*	10	No	FACU
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	10	Yes	FACU
2. *Cornus canadensis*	5	Yes	FAC
3. *Aralia nudicaulis*	3	No	FACU
4. *Gaultheria procumbens*	3	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	21	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **6** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **16.7** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	106	x 4 =	424
UPL species	0	x 5 =	0
Column Totals	111 (A)		439 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-22_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 4	10YR 6/2	100					Sandy Loam	
4 - 8	10YR 4/6	90					Sandy Loam	
8 - 16	10YR 5/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-23_PEM-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Channel **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7898139 **Long:** -67.8735153 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-23

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-23_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	25	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	25	(A)	50 (B)
Prevalence Index = B/A =	2		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-23_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 4/2	85					Sand	sediment from road over wetland soul
5 - 10	10YR 2/1	100					Muck	
10 - 20	10YR 5/1	100	7.5YR 5/6	5	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-23_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7898993 **Long:** -67.8738316 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-23_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus grandidentata*	65	Yes	FACU
2. *Acer saccharum*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Populus grandidentata*	45	Yes	FACU
2. *Hamamelis virginiana*	35	Yes	FACU
3. *Quercus rubra*	10	No	FACU
4.			
5.			
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Maianthemum canadense*	3	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **4** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	178	x 4 =	712
UPL species	0	x 5 =	0
Column Totals	178	(A)	712 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-23_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Loam	
3 - 4	10YR 6/2	100					Sandy Loam	
4 - 8	5YR 4/4	100					Sandy Loam	
8 - 20	7.5YR 5/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-24_PFO-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7871184 **Long:** -67.8740758 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-24

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. PUB portion of wetland excaved.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	36
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-24_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	5	Yes	FACW
2. *Ilex verticillata*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	30	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	30	x 1 =	30
FACW species	10	x 2 =	20
FAC species	35	x 3 =	105
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	75	(A)	155 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-24_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 2/2	100					Loam	
5 - 16	10YR 4/2	90	7.5YR 5/6	10	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-24_UPL-2
Investigator(s): Chuck Ferris, Joe Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7870537 **Long:** -67.8741424 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-24_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	35	Yes	FACU
2. *Populus grandidentata*	10	No	FACU
3. *Betula papyrifera*	10	No	FACU
4.			
5.			
6.			
7.			
	55	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	65	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	95	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Maianthemum canadense*	25	Yes	FACU
2. *Cornus canadensis*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	145	x 4 =	580
UPL species	0	x 5 =	0
Column Totals	180	(A)	685 (B)
Prevalence Index = B/A =	3.8		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-24_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1 - 2	10YR 2/2	100					Loam	
2 - 3	10YR 6/2	100					Sandy Loam	
3 - 16	10YR 5/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-25_PEM-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7858767 **Long:** -67.8735765 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-25

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	4
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-25_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Myrica gale*	5	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	25	Yes	OBL
2. *Juncus effusus*	2	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	27	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	32	x 1 =	32
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	32	(A)	32 (B)
Prevalence Index = B/A =	1		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-25_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 6/1	98	10YR 4/4	2	D	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-25_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7864024 **Long:** -67.8734104 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-25_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	30	Yes	FAC
2. *Quercus rubra*	20	Yes	FACU
3. *Viburnum nudum*	15	No	FACW
4. *Acer rubrum*	15	No	FAC
5. *Pinus strobus*	8	No	FACU
6.			
7.			
	88	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	20	Yes	FAC
2. *Pteridium aquilinum*	15	Yes	FACU
3. *Vaccinium angustifolium*	10	Yes	FACU
4. *Aralia nudicaulis*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	65	x 3 =	195
FACU species	63	x 4 =	252
UPL species	0	x 5 =	0
Column Totals	143	(A)	477 (B)
Prevalence Index = B/A =	3.3		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-25_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 6	10YR 5/6	100					Sandy Loam	
6 - 20	10YR 6/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** **Sampling Point:** W-CWF-26_PFO-1
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.792518 **Long:** -67.8693336 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-26

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	8	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-26_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	35	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	45	Yes	FAC
2. *Nemopanthus mucronatus*	25	Yes	OBL
3. *Betula populifolia*	10	No	FAC
4.			
5.			
6.			
7.			
	80	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	65	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	80	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	25	x 1 =	25
FACW species	65	x 2 =	130
FAC species	85	x 3 =	255
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals	210	(A)	550 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-26_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-26_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7925758 **Long:** -67.8697149 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-26_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	30	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	35	Yes	FACU
2. *Viburnum nudum*	25	Yes	FACW
3. *Acer rubrum*	15	No	FAC
4. *Picea rubens*	3	No	FACU
5. *Pinus strobus*	3	No	FACU
6.			
7.			
	81	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaylussacia baccata*	30	Yes	FACU
2. *Kalmia angustifolia*	25	Yes	FAC
3. *Pteridium aquilinum*	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	40	x 3 =	120
FACU species	116	x 4 =	464
UPL species	0	x 5 =	0
Column Totals	181	(A)	634 (B)
Prevalence Index = B/A =	3.5		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-26_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 6	10YR 6/2	100					Sandy Loam	
6 - 8	10YR 5/6	100					Sandy Loam	
8 - 16	10YR 6/8	90					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-27_PFO-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7927943 **Long:** -67.8678876 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-27

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-27_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Betula papyrifera*	15	No	FACU
3. *Quercus rubra*	10	No	FACU
4.			
5.			
6.			
7.			
	85	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Nemopanthus mucronatus*	35	Yes	OBL
2. *Viburnum nudum*	10	No	FACW
3. *Picea rubens*	3	No	FACU
4. *Quercus rubra*	3	No	FACU
5.			
6.			
7.			
	51	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	65	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	35	x 1 =	35
FACW species	75	x 2 =	150
FAC species	60	x 3 =	180
FACU species	31	x 4 =	124
UPL species	0	x 5 =	0
Column Totals	201 (A)		489 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-27_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10 YR 2/2	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

Soil and redox colors not recorded

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield `, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-27_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7929201 **Long:** -67.8681347 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-27_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	65	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	35	Yes	FACU
2. *Gaylussacia baccata*	15	Yes	FACU
3. *Viburnum nudum*	10	No	FACW
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	40	Yes	FACU
2. *Pteridium aquilinum*	10	No	FACU
3. *Aralia nudicaulis*	3	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	53	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	20	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	20	x 3 =	60
FACU species	168	x 4 =	672
UPL species	0	x 5 =	0
Column Totals	198	(A)	752 (B)
Prevalence Index = B/A =	3.8		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-27_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 6	10YR 6/2	100					Sandy Loam	
6 - 12	10YR 5/8	90					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-28_PFO-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7828421 **Long:** -67.9128722 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-28

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
_✓_ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
_✓_ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-28_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Betula populifolia*	15	Yes	FAC
3. *Pinus strobus*	10	No	FACU
4. *Pinus resinosa*	8	No	FACU
5.			
6.			
7.			
	68	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Rhododendron canadense*	15	Yes	FACW
2. *Gaylussacia baccata*	15	Yes	FACU
3. *Picea rubens*	10	No	FACU
4. *Betula populifolia*	8	No	FAC
5. *Acer rubrum*	5	No	FAC
6.			
7.			
	53	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaylussacia frondosa*	3	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	66	x 3 =	198
FACU species	43	x 4 =	172
UPL species	0	x 5 =	0
Column Totals	124	(A)	400 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-28_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-CWF-28_PFO-2
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7830859013 **Long:** -67.9130912014 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-28

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
✓ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
✓ Shallow Aquitard (D3)
✓ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-28_PFO-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	30	Yes	FAC
2. *Betula papyrifera*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum dentatum*	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	80	(A)	260 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-28_PFO-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 2/1	100					Fine Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 5

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-28_PSS-2
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7828564 **Long:** -67.9126253 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-28

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✓ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-28_PSS-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Spiraea latifolia*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	30	(A)	60 (B)
Prevalence Index = B/A =	2		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-28_PSS-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-28_UPL-3
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7828647 **Long:** -67.9126175 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-28_UPL-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus grandidentata*	15	Yes	FACU
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	70	Yes	FACU
2. *Acer rubrum*	10	No	FAC
3. *Betula populifolia*	10	No	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	30	Yes	FAC
2. *Gaylussacia baccata*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	20	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals	160	(A)	590 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-28_UPL-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 3	10YR 6/2	100					Sandy Loam	
3 - 16	10YR 5/6	90					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-CWF-28_UPL-3
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7830600013 **Long:** -67.9130710848 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-28_UPL-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	40	Yes	FACU
2. *Picea rubens*	20	Yes	FACU
3. *Quercus rubra*	15	Yes	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Fagus grandifolia*	60	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	25	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	160 (A)		615 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-28_UPL-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Organic Material Duff	
2 - 5	7.5YR 3/3	100					Organic Material Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 5

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-29_PSS-1
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7843541 **Long:** -67.9110885 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-29

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-29_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	15	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Vaccinium corymbosum*	35	Yes	FACW
2. *Rhododendron canadense*	20	Yes	FACW
3. *Picea rubens*	15	No	FACU
4. *Betula populifolia*	15	No	FAC
5. *Nemopanthus mucronatus*	10	No	OBL
6.			
7.			
	95	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium corymbosum*	3	No	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	10	x 1 =	10
FACW species	58	x 2 =	116
FAC species	25	x 3 =	75
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	123	(A)	321 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-29_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-29_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7843341 **Long:** -67.9112188 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-29_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	65	Yes	FACU
2. *Gaylussacia baccata*	45	Yes	FACU
3. *Picea rubens*	5	No	FACU
4.			
5.			
6.			
7.			
	115	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	45	Yes	FACU
2. *Vaccinium angustifolium*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **5** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	205	x 4 =	820
UPL species	0	x 5 =	0
Column Totals	205	(A)	820 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-29_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 4	10YR 6/2	100					Sandy Loam	
4 - 12	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-30_PFO-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7859798 **Long:** -67.9072377 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-30

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-30_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	25	Yes	FACU
2. *Acer rubrum*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Nemopanthus mucronatus*	25	Yes	OBL
2. *Acer rubrum*	25	Yes	FAC
3. *Viburnum nudum*	15	No	FACW
4. *Alnus incana*	10	No	FACW
5. *Ilex verticillata*	5	No	FACW
6.			
7.			
	80	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus pubescens*	35	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	80	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	25	x 1 =	25
FACW species	65	x 2 =	130
FAC species	40	x 3 =	120
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	155	(A)	375 (B)
Prevalence Index = B/A =	2.4		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-30_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-30_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7864909 **Long:** -67.9069118 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-30_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Picea rubens*	15	Yes	FACU
3. *Pinus resinosa*	15	Yes	FACU
4. *Pinus strobus*	10	No	FACU
5. *Betula papyrifera*	8	No	FACU
6.			
7.			
	68	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	25	Yes	FACU
2. *Viburnum nudum*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	60	Yes	FACU
2. *Kalmia angustifolia*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	35	x 3 =	105
FACU species	133	x 4 =	532
UPL species	0	x 5 =	0
Column Totals	173	(A)	647 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-30_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 4	10YR 6/2	100					Sandy Loam	
4 - 8	7.5YR 4/6	90					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-31_PFO-1
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7883949 **Long:** -67.9036002 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-31

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-31_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Betula populifolia*	20	Yes	FAC
3. *Populus tremuloides*	10	No	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	35	Yes	FACW
2. *Ilex verticillata*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	15	Yes	FACW
2. *Rubus pubescens*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	50	x 3 =	150
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	130 (A)		330 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-31_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	
6 - 16	10YR 4/2	90	7.5YR 5/6	10	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-31_UPL-2
Investigator(s): Chuck Ferris, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7888412 **Long:** -67.9036585 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-31_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	30	Yes	FACU
2. *Betula populifolia*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	40	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	25	Yes	FACU
2. *Vaccinium angustifolium*	15	Yes	FACU
3. *Kalmia angustifolia*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals	135 (A)		515 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-31_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Loam	
3 - 7	10YR 6/2	100					Sandy Loam	
7 - 10	7.5YR 4/6	85					Sandy Loam	
10 - 18	7.5YR 5/8	80					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-CWF-32_PEM-1
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7899996 **Long:** -67.8927039 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-32

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
✓ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-32_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	75	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	90	(A)	210 (B)
Prevalence Index = B/A =	2.3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-32_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	
6 - 10	10YR 4/2	95	7.5YR 5/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-CWF-32_UPL-2
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.789481 **Long:** -67.8948005 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-32_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	70	Yes	FACU
2. *Acer saccharum*	15	No	FACU
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	25	Yes	FACU
2. *Acer pensylvanicum*	10	Yes	FACU
3. *Fagus grandifolia*	5	No	FACU
4.			
5.			
6.			
7.			
	40	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	20	Yes	FACU
2. *Cornus canadensis*	15	Yes	FAC
3. *Vaccinium angustifolium*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	20	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	155	x 4 =	620
UPL species	0	x 5 =	0
Column Totals	170	(A)	665 (B)
Prevalence Index = B/A =	3.9		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-32_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 4	10YR 6/2	100					Sandy Loam	
4 - 16	7.5YR 5/8	85	See Remarks				Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No Redox data recorded.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-CWF-33_PFO-1
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7894646 **Long:** -67.8961391 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-33

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-33_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	65	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	40	Yes	FACW
2. *Quercus rubra*	20	Yes	FACU
3. *Rhododendron canadense*	5	No	FACW
4. *Nemopanthus mucronatus*	5	No	OBL
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	45	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	90	x 2 =	180
FAC species	65	x 3 =	195
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	180 (A)		460 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-33_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Mucky Peat	
4 - 16	10YR 4/1	95	7.5YR 5/6	5	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** M E **Sampling Point:** W-CWF-33_UPL-2
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7893691 **Long:** -67.8961436 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-33_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	30	Yes	FACU
2. *Quercus rubra*	20	Yes	FACU
3. *Betula populifolia*	10	No	FAC
4.			
5.			
6.			
7.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	20	Yes	FACU
2. *Betula populifolia*	20	Yes	FAC
3. *Hamamelis virginiana*	10	No	FACU
4. *Picea rubens*	7	No	FACU
5.			
6.			
7.			
	57	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Gaylussacia baccata*	25	Yes	FACU
2. *Pteridium aquilinum*	15	Yes	FACU
3. *Kalmia angustifolia*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	127	x 4 =	508
UPL species	0	x 5 =	0
Column Totals	167	(A)	628 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-33_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 3	10YR 6/2	100					Sandy Loam	
3 - 16	10YR 4/4	95	See Remarks				Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No Redox Data recorded.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield. Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** M E **Sampling Point:** W-CWF-34_PFO-1
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7893364 **Long:** -67.8987724 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-34

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-34_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Betula populifolia*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	40	Yes	FACW
2. *Viburnum nudum*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus pubescens*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	120	(A)	285 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-34_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Boulder

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-34_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7886944 **Long:** -67.8991811 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-34_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	30	Yes	FACU
2. *Acer saccharum*	25	Yes	FACU
3. *Betula papyrifera*	20	Yes	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	25	Yes	FACW
2. *Betula populifolia*	20	Yes	FAC
3. *Rhododendron canadense*	15	Yes	FACW
4. *Acer pensylvanicum*	5	No	FACU
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	35	Yes	FAC
2. *Pteridium aquilinum*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	55	x 3 =	165
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	195	(A)	645 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-34_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 2	10YR 6/2	100					Sandy Loam	
2 - 8	7.5YR 4/6	90	See Remarks				Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

No Redox data recorded

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-35_PFO-1
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7873338 **Long:** -67.9022848 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-35

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-35_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Betula populifolia*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	20	Yes	FAC
2. *Ilex verticillata*	20	Yes	FACW
3. *Alnus incana*	15	Yes	FACW
4. *Viburnum nudum*	10	No	FACW
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus pubescens*	15	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	75	x 3 =	225
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	135 (A)		345 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-35_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Mucky Peat	
4 - 10	10YR 4/1	100	7.5YR 5/6	3	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-35_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7879099 **Long:** -67.9031814 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-35_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	45	Yes	FACU
2. *Populus tremuloides*	20	Yes	FACU
3. *Picea rubens*	15	No	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	25	Yes	FACU
2. *Viburnum nudum*	15	Yes	FACW
3. *Picea rubens*	5	No	FACU
4.			
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	45	Yes	FACU
2. *Vaccinium angustifolium*	20	Yes	FACU
3. *Kalmia angustifolia*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	10	x 3 =	30
FACU species	175	x 4 =	700
UPL species	0	x 5 =	0
Column Totals	200 (A)		760 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-35_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 8	10YR 6/3	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-CWF-36_PSS-1
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7877541 **Long:** -67.9035786 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-36

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-36_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	40	Yes	FACW
2. *Viburnum nudum*	40	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus pubescens*	25	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	105	x 2 =	210
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	125 (A)		270 (B)
Prevalence Index = B/A =	2.2		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-36_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Mucky Peat	
4 - 10	10YR 4/1	100	7.5YR 5/6	3	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** M E **Sampling Point:** W-CWF-36_UPL-2
Investigator(s): Chuck Ferris, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7877061 **Long:** -67.9035451 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-36_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	65	Yes	FACU
2. *Quercus rubra*	15	No	FACU
3. *Picea rubens*	10	No	FACU
4.			
5.			
6.			
7.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	30	Yes	FACU
2. *Viburnum nudum*	20	Yes	FACW
3. *Rhododendron canadense*	15	Yes	FACW
4.			
5.			
6.			
7.			
	65	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	55	Yes	FACU
2. *Kalmia angustifolia*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	20	x 3 =	60
FACU species	175	x 4 =	700
UPL species	0	x 5 =	0
Column Totals	230	(A)	830 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-36_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 4	10YR 6/2	100					Sandy Loam	
4 - 12	7.5YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-CWF-37_PFO-1
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.790673 **Long:** -67.9008276 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-37

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-37_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Quercus rubra*	15	Yes	FACU
3. *Betula populifolia*	10	No	FAC
4.			
5.			
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	30	Yes	FACW
2. *Viburnum nudum*	20	Yes	FACW
3. *Alnus incana*	15	Yes	FACW
4.			
5.			
6.			
7.			
	65	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Rubus pubescens*	3	No	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	3	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	68	x 2 =	136
FAC species	50	x 3 =	150
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	133	(A)	346 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-37_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-37_UPL-2
Investigator(s): Chuck Ferris , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7907703 **Long:** -67.9010285 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-37_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	40	Yes	FACU
2. *Quercus rubra*	15	Yes	FACU
3. *Betula populifolia*	15	Yes	FAC
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	20	Yes	FACU
2. *Viburnum nudum*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	25	Yes	FACU
2. *Gaultheria procumbens*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals	135 (A)		505 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-37_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 3	10YR 6/2	100					Sandy Loam	
3 - 10	7.5YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** M E **Sampling Point:** W-CWF-38_PSS-1
Investigator(s): Chuck Ferris, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7719197 **Long:** -67.9040165 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-38

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-38_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	20	Yes	FACW
2. *Acer rubrum*	10	Yes	FAC
3. *Betula populifolia*	5	No	FAC
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Spiraea alba*	30	Yes	FACW
2. *Spiraea tomentosa*	20	Yes	FACW
3. *Calamagrostis canadensis*	20	Yes	OBL
4. *Betula populifolia*	5	No	FAC
5. *Comptonia peregrina*	5	No	UPL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	20	x 1 =	20
FACW species	70	x 2 =	140
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals	115	(A)	245 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-38_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 5/2	90	10YR 4/6	10	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** M E **Sampling Point:** W-CWF-38_UPL-2
Investigator(s): Chuck Ferris, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.771784 **Long:** -67.9043679 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-38_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Populus tremuloides*	15	Yes	FACU
2. *Spiraea tomentosa*	15	Yes	FACW
3. *Spiraea latifolia*	5	No	FACW
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Comptonia peregrina*	50	Yes	UPL
2. *Kalmia angustifolia*	3	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	53	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	3	x 3 =	9
FACU species	15	x 4 =	60
UPL species	50	x 5 =	250
Column Totals	88	(A)	359 (B)

Prevalence Index = B/A = 4.1

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-38_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 3	10YR 6/2	100					Sand	
3 - 12	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-CWF-39_PFO-1
Investigator(s): Chuck Ferris, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7711051 **Long:** -67.901357 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-39

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	2	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-39_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	35	Yes	FACW
2. *Viburnum nudum*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	60	Yes	FACW
2. *Aralia nudicaulis*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	120	x 2 =	240
FAC species	45	x 3 =	135
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	170	(A)	395 (B)
Prevalence Index = B/A =	2.3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-39_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Mucky Peat	
8 - 16	10YR 4/2	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-39_UPL-2
Investigator(s): Chuck Ferris, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7714526 **Long:** -67.9011691 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-39_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	30	Yes	FACU
2. *Populus grandidentata*	30	Yes	FACU
3. *Betula papyrifera*	15	Yes	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	25	Yes	FACU
2. *Acer saccharum*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	45	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **6** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	155	x 4 =	620
UPL species	0	x 5 =	0
Column Totals	155	(A)	620 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-39_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 3	10YR 6/2	100					Sandy Loam	
3 - 16	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-40_PFO-1
Investigator(s): Chuck Ferris , Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.771006 **Long:** -67.8984593 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-40

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- _✓_ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-40_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	55	Yes	FAC
2. *Betula populifolia*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	30	Yes	FACW
2. *Acer rubrum*	15	Yes	FAC
3. *Nemopanthus mucronatus*	10	No	OBL
4.			
5.			
6.			
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus pubescens*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	10	x 1 =	10
FACW species	35	x 2 =	70
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	135	(A)	350 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-40_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Mucky Peat	
3 - 10	10YR 5/1	100	7.5YR 5/6	3	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-40_UPL-2
Investigator(s): Chuck Ferris, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7711215 **Long:** -67.8985556 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-40_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	30	Yes	FAC
2. *Picea rubens*	25	Yes	FACU
3. *Pinus strobus*	15	Yes	FACU
4.			
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	25	Yes	FACW
2. *Nemopanthus mucronatus*	15	Yes	OBL
3. *Betula populifolia*	15	Yes	FAC
4.			
5.			
6.			
7.			
	55	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	65	Yes	FAC
2. *Pteridium aquilinum*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	71.4	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	15	x 1 =	15
FACW species	25	x 2 =	50
FAC species	110	x 3 =	330
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals	200	(A)	595 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-40_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 7	10YR 6/2	100					Sandy Loam	
7 - 16	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-41_PUB-1
Investigator(s): Chuck Ferris , Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7714896 **Long:** -67.8952651 **Datum:** WGS84
Soil Map Unit Name: Bucksport and Wonsqueak mucks, 0 to 2 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-41

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PUB.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
_✓ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	8
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-41_PUB-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	10	Yes	FACW
2. *Viburnum nudum*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	5	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	20	(A)	35 (B)
Prevalence Index = B/A =	1.8		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-41_PUB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Mucky Peat	
4 - 16	10YR 4/2	100	7.5YR 5/8	3	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-41_UPL-2
Investigator(s): Chuck Ferris , Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7715298 **Long:** -67.8951162 **Datum:** WGS84
Soil Map Unit Name: Bucksport and Wonsqueak mucks, 0 to 2 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-41_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	45	Yes	FACU
2. *Betula populifolia*	30	Yes	FAC
3. *Acer rubrum*	25	Yes	FAC
4. *Populus grandidentata*	10	No	FACU
5.			
6.			
7.			
	110	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	25	Yes	FAC
2. *Pteridium aquilinum*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals	160	(A)	545 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-41_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/1	100					Loam	
3 - 16	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-42_PUB-1
Investigator(s): Chuck Ferris, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): lake **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7163125 **Long:** -67.9138428 **Datum:** WGS84
Soil Map Unit Name: Masardis fine sandy loam, 15 to 45 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-42

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PUB.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ✓ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	12
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Aerial photography depicts a darker signature (i.e. potential depression or relic scar) at this location, which suggests the potential for this area to be a wetland.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-42_PUB-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Utricularia macrorhiza*	10	Yes	OBL
2. *Nuphar advena*	2	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	12	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	12	x 1 =	12
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	12	(A)	12 (B)
Prevalence Index = B/A =	1		

Hydrophytic Vegetation Indicators:

- ✓ 1- Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-42_PUB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

Soils were assumed to be hydric due to the presence of inundation, FACW and OBL vegetation species, and a definitive wetland boundary.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-42_UPL-2
Investigator(s): Chuck Ferris, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 10 to 15
Subregion (LRR or MLRA): LRR R **Lat:** 44.7163131 **Long:** -67.9137423 **Datum:** WGS84
Soil Map Unit Name: Masardis fine sandy loam, 15 to 45 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-42_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	80	Yes	FACU
2. *Acer saccharum*	15	No	FACU
3.			
4.			
5.			
6.			
7.			
	95	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer saccharum*	10	Yes	FACU
2. *Viburnum nudum*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Vaccinium angustifolium*	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	20	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	160	x 4 =	640
UPL species	0	x 5 =	0
Column Totals	165	(A)	650 (B)
Prevalence Index = B/A =	3.9		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-42_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 3	10YR 6/2	100					Sandy Loam	
3 - 20	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-43_PFO-1
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.80827234 **Long:** -67.90836043 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-43

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	3	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-43_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Quercus rubra*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	35	Yes	FACW
2. *Acer rubrum*	15	Yes	FAC
3. *Viburnum dentatum*	10	No	FAC
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	35	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	55	x 3 =	165
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	130	(A)	325 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-43_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5Y 3/1	100					Loam	
4 - 16	2.5Y 4/2	100	7.5YR 5/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-43_UPL-2
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.80834658 **Long:** -67.90847533 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-43_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	35	Yes	FACU
2. *Quercus rubra*	15	Yes	FACU
3. *Betula papyrifera*	15	Yes	FACU
4.			
5.			
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer saccharum*	25	Yes	FACU
2. *Acer pensylvanicum*	20	Yes	FACU
3. *Quercus rubra*	5	No	FACU
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	55	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	45	Yes	FACU
2. *Gaultheria procumbens*	3	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	48	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **6** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	168	x 4 =	672
UPL species	0	x 5 =	0
Column Totals	168	(A)	672 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-43_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Loam	
3 - 4	10YR 6/2	95	See Remarks				Sandy Loam	
4 - 12	10YR 3/6	95	See Remarks				Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

No Redox data recorded.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-44_PFO-1
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.81084395 **Long:** -67.93235416 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-44

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-44_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	35	Yes	FAC
2. *Populus tremuloides*	20	Yes	FACU
3. *Acer rubrum*	15	Yes	FAC
4.			
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	15	Yes	FAC
2. *Abies balsamea*	10	Yes	FAC
3. *Tsuga canadensis*	5	No	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	83.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	105 (A)		340 (B)
Prevalence Index = B/A =	3.2		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-44_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 8	10YR 3/2	95	7.5YR 4/6	5	C	M	Loamy Sand	
8 - 16	10YR 4/2	90	7.5YR 4/6	10	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-44_UPL-2
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.81089565 **Long:** -67.93254669 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-44_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	30	Yes	FACU
2. *Betula papyrifera*	20	Yes	FACU
3. *Betula populifolia*	10	No	FAC
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Fagus grandifolia*	20	Yes	FACU
2. *Acer saccharum*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals	90	(A)	350 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-44_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loamy Sand	
2 - 6	7.5YR 4/6	100					Loamy Sand	
6 - 16	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-45_PFO-1
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.81169729 **Long:** -67.93244841 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-45

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	8
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-45_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	30	Yes	FAC
2. *Acer rubrum*	20	Yes	FAC
3. *Pinus strobus*	20	Yes	FACU
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	55	x 3 =	165
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	105	(A)	305 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_✓_ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-45_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-45_UPL-2
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8116594 **Long:** -67.93239467 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-45_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	35	Yes	FACU
2. *Acer saccharum*	15	Yes	FACU
3. *Acer pensylvanicum*	10	No	FACU
4. *Populus tremuloides*	5	No	FACU
5.			
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula papyrifera*	15	Yes	FACU
2. *Acer saccharum*	10	Yes	FACU
3. *Acer pensylvanicum*	10	Yes	FACU
4. *Betula alleghaniensis*	5	No	FAC
5. *Pinus strobus*	3	No	FACU
6.			
7.			
	43	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	103	x 4 =	412
UPL species	0	x 5 =	0
Column Totals	108	(A)	427 (B)
Prevalence Index = B/A =	4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-45_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 3	10YR 6/2	100					Loamy Sand	
3 - 8	10YR 4/6	100					Sandy Loam	
8 - 16	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-46_PSS-1
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.81252698 **Long:** -67.9325342 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-46

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	4
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-46_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	15	Yes	FAC
2. *Betula populifolia*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	35	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Dryopteris cristata*	5	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	35	x 2 =	70
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	65	(A)	150 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-46_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Muck	
2 - 10	10YR 5/2	100	7.5YR 5/6	5	C	M	Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-46_UPL-2
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8125684 **Long:** -67.93234599 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-46_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	40	Yes	FACU
2. *Acer saccharum*	25	Yes	FACU
3. *Betula populifolia*	15	No	FAC
4. *Betula papyrifera*	10	No	FACU
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	15	Yes	FACU
2. *Acer saccharum*	10	Yes	FACU
3. *Betula papyrifera*	5	No	FACU
4. *Abies balsamea*	5	No	FAC
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals	125 (A)		480 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-46_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 8	10YR 3/6	100					Sandy Loam	
8 - 16	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-47_PFO-1
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.81006533 **Long:** -67.9298368 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-47

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-47_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	35	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea mariana*	35	Yes	FACW
2. *Betula populifolia*	30	Yes	FAC
3. *Abies balsamea*	15	No	FAC
4. *Alnus incana*	10	No	FACW
5.			
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	140	(A)	340 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-47_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-47_UPL-2
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.81002782 **Long:** -67.92996456 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-47_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	60	Yes	FACU
2. *Betula papyrifera*	20	Yes	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	30	Yes	FAC
2. *Tsuga canadensis*	15	Yes	FACU
3. *Viburnum dentatum*	3	No	FAC
4.			
5.			
6.			
7.			
	48	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	43	x 3 =	129
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals	163	(A)	609 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-47_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 6	10YR 5/1	100					Sandy Loam	
6 - 16	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-48_PFO-1
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.80954044 **Long:** -67.93099504 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-48

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	1
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-48_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Populus tremuloides*	15	Yes	FACU
3. *Abies balsamea*	10	No	FAC
4. *Betula alleghaniensis*	10	No	FAC
5. *Pinus strobus*	5	No	FACU
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	15	Yes	FAC
2. *Betula alleghaniensis*	10	Yes	FAC
3. *Tsuga canadensis*	10	Yes	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	105	(A)	345 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-48_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Muck	
4 - 16	10YR 4/2	90	7.5YR 4/6	10	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-48_UPL-2
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.80966238 **Long:** -67.93109307 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-48_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	40	Yes	FACU
2. *Abies balsamea*	25	Yes	FAC
3. *Pinus strobus*	20	Yes	FACU
4. *Quercus rubra*	5	No	FACU
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	10	Yes	FAC
2. *Acer pensylvanicum*	10	Yes	FACU
3. *Tsuga canadensis*	15	Percent cover cannot be greater than a previous species	FACU
4. *Betula papyrifera*	10	Yes	FACU
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	135	(A)	505 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-48_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 3	10YR 6/2	100					Sandy Loam	
3 - 16	7.5YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-50_PFO-1
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.8059958 **Long:** -67.92695583 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-50

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	4
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-50_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Tsuga canadensis*	20	Yes	FACU
3. *Betula alleghaniensis*	10	No	FAC
4.			
5.			
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	25	Yes	FACW
2. *Tsuga canadensis*	15	Yes	FACU
3. *Abies balsamea*	10	Yes	FAC
4.			
5.			
6.			
7.			
	50	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	65	x 3 =	195
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals	125	(A)	385 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_✓_ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-50_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-50_UPL-2
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8057852 **Long:** -67.92692884 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-50_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	40	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3. *Tsuga canadensis*	10	No	FACU
4. *Betula papyrifera*	5	No	FACU
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	10	Yes	FAC
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	30	Yes	FAC
2. *Gaultheria procumbens*	30	Yes	FACU
3. *Pteridium aquilinum*	20	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals	175 (A)		640 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-50_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Loam	
1 - 8	7.5YR 5/6	100					Sandy Loam	
8 - 16	5YR 3/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-54_PFO-1
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.80553484 **Long:** -67.92636924 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-54

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	6
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-54_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	15	Yes	FACW
2. *Betula alleghaniensis*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	40	Yes	FACW
2. *Coptis trifolia*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	110	(A)	270 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-54_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100					Mucky Peat	
12 - 15	2.5Y 5/2	95	7.5YR 4/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 15

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-54_UPL-2
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.80558075 **Long:** -67.92646077 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-54_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	40	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3. *Acer saccharum*	15	No	FACU
4. *Fagus grandifolia*	10	No	FACU
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Fagus grandifolia*	15	Yes	FACU
2. *Hamamelis virginiana*	10	Yes	FACU
3. *Tsuga canadensis*	3	No	FACU
4.			
5.			
6.			
7.			
	28	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	10	Yes	FAC
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	103	x 4 =	412
UPL species	0	x 5 =	0
Column Totals	133 (A)		502 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-54_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 3	10YR 6/2	100					Sandy Loam	
3 - 14	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 14

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-55_PFO-1
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.80513712 **Long:** -67.92641823 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-55

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓ Surface Water (A1)
- _✓ High Water Table (A2)
- _✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	4
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-55_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Tsuga canadensis*	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	20	Yes	FACU
2. *Ilex verticillata*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	40	x 3 =	120
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	120	(A)	370 (B)
Prevalence Index = B/A =	3.1		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

_✓_ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_✓_ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-55_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 25	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-55_UPL-2
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.80520815 **Long:** -67.92636591 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-55_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	25	Yes	FACU
2. *Acer saccharum*	15	Yes	FACU
3. *Fagus grandifolia*	10	No	FACU
4. *Quercus rubra*	10	No	FACU
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	10	Yes	FACU
2. *Hamamelis virginiana*	10	Yes	FACU
3. *Fagus grandifolia*	10	Yes	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia latifolia*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **6** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals	115	(A)	460 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-55_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 2	10YR 6/2	100					Sandy Loam	
2 - 16	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-56_PFO-1
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.80432251 **Long:** -67.9258748 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-56

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	6
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-56_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Betula populifolia*	10	No	FAC
3. *Picea rubens*	10	No	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	50	Yes	FACW
2. *Vaccinium corymbosum*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	55	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	50	x 3 =	150
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	125	(A)	320 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-56_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 25	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-56_UPL-2
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.80433705 **Long:** -67.92580554 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-56_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	35	Yes	FACU
2. *Pinus strobus*	30	Yes	FACU
3. *Acer rubrum*	10	No	FAC
4. *Betula papyrifera*	10	No	FACU
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	30	Yes	FACU
2. *Viburnum acerifolium*	5	No	UPL
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Gaultheria procumbens*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **5** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	145	x 4 =	580
UPL species	5	x 5 =	25
Column Totals	160	(A)	635 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-56_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 2	10YR 6/2	100					Loamy Sand	
2 - 16	7.5YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-57_PFO-1
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.80119585 **Long:** -67.92600489 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-57

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	4
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	1

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-57_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Tsuga canadensis*	20	Yes	FACU
3. *Fraxinus nigra*	10	No	FACW
4.			
5.			
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	20	Yes	FAC
2. *Ilex verticillata*	5	No	FACW
3. *Betula populifolia*	5	No	FAC
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	60	x 3 =	180
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	100	(A)	300 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-57_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Mucky Peat	
8 - 16	10YR 6/2	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
✓ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-57_UPL-2
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.80113654 **Long:** -67.92591557 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-57_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	35	Yes	FACU
2. *Abies balsamea*	20	Yes	FAC
3. *Tsuga canadensis*	20	Yes	FACU
4. *Quercus rubra*	10	No	FACU
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	15	Yes	FAC
2. *Hamamelis virginiana*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	3	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	73	x 4 =	292
UPL species	0	x 5 =	0
Column Totals	108	(A)	397 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-57_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 3	10YR 6/2	100					Sandy Loam	
3 - 8	7.5YR 4/6	100					Sandy Loam	
8 - 16	10YR 5/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-58_PEM-3
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.80024684 **Long:** -67.92552169 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-58

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-58_PEM-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	90	Yes	OBL
2. *Scirpus cyperinus*	10	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	115	(A)	145 (B)

Prevalence Index = B/A = 1.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-58_PEM-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Mucky Peat	
8 - 16	10YR 4/2	92	7.5YR 4/6	8	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-58_PFO-1
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.80016002 **Long:** -67.92588909 **Datum:** WGS84
Soil Map Unit Name: Adams-Croghan association, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-58

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-58_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Spiraea tomentosa*	10	Yes	FACW
2. *Betula alleghaniensis*	5	Yes	FAC
3. *Abies balsamea*	5	Yes	FAC
4. *Pinus strobus*	3	No	FACU
5.			
6.			
7.			
	23	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	90	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	90	x 1 =	90
FACW species	10	x 2 =	20
FAC species	70	x 3 =	210
FACU species	3	x 4 =	12
UPL species	0	x 5 =	0
Column Totals	173	(A)	332 (B)
Prevalence Index = B/A =	1.9		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-58_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-58_UPL-2
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.800004611 **Long:** -67.92598548 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-58_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Abies balsamea*	10	Yes	FAC
3. *Tsuga canadensis*	10	Yes	FACU
4. *Betula populifolia*	10	Yes	FAC
5. *Pinus strobus*	5	No	FACU
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	10	Yes	FACU
2. *Quercus rubra*	3	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	13	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pinus strobus*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	33	x 4 =	132
UPL species	0	x 5 =	0
Column Totals	88	(A)	297 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-58_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 3	10YR 6/2	100					Sandy Loam	
3 - 6	5YR 3/4	100					Sandy Loam	
6 - 16	7.5YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-58_UPL-4
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.80004611 **Long:** -67.92598548 **Datum:** WGS84
Soil Map Unit Name: Adams-Croghan association, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-58_UPL-4

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	55	Yes	FACW
2. *Betula populifolia*	15	Yes	FAC
3. *Abies balsamea*	5	No	FAC
4.			
5.			
6.			
7.			
	75	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	45	Yes	FACU
2. *Gaultheria procumbens*	40	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	30	x 3 =	90
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals	170	(A)	540 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-58_UPL-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/2	100					Loam	
2 - 8	7.5YR 4/6	100					Sandy Loam	
8 - 16	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-59_PFO-1
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.79382803 **Long:** -67.92458921 **Datum:** WGS84
Soil Map Unit Name: Nicholville-Croghan complex, 0 to 5 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-59

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	3
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-59_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Pinus strobus*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	60	Yes	FACW
2. *Abies balsamea*	5	No	FAC
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia latifolia*	3	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	65	x 3 =	195
FACU species	13	x 4 =	52
UPL species	0	x 5 =	0
Column Totals	138	(A)	367 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-59_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Mucky Peat	
4 - 12	10YR 4/2	92	7.5YR 4/6	8	C	M	Sandy Loam	
12 - 16	10YR 3/4	95	7.5YR 4/6	5	C	M	Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-59_UPL-2
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.79382803 **Long:** -67.92458921 **Datum:** WGS84
Soil Map Unit Name: Nicholville-Croghan complex, 0 to 5 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-59_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Abies balsamea*	30	Yes	FAC
3. *Picea rubens*	15	No	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	10	Yes	FACW
2. *Hamamelis virginiana*	5	Yes	FACU
3. *Betula populifolia*	3	No	FAC
4.			
5.			
6.			
7.			
	18	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	68	x 3 =	204
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	98	(A)	304 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-59_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 6	10YR 5/3	100					Sandy Loam	
6 - 16	5YR 3/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-60_PFO-1
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.79167606 **Long:** -67.92468082 **Datum:** WGS84
Soil Map Unit Name: Nicholville-Croghan complex, 0 to 5 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-60

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	3
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-60_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Betula populifolia*	25	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	45	Yes	FACW
2. *Viburnum nudum*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	25	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	25	x 1 =	25
FACW species	55	x 2 =	110
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	140	(A)	315 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-60_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 5/6	100					Sandy Loam	
4 - 8	10YR 2/1	95	7.5YR 4/6	5	C	M	Loam	
8 - 16	10YR 5/2	95	7.5YR 4/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
_✓_ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-60_UPL-2
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.79168814 **Long:** -67.92460656 **Datum:** WGS84
Soil Map Unit Name: Nicholville-Croghan complex, 0 to 5 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-60_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	60	Yes	FAC
2. *Populus tremuloides*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	35	Yes	FACU
2. *Viburnum nudum*	15	Yes	FACW
3. *Populus tremuloides*	10	No	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	45	Yes	FACU
2. *Pteridium aquilinum*	25	Yes	FACU
3. *Kalmia latifolia*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	60	x 3 =	180
FACU species	140	x 4 =	560
UPL species	0	x 5 =	0
Column Totals	215	(A)	770 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-60_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 6	10YR 4/6	100					Sandy Loam	
6 - 16	10YR 5/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-61_PSS-1
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Bog **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.78586302 **Long:** -67.92514698 **Datum:** WGS84
Soil Map Unit Name: Bucksport and Wonsqueak mucks, 0 to 2 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-61

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Bog WoSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-61_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Chamaedaphne calyculata*	30	Yes	OBL
2. *Rhododendron canadense*	30	Yes	FACW
3. *Rhododendron groenlandicum*	25	Yes	OBL
4. *Kalmia polifolia*	0	No	OBL
5.			
6.			
7.			
	85	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	55	x 1 =	55
FACW species	30	x 2 =	60
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	90	(A)	130 (B)
Prevalence Index = B/A =	1.4		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-61_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 48	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-61_UPL-2
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.78581648 **Long:** -67.92507598 **Datum:** WGS84
Soil Map Unit Name: Bucksport and Wonsqueak mucks, 0 to 2 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-61_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus resinosa*	50	Yes	FACU
2. *Pinus strobus*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	5	Yes	FACU
2. *Viburnum nudum*	5	Yes	FACW
3. *Pinus resinosa*	3	Yes	FACU
4.			
5.			
6.			
7.			
	13	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	90	x 3 =	270
FACU species	78	x 4 =	312
UPL species	0	x 5 =	0
Column Totals	173	(A)	592 (B)
Prevalence Index = B/A =	3.4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-61_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Loam	
3 - 16	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-63_PEM-1
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.76770631 **Long:** -67.92940057 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 15 to 60 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-CWF-63

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	2
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-63_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Spiraea tomentosa*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	60	Yes	OBL
2. *Scirpus cyperinus*	35	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	95	x 1 =	95
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	100	(A)	105 (B)
Prevalence Index = B/A =	1.1		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-63_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-63_UPL-2
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.76762539 **Long:** -67.92944511 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 15 to 60 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-63_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus banksiana*	40	Yes	FACU
2. *Betula populifolia*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	60	Yes	FACU
2. *Kalmia angustifolia*	20	Yes	FAC
3. *Pteridium aquilinum*	20	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals	175 (A)		645 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-63_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 4	10YR 5/2	100					Sandy Loam	
4 - 16	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-67_PFO-1
Investigator(s): Chuck Ferris, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.75107258 **Long:** -67.91591769 **Datum:** WGS84
Soil Map Unit Name: Sheepscot fine sandy loam, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-67

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	2
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-67_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	75	Yes	FAC
2. *Betula populifolia*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Spiraea latifolia*	25	Yes	FACW
2. *Rhododendron canadense*	5	No	FACW
3. *Populus tremuloides*	5	No	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	3	No	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	33	x 2 =	66
FAC species	80	x 3 =	240
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	118	(A)	326 (B)
Prevalence Index = B/A =	2.8		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-67_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/1	100					Muck	
10 - 16	10YR 6/1	95	7.5YR 4/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-67_UPL-2
Investigator(s): Chuck Ferris **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hilltop **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.75098651 **Long:** -67.91597799 **Datum:** WGS84
Soil Map Unit Name: Sheepscot fine sandy loam, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-67_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	80	Yes	FACU
2. *Kalmia angustifolia*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals	85	(A)	335 (B)
Prevalence Index = B/A =	3.9		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-67_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Loam	
4 - 6	7.5YR 3/4	100					Sandy Loam	
6 - 16	7.5YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-71_PEM-1
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Bog **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.74593032 **Long:** -67.91430793 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-71

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	4
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-71_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	40	Yes	FAC
2. *Chamaedaphne calyculata*	20	Yes	OBL
3. *Spiraea latifolia*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	20	x 1 =	20
FACW species	5	x 2 =	10
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	75	(A)	180 (B)
Prevalence Index = B/A =	2.4		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-71_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Loam	
3 - 6	10YR 6/2	95	7.5YR 6/4	5	C	M	Sandy Loam	
6 - 8	5Y 4/2	95	7.5YR 4/6	5	C	M	Sandy Loam	
8 - 16	5Y 5/2	95	7.5YR 4/6	5	C	M	Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-71_UPL-2
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.74590937 **Long:** -67.91443046 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-71_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula papyrifera*	3	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	3	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	40	Yes	FAC
2. *Rhododendron canadense*	30	Yes	FACW
3. *Gaultheria procumbens*	20	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	40	x 3 =	120
FACU species	23	x 4 =	92
UPL species	0	x 5 =	0
Column Totals	93	(A)	272 (B)
Prevalence Index = B/A =	2.9		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-71_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 4	10YR 4/4	100					Sandy Loam	
4 - 16	2.5Y 5/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-72_PFO-1
Investigator(s): Chuck Ferris , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.74488314 **Long:** -67.91414377 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-CWF-72

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-72_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Pinus strobus*	25	Yes	FACU
3. *Picea rubens*	25	Yes	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	10	Yes	FAC
2. *Acer rubrum*	10	Yes	FAC
3. *Pinus strobus*	3	No	FACU
4. *Betula populifolia*	3	No	FAC
5.			
6.			
7.			
	26	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	2	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	53	x 4 =	212
UPL species	0	x 5 =	0
Column Totals	108	(A)	377 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

_✓_ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_✓_ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-72_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-CWF-72_UPL-2
Investigator(s): Chuck Ferris, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.74480832 **Long:** -67.91426211 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-CWF-72_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	40	Yes	FACU
2. *Picea rubens*	25	Yes	FACU
3. *Betula populifolia*	15	No	FAC
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	3	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	68	x 4 =	272
UPL species	0	x 5 =	0
Column Totals	93	(A)	347 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-CWF-72_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 2	10YR 5/2	100					Sandy Loam	
2 - 14	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 14

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-01_PFO-1
Investigator(s): Duane Choquette, Molly Lennon **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hilltop **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.79115122 **Long:** -67.8882769962 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** PFO
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-DMC-01

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	5

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-01_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Quercus rubra*	40	Yes	FACU
3. *Acer pensylvanicum*	20	Yes	FACU
4.			
5.			
6.			
7.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	15	Yes	FACW
2. *Acer rubrum*	10	Yes	FAC
3. *Acer pensylvanicum*	5	No	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	28	Yes	FACW
2. *Onoclea sensibilis*	10	Yes	FACW
3. *Acer pensylvanicum*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	43	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	71.4	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	53	x 2 =	106
FAC species	50	x 3 =	150
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	173	(A)	536 (B)
Prevalence Index = B/A =	3.1		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-01_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Fine Sandy Loam	
4 - 10	10YR 3/1	100					Sandy Loam	
10 - 18	10YR 5/2	98	10YR 4/6	2	C	M	Gravelly Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocks
Depth (inches): 18

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-01_UPL-1
Investigator(s): Duane Choquette, Molly Lennon **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hilltop **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7914669663 **Long:** -67.8882676922 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-01_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	90	Yes	FACU
2. *Pinus strobus*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
	100	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	28	Yes	FACU
2. *Hamamelis virginiana*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	43	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Aralia nudicaulis*	25	Yes	FACU
2. *Pteridium aquilinum*	20	Yes	FACU
3. *Vaccinium angustifolium*	15	Yes	FACU
4. *Mitchella repens*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **6** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	208	x 4 =	832
UPL species	0	x 5 =	0
Column Totals	208	(A)	832 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-01_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	7.5YR 2.5/1	100					Org matter Sandy Loam	
3 - 5	7.5YR 4/1	100					Sandy Loam	
5 - 8	7.5YR 4/4	100					Sandy Loam	
8 - 18	7.5YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-02_PFO-1
Investigator(s): Duane Choquette, Molly Lennon **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7921312321 **Long:** -67.8990509269 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:** PFO
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-DMC-02

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ✓ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	6

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-02_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	65	Yes	FAC
2. *Pinus strobus*	15	No	FACU
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	40	Yes	FACW
2. *Acer pensylvanicum*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	40	Yes	FACW
2. *Aralia nudicaulis*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	65	x 3 =	195
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	190 (A)		535 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-02_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100					Fine Silt Loam	
12 - 14	10YR 3/1	95	10YR 4/4	5	C	M	Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
_✓_ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocks
Depth (inches): 14

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-02_UPL-1
Investigator(s): Duane Choquette, Molly Lennon **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Knob **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7929184186 **Long:** -67.8988991306 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-02_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	65	Yes	FACU
2. *Acer rubrum*	20	No	FAC
3. *Acer saccharum*	10	No	FACU
4. *Pinus strobus*	10	No	FACU
5.			
6.			
7.			
	105	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	40	Yes	FACU
2. *Acer pensylvanicum*	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	40	Yes	FACU
2. *Mitchella repens*	15	Yes	FACU
3. *Vaccinium angustifolium*	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	220	x 4 =	880
UPL species	0	x 5 =	0
Column Totals	240	(A)	940 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-02_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Org matter Sandy Loam	
2 - 4	10YR 4/2	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-03_PFO-1
Investigator(s): Duane Choquette, Molly Lennon **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8090164503 **Long:** -67.9095482547 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:** PFO
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DMC-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- _✓_ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- _✓_ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	3	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-03_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	100	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	50	Yes	FACW
2. *Quercus rubra*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	25	Yes	FACW
2. *Coptis trifolia*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	80	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	100	x 3 =	300
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	205	(A)	540 (B)
Prevalence Index = B/A =	2.6		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

_✓_ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-03_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	7.5YR 2.5/2	100					Org matter Loam	
3 - 5	10YR 2/1	100					Org matter Loam	
5 - 8	10YR 3/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
_✓_ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocks
Depth (inches): 8

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-03_UPL-1
Investigator(s): Duane Choquette , Molly Lennon **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.8091901234 **Long:** -67.9095588159 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-03_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	65	Yes	FACU
2. *Acer rubrum*	25	Yes	FAC
3. *Pinus strobus*	5	No	FACU
4. *Betula papyrifera*	5	No	FACU
5.			
6.			
7.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	45	Yes	FACU
2. *Quercus rubra*	20	Yes	FACU
3. *Betula papyrifera*	10	No	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	50	Yes	FAC
2. *Pteridium aquilinum*	35	Yes	FACU
3. *Cornus canadensis*	20	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	185	x 4 =	740
UPL species	0	x 5 =	0
Column Totals	280	(A)	1025 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-03_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Fibric Loam	
3 - 5	10YR 3/3	100					Gravelly Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocks
Depth (inches): 5

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Oct-16
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-20_PFO-1
Investigator(s): Duane Choquette, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7956760309 **Long:** -67.9238879308 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-DMC-20

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ✓ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	10

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-20_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	85	Yes	FAC
2. *Betula papyrifera*	5	No	FACU
3. *Picea rubens*	5	No	FACU
4.			
5.			
6.			
7.			
	95	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	60	Yes	FACW
2. *Alnus incana*	40	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	100	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Rubus hispidus*	15	Yes	FACW
2. *Osmundastrum cinnamomeum*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	130	x 2 =	260
FAC species	85	x 3 =	255
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	225	(A)	555 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-20_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 2/2	100					Org matter Sandy Loam	
9 - 14	10YR 4/2	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocks
Depth (inches): 14

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Oct-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DMC-20_UPL-1
Investigator(s): Duane Choquette, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7746336 **Long:** -67.8397847 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-20_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	60	Yes	FACU
2. *Pinus strobus*	15	No	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	85	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Vaccinium corymbosum*	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	70	Yes	FACU
2. *Kalmia angustifolia*	40	Yes	FAC
3. *Mitchella repens*	20	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	130	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	50	x 3 =	150
FACU species	165	x 4 =	660
UPL species	0	x 5 =	0
Column Totals	255	(A)	890 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-20_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Fine Sandy Loam	
2 - 6	10YR 3/3	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Oct-16
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-21_PFO-1
Investigator(s): Matthew Todd, Kate Harrelson, Duane Choquette **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.776 **Long:** -67.871 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:** PFO
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-DMC-21

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✓ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	12

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-21_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	75	Yes	FAC
2. *Betula papyrifera*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	80	Yes	FACW
2. *Ilex verticillata*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	60	Yes	FAC
2. *Osmunda spectabilis*	30	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	30	x 1 =	30
FACW species	90	x 2 =	180
FAC species	135	x 3 =	405
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	265	(A)	655 (B)
Prevalence Index = B/A =	2.5		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-21_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Org matter Sandy Loam	
2 - 10	10YR 2/2	100					Fine Sandy Loam	
10 - 18	10YR 4/1	95	10YR 4/4	5	D	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Oct-16
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-21_UPL-1
Investigator(s): Matthew Todd, Kate Harrelson, Duane Choquette **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Knob **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.776 **Long:** -67.871 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-21_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Populus tremuloides*	30	Yes	FACU
3. *Pinus strobus*	30	Yes	FACU
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	50	Yes	FACU
2. *Pinus strobus*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	20	Yes	FAC
2. *Cornus canadensis*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	130	x 4 =	520
UPL species	0	x 5 =	0
Column Totals	190 (A)		700 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-21_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Fine Sandy Loam	
1 - 6	10YR 5/6	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Boulder
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Apex **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-01_PFO-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:** Cherryfield
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.8080208 **Long:** -67.9261909 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-01

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-01_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Quercus rubra*	15	Yes	FACU
3. *Betula alleghaniensis*	10	No	FAC
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	2	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	2	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2. *Acer rubrum*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	70	x 3 =	210
FACU species	17	x 4 =	68
UPL species	0	x 5 =	0
Column Totals	107	(A)	318 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-01_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Org matter Silt Loam	
3 - 6	2.5Y 4/1	100					Loamy Sand	
6 - 12	2.5Y 5/1	98	5YR 4/6	2	C	M	Sandy Clay Loam	
12 - 18	2.5Y 5/2	75	7.5YR 4/6	25	C	M	Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Apex **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-01_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:** Cherryfield
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.8081292 **Long:** -67.9260273 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-01_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	35	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3. *Populus tremuloides*	15	No	FACU
4. *Acer saccharum*	5	No	FACU
5. *Fagus grandifolia*	5	No	FACU
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer pensylvanicum*	10	Yes	FACU
2. *Hamamelis virginiana*	5	Yes	FACU
3. *Quercus rubra*	5	Yes	FACU
4. *Picea rubens*	5	Yes	FACU
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pyrola americana*	30	Yes	FAC
2. *Pteridium aquilinum*	15	Yes	FACU
3. *Vaccinium angustifolium*	10	No	FACU
4. *Acer rubrum*	5	No	FAC
5. *Acer pensylvanicum*	5	No	FACU
6. *Cornus canadensis*	2	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	67	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	57	x 3 =	171
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals	172	(A)	631 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-GAR-01_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 4/2	100					Sandy Loam	
1 - 18	10YR 5/6	100					Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: APEX **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-02_PFO-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:** Cherryfield
Landform (hillslope, terrace, etc.): Swamp **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8067275 **Long:** -67.9253521 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-02

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ✓ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✓ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ✓ No ____	Depth (inches):	1
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-02_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Abies balsamea*	10	No	FAC
3. *Betula alleghaniensis*	5	No	FAC
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3. *Abies balsamea*	5	Yes	FAC
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	50	Yes	FACW
2. *Viburnum lentago*	5	No	FAC
3. *Maianthemum canadense*	2	No	FACU
4. *Quercus rubra*	2	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	59	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	90	x 3 =	270
FACU species	14	x 4 =	56
UPL species	0	x 5 =	0
Column Totals	154	(A)	426 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-02_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Apex **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-02_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:** Cherryfield
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.8066312 **Long:** -67.9253076 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-02_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Betula alleghaniensis*	20	Yes	FAC
3. *Acer pensylvanicum*	10	No	FACU
4. *Quercus rubra*	10	No	FACU
5.			
6.			
7.			
	100	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	15	Yes	FAC
2. *Picea rubens*	5	Yes	FACU
3. *Acer pensylvanicum*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Aralia nudicaulis*	20	Yes	FACU
2. *Pyrola americana*	20	Yes	FAC
3. *Vaccinium angustifolium*	5	No	FACU
4. *Maianthemum canadense*	5	No	FACU
5. *Acer rubrum*	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	52	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	117	x 3 =	351
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	177	(A)	591 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

The hydrophytic vegetation criterion has been met. However, due to the absence of wetland hydrology and/or hydric soils, this data point is within a non-wetland.

SOIL

Sampling Point: W-GAR-02_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loamy Sand	
1 - 6	2.5Y 4/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocks
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Apex **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-03_PFO-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:** Cherryfield
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.8057403 **Long:** -67.9247746 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-03_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	30	Yes	FACW
2. *Acer rubrum*	25	Yes	FAC
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Nemopanthus mucronatus*	20	Yes	OBL
2. *Vaccinium corymbosum*	15	Yes	FACW
3. *Picea mariana*	5	No	FACW
4.			
5.			
6.			
7.			
	40	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	60	Yes	FACW
2. *Acer rubrum*	1	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	61	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	20	x 1 =	20
FACW species	110	x 2 =	220
FAC species	26	x 3 =	78
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	161	(A)	338 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-03_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 2/1	100					Mucky Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Apex **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-03_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:** Cherryfield
Landform (hillslope, terrace, etc.): Knob **Local relief (concave, convex, none):** Concave **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.8058526 **Long:** -67.9246013 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-03_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	15	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3. *Pinus strobus*	7	No	FACU
4. *Picea rubens*	5	No	FACU
5.			
6.			
7.			
	37	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	70	Yes	FACU
2. *Kalmia latifolia*	60	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	130	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pyrola americana*	80	Yes	FAC
2. *Pteridium aquilinum*	60	Yes	FACU
3. *Pinus strobus*	2	No	FACU
4. *Quercus rubra*	2	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	144	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	221	x 4 =	884
UPL species	0	x 5 =	0
Column Totals	311 (A)		1154 (B)
Prevalence Index = B/A =	3.7		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-GAR-03_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Sandy Loam	
1 - 6	10YR 3/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Apex **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-04_PFO-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:** Cherryfield
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.8059753 **Long:** -67.9294229 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-04

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-04_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Abies balsamea*	15	No	FAC
3. *Acer pensylvanicum*	7	No	FACU
4. *Pinus strobus*	2	No	FACU
5. *Picea mariana*	2	No	FACW
6.			
7.			
	86	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	5	Yes	FAC
2. *Hamamelis virginiana*	5	Yes	FACU
3. *Vaccinium corymbosum*	2	No	FACW
4.			
5.			
6.			
7.			
	12	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	50	Yes	FACW
2. *Aralia nudicaulis*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	54	x 2 =	108
FAC species	80	x 3 =	240
FACU species	19	x 4 =	76
UPL species	0	x 5 =	0
Column Totals	153 (A)		424 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-04_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Org matter Muck	
3 - 12	2.5Y 5/1	100					Silt Loam	
12 - 18	2.5Y 5/1	75	2.5Y 4/4	25	C	M	Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Apex **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-04_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:** Cherryfield
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.8058154 **Long:** -67.9292989 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-04_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	50	Yes	FACU
2. *Acer rubrum*	40	Yes	FAC
3. *Picea rubens*	20	No	FACU
4.			
5.			
6.			
7.			
	110	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	25	Yes	FACU
2. *Abies balsamea*	10	Yes	FAC
3. *Picea rubens*	5	No	FACU
4. *Pinus strobus*	2	No	FACU
5. *Quercus rubra*	2	No	FACU
6.			
7.			
	44	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pyrola americana*	40	Yes	FAC
2. *Pteridium aquilinum*	15	Yes	FACU
3. *Quercus rubra*	10	No	FACU
4. *Cornus canadensis*	10	No	FAC
5. *Rubus hispidoides*	5	No	FACW
6. *Aralia nudicaulis*	5	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	100	x 3 =	300
FACU species	134	x 4 =	536
UPL species	0	x 5 =	0
Column Totals	239	(A)	846 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-GAR-04_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Sandy Loam	
1 - 3	10YR 4/2	100					Silty Clay Loam	
3 - 8	5YR 4/6	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-GAR-05_PFO-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:** Cherryfield
Landform (hillslope, terrace, etc.): Swamp **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8055776 **Long:** -67.9294158 **Datum:** WGS84
Soil Map Unit Name: Wonsqueak and Bucksport mucks, 0 to 2 percent slopes, frequently flooded **NWI classification:** PSS
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-05

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✓ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ✓ No ____	Depth (inches):	5
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-05_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	40	Yes	FACW
2. *Betula alleghaniensis*	40	Yes	FAC
3. *Acer rubrum*	20	No	FAC
4. *Pinus strobus*	20	No	FACU
5.			
6.			
7.			
	120	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	25	Yes	FACW
2. *Nemopanthus mucronatus*	20	Yes	OBL
3. *Viburnum nudum*	5	No	FACW
4. *Picea mariana*	2	No	FACW
5.			
6.			
7.			
	52	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Carex folliculata*	30	Yes	OBL
2. *Rubus hispidus*	30	Yes	FACW
3. *Cornus canadensis*	5	No	FAC
4. *Osmundastrum cinnamomeum*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	50	x 1 =	50
FACW species	107	x 2 =	214
FAC species	65	x 3 =	195
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	242	(A)	539 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-05_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 2/1	100					Muck	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Apex **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-05_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:** Cherryfield
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8050758 **Long:** -67.9296965 **Datum:** WGS84
Soil Map Unit Name: Wonsqueak and Bucksport mucks, 0 to 2 percent slopes, frequently flooded **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-05_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	60	Yes	FAC
2. *Populus tremuloides*	5	No	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	10	Yes	FAC
2. *Picea rubens*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	10	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3. *Thuja occidentalis*	2	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	17	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	80	x 3 =	240
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	102	(A)	324 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

The hydrophytic vegetation criterion has been met. However, due to the absence of wetland hydrology and/or hydric soils, this data point is within a non-wetland.

SOIL

Sampling Point: W-GAR-05_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	5YR 6/1	100					Loamy Sand	
4 - 7	2.5YR 3/6	100					Loamy Sand	
7 - 12	5YR 4/6	100					Loamy Sand	
12 - 16	10YR 5/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 16

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** North Washington, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-6_PFO-1
Investigator(s): Matt Regan, Sam kefferstan, Gregory Russo, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.803572 **Long:** -67.929821 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-GAR-6

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-6_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Pinus strobus*	5	No	FACU
3. *Picea rubens*	5	No	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Aronia melanocarpa*	20	Yes	FAC
2. *Vaccinium corymbosum*	10	Yes	FACW
3. *Abies balsamea*	5	No	FAC
4. *Picea rubens*	5	No	FACU
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	5	Yes	FACU
2. *Aronia melanocarpa*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	50	x 3 =	150
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	80	(A)	250 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-6_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	7.5YR 2.5/2	100					Peat	
12 - 16	7.5YR 3/1	100					Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 16

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** North Washington, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-6_UPL-1
Investigator(s): Matt Regan, Sam kefferstan, Gregory Russo, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.803424 **Long:** -67.929803 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-6_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	15	Yes	FACU
2. *Pinus strobus*	10	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4. *Picea rubens*	5	No	FACU
5.			
6.			
7.			
	35	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	15	Yes	FACW
2. *Picea rubens*	5	Yes	FACU
3. *Betula papyrifera*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	70	Yes	FAC
2. *Pteridium aquilinum*	60	Yes	FACU
3. *Vaccinium angustifolium*	20	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	150	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	28.6	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	75	x 3 =	225
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals	210	(A)	735 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-GAR-6_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	5YR 2.5/2	100					Org matter Loamy Sand	
2 - 4	5YR 4/1	100					Loamy Sand	e horizon

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-07_PEM-2
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7436711 **Long:** -67.914599 **Datum:** WGS84
Soil Map Unit Name: Medomak and Wonsqueak soils, frequently flooded **NWI classification:** PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-07

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
✓ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
✓ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-07_PEM-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	2	No	FAC
2. *Alnus incana*	2	No	FACW
3.			
4.			
5.			
6.			
7.			
	4	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	100	Yes	OBL
2. *Spiraea latifolia*	10	No	FACW
3. *Solidago rugosa*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	120	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	100	x 1 =	100
FACW species	12	x 2 =	24
FAC species	12	x 3 =	36
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	124 (A)		160 (B)
Prevalence Index = B/A =	1.3		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-07_PEM-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/1	100					Org matter Silty Clay Loam	
10 - 20	10YR 4/1	95	7.5YR 3/4	5	C	M	Org matter Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-07_PFO-3
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7430154 **Long:** -67.9143603 **Datum:** WGS84
Soil Map Unit Name: Medomak and Wonsqueak soils, frequently flooded **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-07

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-07_PFO-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	60	Yes	FAC
2. *Betula alleghaniensis*	50	Yes	FAC
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	120	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Lonicera canadensis*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Parathelypteris noveboracensis*	20	Yes	FAC
2. *Osmundastrum cinnamomeum*	10	Yes	FACW
3. *Dryopteris marginalis*	10	Yes	FACU
4. *Acer rubrum*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	145	x 3 =	435
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	170	(A)	515 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-07_PFO-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 2/1	100					Mucky Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-07_PSS-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7438874 **Long:** -67.9146707 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-07

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
✓ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
✓ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-07_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	80	Yes	FACW
2. *Nemopanthus mucronatus*	50	Yes	OBL
3. *Viburnum recognitum*	40	Yes	FAC
4.			
5.			
6.			
7.			
	170	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Solidago rugosa*	70	Yes	FAC
2. *Rubus hispidus*	60	Yes	FACW
3. *Doellingeria umbellata*	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	140	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	50	x 1 =	50
FACW species	150	x 2 =	300
FAC species	110	x 3 =	330
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	310 (A)		680 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-07_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 3/3	98	7.5YR 4/6	2	C	M	Sand	
8 - 18	2.5Y 4/2	80	5YR 3/4	20	C	M	Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
✓ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-07_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7438418 **Long:** -67.9146349 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-07_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	30	Yes	FACU
2. *Acer rubrum*	25	Yes	FAC
3. *Betula populifolia*	10	No	FAC
4. *Populus tremuloides*	10	No	FACU
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Corylus cornuta*	40	Yes	FACU
2. *Viburnum recognitum*	15	Yes	FAC
3. *Rubus pubescens*	5	No	FACW
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pyrola americana*	60	Yes	FAC
2. *Maianthemum canadense*	50	Yes	FACU
3. *Vaccinium angustifolium*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	115	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	110	x 3 =	330
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	250 (A)		880 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-GAR-07_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 3/4	100					Silt Loam	
1 - 9	10YR 4/4	100					Silt Loam	
9 - 20	10YR 5/6	100					Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-07_UPL-2
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7436013 **Long:** -67.9147942 **Datum:** WGS84
Soil Map Unit Name: Medomak and Wonsqueak soils, frequently flooded **NWI classification:** PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-07_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	25	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Solidago rugosa*	40	Yes	FAC
2. *Euthamia graminifolia*	40	Yes	FAC
3. *Symphyotrichum novae-angliae*	25	No	FACW
4. *Vicia americana*	25	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	130	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	105	x 3 =	315
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	155	(A)	465 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-07_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 4/4	100					Loamy Sand	100% roadside fill

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Fill
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-07_UPL-3
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7428409 **Long:** -67.9142759 **Datum:** WGS84
Soil Map Unit Name: Masardis fine sandy loam, 8 to 15 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-07_UPL-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	70	Yes	FACU
2. *Abies balsamea*	50	Yes	FAC
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	130	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Corylus cornuta*	50	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Acer rubrum*	5	Yes	FAC
2. *Quercus rubra*	2	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	7	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	122	x 4 =	488
UPL species	0	x 5 =	0
Column Totals	187	(A)	683 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-GAR-07_UPL-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 4/4	100					Silt Loam	
12 - 20	10YR 6/4	100					Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-08_PSS-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.744364 **Long:** -67.9145368 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-08

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-08_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	50	Yes	FACW
2. *Prunus virginiana*	5	No	FACU
3. *Viburnum lentago*	2	No	FAC
4.			
5.			
6.			
7.			
	57	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Carex gynandra*	75	Yes	OBL
2. *Rubus hispidus*	60	Yes	FACW
3. *Cornus canadensis*	40	No	FAC
4. *Osmundastrum cinnamomeum*	25	No	FACW
5. *Scirpus cyperinus*	5	No	OBL
6. *Spiraea latifolia*	5	No	FACW
7. *Doellingeria umbellata*	2	No	FACW
8.			
9.			
10.			
11.			
12.			
	212	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	80	x 1 =	80
FACW species	142	x 2 =	284
FAC species	42	x 3 =	126
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	269	(A)	510 (B)

Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-08_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Silt Loam	
6 - 20	5YR 6/1	100					Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-08_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.744396 **Long:** -67.9142822 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-08_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	60	Yes	FAC
2. *Pinus strobus*	10	No	FACU
3. *Picea rubens*	10	No	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Kalmia latifolia*	30	Yes	FACU
2. *Viburnum nudum*	25	Yes	FACW
3. *Betula populifolia*	10	No	FAC
4. *Acer rubrum*	5	No	FAC
5. *Quercus rubra*	2	No	FACU
6.			
7.			
	72	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	60	Yes	FACU
2. *Rubus hispidus*	45	Yes	FACW
3. *Pyrola americana*	40	Yes	FAC
4. *Cornus canadensis*	15	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	160	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	130	x 3 =	390
FACU species	112	x 4 =	448
UPL species	0	x 5 =	0
Column Totals	312	(A)	978 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

The hydrophytic vegetation criterion has been met. However, due to the absence of wetland hydrology and/or hydric soils, this data point is within a non-wetland.

SOIL

Sampling Point: W-GAR-08_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loamy Sand	
2 - 14	7.5YR 5/6	100					Loamy Sand	
14 - 20	10YR 5/3	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-09_PEM-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Bog **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7456162 **Long:** -67.9150578 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-09

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-09_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	40	Yes	FAC
2. *Kalmia polifolia*	40	Yes	OBL
3. *Viburnum nudum*	10	No	FACW
4.			
5.			
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Eriophorum virginicum*	5	Yes	OBL
2. *Scirpus cyperinus*	5	Yes	OBL
3. *Spiraea alba*	5	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	50	x 1 =	50
FACW species	15	x 2 =	30
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	105	(A)	200 (B)

Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-09_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 2/2	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-09_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7457701 **Long:** -67.9147909 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-09_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula alleghaniensis*	20	Yes	FAC
2. *Pinus resinosa*	2	No	FACU
3.			
4.			
5.			
6.			
7.			
	22	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	75	Yes	FAC
2. *Gaylussacia baccata*	60	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	135	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	62	x 4 =	248
UPL species	0	x 5 =	0
Column Totals	157	(A)	533 (B)
Prevalence Index = B/A =	3.4		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

Unable to identify species due to absence of distinguishing characteristics. The indicator status of this species does not change the outcome of this data point since the species is not considered dominant.

SOIL

Sampling Point: W-GAR-09_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 5/3	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-10_PEM-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Bog **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7462372 **Long:** -67.9149884 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-10

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-10_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia polifolia*	50	Yes	OBL
2. *Chamaedaphne calyculata*	50	Yes	OBL
3. *Spiraea latifolia*	25	No	FACW
4. *Scirpus cyperinus*	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	127	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	102	x 1 =	102
FACW species	25	x 2 =	50
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	137	(A)	182 (B)
Prevalence Index = B/A =	1.3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-10_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-10_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7464252 **Long:** -67.9149518 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-10_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	15	Yes	FAC
2. *Prunus serotina*	10	Yes	FACU
3. *Viburnum nudum*	2	No	FACW
4.			
5.			
6.			
7.			
	27	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia latifolia*	80	Yes	FACU
2. *Pyrola americana*	70	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	150	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	85	x 3 =	255
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals	177	(A)	619 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-GAR-10_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Org matter Silt Loam	
3 - 4	10YR 5/1	100					Loamy Sand	
4 - 20	7.5YR 5/8	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-11_PEM-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7477335 **Long:** -67.9140138 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-11

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
✓ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
✓ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-11_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	25	Yes	FAC
2. *Betula populifolia*	20	Yes	FAC
3. *Viburnum nudum*	10	No	FACW
4.			
5.			
6.			
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Eriophorum virginicum*	20	Yes	OBL
2. *Scirpus cyperinus*	15	Yes	OBL
3. *Rubus hispidus*	15	Yes	FACW
4. *Acer rubrum*	5	No	FAC
5. *Vaccinium oxycoccos*	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	40	x 1 =	40
FACW species	25	x 2 =	50
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	115	(A)	240 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-11_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Mucky Silt Loam	
8 - 12	10YR 2/1	100					Mucky Sandy Loam	
12 - 20	7.5YR 4/4	100					Mucky Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-11_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7477762 **Long:** -67.9138574 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-11_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	40	Yes	FAC
2. *Alnus incana*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Comptonia peregrina*	40	Yes	UPL
2. *Pteridium aquilinum*	30	Yes	FACU
3. *Kalmia angustifolia*	25	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	65	x 3 =	195
FACU species	30	x 4 =	120
UPL species	40	x 5 =	200
Column Totals	160	(A)	565 (B)
Prevalence Index = B/A =	3.5		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

The hydrophytic vegetation criterion has been met. However, due to the absence of wetland hydrology and/or hydric soils, this data point is within a non-wetland.

SOIL

Sampling Point: W-GAR-11_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/3	100					Org matter Silt Loam	
3 - 16	10YR 4/6	100					Sandy Loam	
16 - 20	5YR 5/8	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-12_PFO-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7478607 **Long:** -67.9139333 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-12

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-12_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	80	Yes	FAC
2. *Betula populifolia*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum lentago*	30	Yes	FAC
2. *Corylus cornuta*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	75	Yes	FAC
2. *Rubus hispidus*	50	Yes	FACW
3. *Maianthemum canadense*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	135	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	195	x 3 =	585
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	270	(A)	785 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-12_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100					Mucky Silt Loam	
6 - 20	10YR 5/1	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
✓ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-12_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7482565 **Long:** -67.9138946 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-12_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	50	Yes	FAC
2. *Pinus resinosa*	40	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Corylus cornuta*	15	Yes	FACU
2. *Viburnum nudum*	10	Yes	FACW
3. *Acer rubrum*	2	No	FAC
4.			
5.			
6.			
7.			
	27	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia latifolia*	40	Yes	FACU
2. *Pyrola americana*	15	Yes	FAC
3. *Vaccinium angustifolium*	15	Yes	FACU
4. *Pteridium aquilinum*	15	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	67	x 3 =	201
FACU species	125	x 4 =	500
UPL species	0	x 5 =	0
Column Totals	202	(A)	721 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-GAR-12_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	7.5YR 3/4	100					Silt Loam	
12 - 20	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-13_PFO-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7475672 **Long:** -67.9148258 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-GAR-13

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-13_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	70	Yes	FAC
2. *Betula populifolia*	5	No	FAC
3. *Picea rubens*	5	No	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum lentago*	50	Yes	FAC
2. *Acer rubrum*	10	No	FAC
3. *Kalmia angustifolia*	10	No	FAC
4.			
5.			
6.			
7.			
	70	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Rubus hispidus*	15	Yes	FACW
2. *Acer rubrum*	2	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	17	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply By:
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	147	x 3 =	441
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	167	(A)	491 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-GAR-13_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Mucky Peat	
8 - 20	10YR 2/1	100					Mucky Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-GAR-13_UPL-1
Investigator(s): Greg Russo, Matthew Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7479703 **Long:** -67.914843 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-GAR-13_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	75	Yes	FAC
2. *Pinus resinosa*	20	No	FACU
3. *Pinus strobus*	5	No	FACU
4. *Betula populifolia*	5	No	FAC
5.			
6.			
7.			
	105	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum lentago*	25	Yes	FAC
2. *Acer rubrum*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Maianthemum racemosum*	20	Yes	FACU
2. *Rubus hispidus*	5	No	FACW
3. *Cornus canadensis*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	115	x 3 =	345
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	165	(A)	535 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

The hydrophytic vegetation criterion has been met. However, due to the absence of wetland hydrology and/or hydric soils, this data point is within a non-wetland.

SOIL

Sampling Point: W-GAR-13_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/1	100					Silt Loam	
10 - 16	10YR 5/1	100					Sandy Clay Loam	
16 - 20	7.5YR 4/4	100					Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia Falls, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-01_PSS-1
Investigator(s): Joe Roy, Gabriel Pelletier, Molly Lennon **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7762957 **Long:** -67.7877261 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-01

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-01_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	2	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	2	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	80	Yes	FACW
2. *Vaccinium corymbosum*	5	No	FACW
3. *Betula populifolia*	1	No	FAC
4.			
5.			
6.			
7.			
	86	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	3	x 3 =	9
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	88	(A)	179 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-01_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Fine Sandy Loam	
1 - 18	10YR 5/2	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** M E **Sampling Point:** W-JMR-01_UPL-2
Investigator(s): Joseph Roy, Gabriel Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7761927 **Long:** -67.7876964 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- _x_ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No x	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	2	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-01_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	50	Yes	FACU
2. *Acer rubrum*	25	Yes	FAC
3. *Betula populifolia*	3	No	FAC
4.			
5.			
6.			
7.			
	78	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	10	Yes	FACU
2. *Quercus rubra*	5	Yes	FACU
3. *Acer rubrum*	5	Yes	FAC
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	50	Yes	FAC
2. *Pteridium aquilinum*	10	No	FACU
3. *Aralia nudicaulis*	10	No	FACU
4. *Cornus canadensis*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	88	x 3 =	264
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals	173	(A)	604 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-01_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 4	10YR 5/2	100					Fine Sandy Loam	
4 - 14	7.5YR 3/4	100					Fine Sandy Loam	
14 - 18	7.5YR 4/6	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-02_PEM-1
Investigator(s): Joseph Roy, Gabriel Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7670357 **Long:** -67.8231097 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-02

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	2
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-02_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2. *Acer rubrum*	5	Yes	FAC
3. *Symphyotrichum lanceolatum*	5	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	25	(A)	60 (B)
Prevalence Index = B/A =	2.4		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-02_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Fine Sandy Loam	
1 - 8	10YR 5/2	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocky substrate
Depth (inches): 8

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-02_UPL-2
Investigator(s): Joseph Roy, Gabriel Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7670743 **Long:** -67.8230868 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-02_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Acer rubrum*	5	Yes	FAC
2. *Pteridium aquilinum*	5	Yes	FACU
3. *Populus tremuloides*	2	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	12	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals	12	(A)	43 (B)
Prevalence Index = B/A =	3.6		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

Recent logging activity.

SOIL

Sampling Point: W-JMR-02_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	7.5YR 2.5/1	100					Sandy Loam	
1 - 4	7.5YR 3/3	100					Loamy Sand	
4 - 8	7.5YR 4/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-03_PEM-5
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): undetermined **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.770235 **Long:** -67.8201025 **Datum:** WGS84
Soil Map Unit Name: Sebago and Moosabec soils **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-03_PEM-5

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	25	Yes	FACW
2. *Picea mariana*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	45	Yes	FAC
2. *Rhododendron groenlandicum*	20	Yes	OBL
3. *Viburnum nudum*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	20	x 1 =	20
FACW species	40	x 2 =	80
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	105	(A)	235 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-03_PEM-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 30	10YR 2/2	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-03_PFO-1
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7670779 **Long:** -67.8231679 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	10

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-03_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	80	Yes	FAC
2. *Abies balsamea*	1	No	FAC
3. *Betula populifolia*	1	No	FAC
4.			
5.			
6.			
7.			
	82	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2. *Abies balsamea*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	65	Yes	FACW
2. *Cornus canadensis*	2	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	67	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	94	x 3 =	282
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	159	(A)	412 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

SOIL

Sampling Point: W-JMR-03_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Fine Sandy Loam	
3 - 18	10YR 5/2	98	10YR 4/4	2	D	RM	Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-03_PFO-3
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7725005 **Long:** -67.8195626 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):			
Water Table Present?	Yes ✓ No ____	Depth (inches):	6	**Wetland Hydrology Present?**	Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	2		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-03_PFO-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	20	Yes	FAC
2. *Acer rubrum*	10	Yes	FAC
3. *Thuja occidentalis*	10	Yes	FACW
4. *Pinus strobus*	10	Yes	FACU
5.			
6.			
7.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Abies balsamea*	25	Yes	FAC
2. *Osmundastrum cinnamomeum*	20	Yes	FACW
3. *Coptis trifolia*	5	No	FACW
4. *Pteridium aquilinum*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	60	x 3 =	180
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	110	(A)	310 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-03_PFO-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Hemic Muck	
2 - 4	10YR 4/1	100					Loamy Sand	
4 - 12	10YR 5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
✓ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ✓ No ___

Remarks: NE-A2 - Dark Muck or Mucky Peat

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-03_UPL-2
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7670821 **Long:** -67.8230504 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-03_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	80	Yes	FAC
2. *Quercus rubra*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	15	Yes	FAC
2. *Quercus rubra*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Aralia nudicaulis*	10	Yes	FACU
2. *Pteridium aquilinum*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals	130 (A)		425 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-03_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Fine Sandy Loam	
2 - 4	10YR 5/2	100					Fine Sandy Loam	
4 - 12	7.5YR 4/4	100					Fine Sandy Loam	
12 - 18	7.5YR 6/4	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-03_UPL-4
Investigator(s): Thomas Errico, Kate H, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.772605 **Long:** -67.8196816 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-03_UPL-4

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	60	Yes	FACU
2. *Abies balsamea*	20	Yes	FAC
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	5	Yes	FACU
2. *Abies balsamea*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	25	Yes	FACU
2. *Vaccinium angustifolium*	15	Yes	FACU
3. *Cornus canadensis*	15	Yes	FAC
4. *Trientalis borealis*	10	No	FAC
5. *Maianthemum canadense*	5	No	FACU
6. *Clintonia borealis*	3	No	FAC
7. *Acer rubrum*	2	No	FAC
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals	170 (A)		620 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-03_UPL-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 5	10YR 3/3	100					Sandy Loam	
5 - 20	2.5Y 5/3	100					Loamy Sand	Coarse

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-04_PFO-2
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Toe **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7646989 **Long:** -67.8265036 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-04

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-04_PFO-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	80	Yes	FAC
2. *Betula populifolia*	15	No	FAC
3.			
4.			
5.			
6.			
7.			
	95	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Kalmia angustifolia*	35	Yes	FAC
2. *Viburnum nudum*	15	Yes	FACW
3. *Acer rubrum*	15	Yes	FAC
4.			
5.			
6.			
7.			
	65	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	145	x 3 =	435
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	160 (A)		465 (B)
Prevalence Index = B/A =	2.9		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC). A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

SOIL

Sampling Point: W-JMR-04_PFO-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100					Loam	
6 - 12	10YR 5/1	100					Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-04_PSS-3
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Bog **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7684733 **Long:** -67.8211741 **Datum:** WGS84
Soil Map Unit Name: Sebago and Moosabec soils **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-04

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-04_PSS-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Nemopanthus mucronatus*	80	Yes	OBL
2. *Acer rubrum*	5	No	FAC
3. *Ilex verticillata*	5	No	FACW
4.			
5.			
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	80	x 1 =	80
FACW species	5	x 2 =	10
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	100 (A)		135 (B)

Prevalence Index = B/A = 1.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC). A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

SOIL

Sampling Point: W-JMR-04_PSS-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 2/2	100					Org matter Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Cherryfield, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-04_UPL-1
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7646699 **Long:** -67.8264616 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-04_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	25	Yes	FAC
2. *Quercus rubra*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	10	Yes	FAC
2. *Kalmia angustifolia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Comptonia peregrina*	35	Yes	UPL
2. *Rubus idaeus*	20	Yes	FACU
3. *Gaylussacia baccata*	15	No	FACU
4. *Vaccinium angustifolium*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	55	x 4 =	220
UPL species	35	x 5 =	175
Column Totals	130	(A)	515 (B)
Prevalence Index = B/A =	4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-04_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 10	7.5YR 4/4	100					Fine Sandy Loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-04_UPL-4
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7685236 **Long:** -67.8212875 **Datum:** WGS84
Soil Map Unit Name: Sebago and Moosabec soils **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-04_UPL-4

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	5	Yes	FACU
2. *Pinus resinosa*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	75	Yes	FACU
2. *Gaylussacia baccata*	25	Yes	FACU
3. *Comptonia peregrina*	5	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	110	x 4 =	440
UPL species	5	x 5 =	25
Column Totals	115	(A)	465 (B)
Prevalence Index = B/A =	4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-JMR-04_UPL-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Org matter Loam	
1 - 10	10YR 4/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-05_PEM-1
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7651277 **Long:** -67.8319848 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-05

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-05_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Spiraea alba*	10	Yes	FACW
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	75	Yes	OBL
2. *Rosa virginiana*	15	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	75	x 1 =	75
FACW species	10	x 2 =	20
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	105 (A)		155 (B)
Prevalence Index = B/A =	1.5		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-05_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Org matter Loam	
4 - 18	10YR 4/1	100					Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
X Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None
Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-05_UPL-2
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7653268 **Long:** -67.8319782 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present. Circumstances are not normal due to agricultural activities.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-05_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Quercus rubra*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Rubus idaeus*	60	Yes	FACU
2. *Viburnum nudum*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	50	x 3 =	150
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals	145	(A)	520 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-JMR-05_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Org matter Loam	
2 - 10	10YR 4/1	100					Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

soil disturbed due to filling and agricultural activities. soil is similar to that found in wetland.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-06_PEM-1
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7784226 **Long:** -67.8108391 **Datum:** WGS84
Soil Map Unit Name: Scantic-Biddeford complex, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-06

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-06_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	80	Yes	OBL
2. *Spiraea tomentosa*	15	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	80	x 1 =	80
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	95 (A)		110 (B)
Prevalence Index = B/A =	1.2		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-06_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Org matter Loam	
2 - 6	10YR 5/1	100					Sandy Clay Loam	
6 - 18	10YR 5/1	60	10YR 4/6	30	C	M	Fine Sandy Clay	
6 - 18			5Y 6/1	10	D	M		

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-06_PFO-3
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7780795 **Long:** -67.8117915 **Datum:** WGS84
Soil Map Unit Name: Scantic-Biddeford complex, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-06

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	8	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-06_PFO-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	70	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	15	Yes	FACW
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	75	x 3 =	225
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	90	(A)	255 (B)
Prevalence Index = B/A =	2.8		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-06_PFO-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Org matter Loam	
3 - 5	10YR 4/1	100					Sandy Loam	
5 - 18	10YR 5/2	95	10YR 4/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-06_UPL-2
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7786663 **Long:** -67.8109972 **Datum:** WGS84
Soil Map Unit Name: Scantic-Biddeford complex, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-06_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	20	Yes	FAC
2. *Picea rubens*	10	Yes	FACU
3. *Acer rubrum*	10	Yes	FAC
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	45	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pinus strobus*	5	Yes	FACU
2. *Abies balsamea*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	55	(A)	185 (B)
Prevalence Index = B/A =	3.4		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-06_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 3	10YR 6/1	100					Fine Sandy Loam	
3 - 18	2.5YR 5/4	100					Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-06_UPL-4
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7780434 **Long:** -67.8120118 **Datum:** WGS84
Soil Map Unit Name: Scantic-Biddeford complex, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-06_UPL-4

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	15	Yes	FAC
2. *Quercus rubra*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Aralia nudicaulis*	10	Yes	FACU
2. *Abies balsamea*	5	Yes	FAC
3. *Pteridium aquilinum*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	45	(A)	160 (B)
Prevalence Index = B/A =	3.6		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-06_UPL-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 3	10YR 5/2	100					Loam	
3 - 7	10YR 3/6	100					Loamy Sand	
7 - 18	10YR 5/6	100					Loamy Sand	
-								
-								
-								
-								
-								
-								
-								

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-07_PFO-1
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7767116 **Long:** -67.8150284 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-07

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-07_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja occidentalis*	50	Yes	FACW
2. *Abies balsamea*	25	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	15	Yes	FAC
2. *Thuja occidentalis*	10	Yes	FACW
3. *Acer rubrum*	10	Yes	FAC
4. *Quercus rubra*	1	No	FACU
5.			
6.			
7.			
	36	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Abies balsamea*	15	Yes	FAC
2. *Thuja occidentalis*	10	Yes	FACW
3. *Acer rubrum*	10	Yes	FAC
4. *Cornus canadensis*	1	No	FAC
5. *Osmundastrum cinnamomeum*	1	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	37	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	8	(A)
Total Number of Dominant Species Across All Strata:	8	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	71	x 2 =	142
FAC species	76	x 3 =	228
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column Totals	148	(A)	374 (B)
Prevalence Index = B/A =	2.5		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-07_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Org matter Loam	
2 - 4	10YR 5/2	100					Loamy Sand	
4 - 12	10YR 5/2	90	10YR 5/8	5	C	M	Loamy Sand	
4 - 12	10YR 6/2	5			D	M		

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
✓ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-07_UPL-2
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7768741 **Long:** -67.8146741 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-07_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	5	Yes	FAC
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Picea rubens*	15	Yes	FACU
3. *Aralia nudicaulis*	10	No	FACU
4. *Cornus canadensis*	5	No	FAC
5. *Abies balsamea*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals	75	(A)	280 (B)
Prevalence Index = B/A =	3.7		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-07_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Mucky Loam	
2 - 4	10YR 4/1	100					Loamy Sand	
4 - 6	10YR 3/6	100					Loamy Sand	
6 - 12	10YR 5/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-08_PFO-1
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7745076 **Long:** -67.8177069 **Datum:** WGS84
Soil Map Unit Name: Colton-Hermon complex, 3 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-08

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
✓ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-08_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	30	Yes	FAC
2. *Acer rubrum*	25	Yes	FAC
3. *Thuja occidentalis*	1	No	FACW
4.			
5.			
6.			
7.			
	56	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Abies balsamea*	20	Yes	FAC
2. *Acer rubrum*	5	No	FAC
3. *Cornus canadensis*	1	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	26	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	1	x 2 =	2
FAC species	81	x 3 =	243
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	82	(A)	245 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-08_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Fibric Loam	
2 - 6	10YR 5/2	100					Sand	
6 - 18	10YR 5/2	90	10YR 5/6	10	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
✓ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-08_UPL-2
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7742058 **Long:** -67.818422 **Datum:** WGS84
Soil Map Unit Name: Colton-Hermon complex, 3 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-08_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	10	Yes	FAC
2. *Picea rubens*	10	Yes	FACU
3. *Betula papyrifera*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2. *Abies balsamea*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Aralia nudicaulis*	10	Yes	FACU
2. *Mitchella repens*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	28.6	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals	55	(A)	205 (B)
Prevalence Index = B/A =	3.7		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-08_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 4	10YR 5/8	100					Org matter Loamy Sand	
4 - 12	10YR 4/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-09_PEM-2
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo, Joe Roy, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7675698 **Long:** -67.843895 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-09

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. water impounded by road. poor drainage with culvert. water overflow across road as njd. Culvert blocked and water impounded. Unnaturally high 16in. overflow across road in some areas. .

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ✓ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	16
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-09_PEM-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	5	Yes	FAC
2. *Pinus strobus*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	20	Yes	OBL
2. *Carex sp.*	15	Yes	NI
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	20	x 1 =	20
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	35 (A)		70 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-09_PEM-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 5/1	100					Gravelly Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
_✓_ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock/Gravel
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Due to inundation a clear soil profile was unobtainable. Soils are assumed to be hydric. Inundated soils.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-09_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo, Joe Roy, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7675438 **Long:** -67.8408258 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-09

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Ditches/drain tiles observed. Roadside wetland, water impounded by road and semi effective culvert.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ✓ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	3	
Water Table Present?	Yes ✓ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-09_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Betula populifolia*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	20	Yes	FACW
2. *Acer rubrum*	5	No	FAC
3. *Betula populifolia*	5	No	FAC
4. *Kalmia angustifolia*	5	No	FAC
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	25	Yes	OBL
2. *Rubus hispidus*	10	Yes	FACW
3. *Kalmia angustifolia*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	25	x 1 =	25
FACW species	30	x 2 =	60
FAC species	70	x 3 =	210
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	125 (A)		295 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-09_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Muck	
2 - 12	2.5Y 5/2	95	10YR 3/6	5	C	M	Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-09_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo, Joe Roy, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7675112 **Long:** -67.8407264 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-09_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	70	Yes	FACU
2. *Acer rubrum*	5	No	FAC
3. *Quercus rubra*	5	No	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	20	Yes	FACU
2. *Viburnum nudum*	15	Yes	FACW
3. *Acer rubrum*	10	Yes	FAC
4.			
5.			
6.			
7.			
	45	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Maianthemum canadense*	5	Yes	FACU
2. *Vaccinium angustifolium*	5	Yes	FACU
3. *Cornus canadensis*	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	42.9	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	20	x 3 =	60
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals	140	(A)	510 (B)
Prevalence Index = B/A =	3.6		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-09_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 5	10YR 4/2	100					Loamy Sand	coarse
5 - 10	10YR 3/3	100					Loamy Sand	Coarse

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-09_UPL-2
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo, Joe Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Road shoulder **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.767218 **Long:** -67.8438105 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Plot done on roadside edge.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-09_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	10	Yes	OBL
2. *Rubus allegheniensis*	3	Yes	FACU
3. *Pteridium aquilinum*	2	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	15	(A)	30 (B)
Prevalence Index = B/A =	2		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No _✓_

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-09_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 11	10YR 3/3	100					Gravelly Loamy Sand	Roadside fill

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock/fill
Depth (inches): 11

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-10_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo, Joe Roy, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7707524 **Long:** -67.9223605 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 15 to 70 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-10

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Potential WOSS within 25' of perennial stream.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	2	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-10_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	55	Yes	FAC
2. *Betula populifolia*	20	Yes	FAC
3. *Picea rubens*	5	No	FACU
4. *Populus tremuloides*	5	No	FACU
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	15	Yes	FAC
2. *Viburnum nudum*	5	Yes	FACW
3. *Picea rubens*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Maianthemum canadense*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	90	x 3 =	270
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	115	(A)	360 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-10_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 4	2.5Y 4/1	100					Fine Loamy Sand	
4 - 12	2.5Y 6/1	100					Fine Loamy Sand	
12 - 15	7.5YR 2.5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 15

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-10_UPL-2
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** None **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.770702 **Long:** -67.9222518 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 15 to 70 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-10_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Pinus strobus*	25	Yes	FACU
3. *Picea rubens*	10	No	FACU
4. *Betula populifolia*	5	No	FAC
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Maianthemum canadense*	20	Yes	FACU
2. *Vaccinium angustifolium*	5	No	FACU
3. *Aralia nudicaulis*	5	No	FACU
4. *Quercus rubra*	2	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	32	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	67	x 4 =	268
UPL species	0	x 5 =	0
Column Totals	102	(A)	373 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-10_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	2.5Y 3/2	100					Fine Loamy Sand	
2 - 4	2.5Y 4/2	100					Fine Sandy Loam	
4 - 8	2.5Y 4/3	90	10YR 4/6	10	C		Fine Sandy Loam	
8 - 18	2.5YR 3/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-11_PEM-1
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7668542 **Long:** -67.9288281 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-11

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-11_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Chamaedaphne calyculata*	95	Yes	OBL
2. *Myrica gale*	5	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	100	(A)	100 (B)
Prevalence Index = B/A =	1		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-11_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1						Muck	
8 - 15	7.5YR 4/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
✓ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-11_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo, Joe Roy, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.767014 **Long:** -67.9285756 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-11

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ✓ No ____	Depth (inches):	1
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-11_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Betula populifolia*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	30	Yes	FACW
2. *Betula populifolia*	5	No	FAC
3. *Acer rubrum*	5	No	FAC
4. *Viburnum nudum*	5	No	FACW
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	40	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	40	x 1 =	40
FACW species	35	x 2 =	70
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	135 (A)		290 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-11_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/2	100					Muck	
8 - 9	10YR 2/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
✓ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 9

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-11_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo, Joe Roy, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Road shoulder **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7669802 **Long:** -67.9286962 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-11_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	20	Yes	FAC
2. *Acer rubrum*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	20	Yes	FAC
2. *Nemopanthus mucronatus*	5	Yes	OBL
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus hispidus*	70	Yes	FACW
2. *Kalmia angustifolia*	10	No	FAC
3. *Gaylussacia baccata*	5	No	FACU
4. *Spiraea alba*	3	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	88	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	73	x 2 =	146
FAC species	65	x 3 =	195
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	148	(A)	366 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-11_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/3	100					Sandy Loam	
3 - 5	10YR 2/1	100					Sandy Loam	
5 - 8	5Y 7/1	100					Sandy Loam	
8 - 9	2.5Y 4/3	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 9

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** , Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-11_UPL-2
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7668902 **Long:** -67.9288952 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-11_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	30	Yes	FACU
2. *Betula populifolia*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	5	Yes	FACW
2. *Betula populifolia*	5	Yes	FAC
3. *Vaccinium corymbosum*	2	No	FACW
4.			
5.			
6.			
7.			
	12	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus hispidus*	30	Yes	FACW
2. *Kalmia angustifolia*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	37	x 2 =	74
FAC species	30	x 3 =	90
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	97	(A)	284 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-11_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/3	100					Sandy Loam	
3 - 5	10YR 2/1	100					Sandy Loam	
5 - 9	2.5Y 6/1	100					Sandy Loam	
9 - 14	7.5YR 2.5/3	100					Sandy Loam	
14 - 20	7.5YR 3/4	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-12_PEM-1
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Perennial Stream **Local relief (concave, convex, none):** None **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7762967 **Long:** -67.9298489 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-12

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-12_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	15	Yes	OBL
2. *Euthamia graminifolia*	15	Yes	FAC
3. *Spiraea tomentosa*	10	No	FACW
4. *Lysimachia terrestris*	5	No	OBL
5. *Alnus incana*	3	No	FACW
6. *Dulichium arundinaceum*	3	No	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	51	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	23	x 1 =	23
FACW species	13	x 2 =	26
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	51 (A)		94 (B)
Prevalence Index = B/A =	1.8		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-12_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Mucky Loamy Sand	
4 - 7	10YR 4/2	100					Fine Sand	
7 - 18	10YR 2/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
✓ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-12_PSS-3
Investigator(s): Thomas Errico, Kate H, Greg R, Joe R, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7759893 **Long:** -67.9297297 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-12

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
✓ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	4

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-12_PSS-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	85	Yes	FACW
2. *Rosa palustris*	5	No	OBL
3. *Corylus cornuta*	3	No	FACU
4.			
5.			
6.			
7.			
	93	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	35	Yes	OBL
2. *Carex sp.*	35	Yes	NI
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	40	x 1 =	40
FACW species	85	x 2 =	170
FAC species	0	x 3 =	0
FACU species	3	x 4 =	12
UPL species	0	x 5 =	0
Column Totals	128	(A)	222 (B)
Prevalence Index = B/A =	1.7		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-12_PSS-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Gravelly Loamy Sand	
3 - 7	10YR 2/1	100					Muck	
7 - 12	10YR 4/1	95	10YR 3/6	5	C	M	Mucky Sandy Loam	
12 - 20	10YR 2/2	100					Gravelly Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-12_UPL-2
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7763429 **Long:** -67.9297874 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-12_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus banksiana*	30	Yes	FACU
2. *Betula populifolia*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	15	Yes	FACU
2. *Aronia melanocarpa*	10	Yes	FAC
3. *Spiraea alba*	10	Yes	FACW
4. *Pteridium aquilinum*	10	Yes	FACU
5. *Calamagrostis canadensis*	10	Yes	OBL
6. *Rubus hispidus*	2	No	FACW
7. *Nabalus altissimus*	2	No	FACU
8. *Solidago rugosa*	2	No	FAC
9.			
10.			
11.			
12.			
	61	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	10	x 1 =	10
FACW species	12	x 2 =	24
FAC species	22	x 3 =	66
FACU species	57	x 4 =	228
UPL species	0	x 5 =	0
Column Totals	101 (A)		328 (B)
Prevalence Index = B/A =	3.2		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

The hydrophytic vegetation criterion has been met. However, due to the absence of wetland hydrology and/or hydric soils, this data point is within a non-wetland.

SOIL

Sampling Point: W-JMR-12_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loamy Sand	
2 - 4	10YR 5/1	100					Loamy Sand	
4 - 16	7.5YR 4/6	100					Sand	
16 - 20	10YR 4/4	100					Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-12_UPL-4
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo, Joe Roy, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7759576 **Long:** -67.9297709 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-12_UPL-4

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	30	Yes	FAC
2. *Pinus resinosa*	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	20	Yes	FAC
2. *Corylus cornuta*	10	Yes	FACU
3. *Viburnum nudum*	10	Yes	FACW
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	35	Yes	FAC
2. *Pteridium aquilinum*	10	No	FACU
3. *Vaccinium angustifolium*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	85	x 3 =	255
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals	150	(A)	495 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-12_UPL-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/3	100					Sandy Loam	
6 - 10	10YR 3/2	100					Sandy Loam	
10 - 14	10YR 5/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 14

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-13_PFO-3
Investigator(s): Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7719044 **Long:** -67.9172021 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-13

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	2	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-13_PFO-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	70	Yes	FAC
2. *Pinus strobus*	15	No	FACU
3. *Picea rubens*	5	No	FACU
4. *Betula populifolia*	2	No	FAC
5.			
6.			
7.			
	94	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Nemopanthus mucronatus*	30	Yes	OBL
2. *Alnus incana*	30	Yes	FACW
3. *Viburnum nudum*	5	No	FACW
4.			
5.			
6.			
7.			
	65	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Acer rubrum*	2	No	FAC
2. *Vaccinium angustifolium*	2	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	4	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	30	x 1 =	30
FACW species	35	x 2 =	70
FAC species	74	x 3 =	222
FACU species	22	x 4 =	88
UPL species	0	x 5 =	0
Column Totals	161	(A)	410 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-13_PFO-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 2/1						Mucky Silt Loam	organic matter

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
✓ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-13_PSS-1
Investigator(s): Gabriel Pelletier, GJP, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7715048 **Long:** -67.9174131 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-13

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	1	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-13_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus grandidentata*	10	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3. *Pinus strobus*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Populus grandidentata*	55	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3. *Pinus strobus*	10	No	FACU
4.			
5.			
6.			
7.			
	95	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Rubus hispidus*	90	Yes	FACW
2. *Pteridium aquilinum*	25	No	FACU
3. *Osmundastrum cinnamomeum*	10	No	FACW
4. *Scirpus cyperinus*	5	No	OBL
5. *Populus grandidentata*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	135	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	100	x 2 =	200
FAC species	35	x 3 =	105
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals	250	(A)	750 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-13_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/2	100					Mucky Silt Loam	
8 - 12	10YR 2/1	100					Mucky Silt Loam	
12 - 16	2.5YR 5/1	80	10YR 4/4	20			Sandy Loam	
16 - 20	2.5YR 5/3	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
_✓_ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-13_UPL-2
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo, Joe Roy, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Road shoulder **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7719991 **Long:** -67.9169764 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Road shoulder.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-13_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	15	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3. *Populus grandidentata*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Prunus virginiana*	10	Yes	FACU
2. *Betula populifolia*	10	Yes	FAC
3. *Salix bebbiana*	3	No	FACW
4.			
5.			
6.			
7.			
	23	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus hispidus*	10	Yes	FACW
2. *Apocynum cannabinum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	13	x 2 =	26
FAC species	20	x 3 =	60
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	63	(A)	206 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-13_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 11	10YR 3/3	100					Gravelly Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock/gravel/fill
Depth (inches): 11

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-13_UPL-4
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo, Joe Roy, **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7714701 **Long:** -67.9172568 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** ✓
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-13_UPL-4

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus grandidentata*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Populus grandidentata*	60	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus hispidus*	65	Yes	FACW
2. *Pteridium aquilinum*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	0	x 3 =	0
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals	155	(A)	490 (B)
Prevalence Index = B/A =	3.2		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-13_UPL-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Sandy Loam	
2 - 5	10YR 5/1	100					Loamy Sand	
5 - 8	10YR 3/3	100					Gravelly Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-14_PSS-3
Investigator(s): Gabe Pelletier, Joe roy, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7788579 **Long:** -67.8049314 **Datum:** WGS84
Soil Map Unit Name: Bucksport and Wonsqueak mucks, 0 to 2 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-14

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	2
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-14_PSS-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Larix laricina*	20	Yes	FACW
2. *Betula populifolia*	20	Yes	FAC
3. *Acer rubrum*	10	Yes	FAC
4.			
5.			
6.			
7.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	40	Yes	FACW
2. *Kalmia angustifolia*	30	Yes	FAC
3. *Larix laricina*	15	No	FACW
4. *Betula populifolia*	15	No	FAC
5.			
6.			
7.			
	100	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	70	Yes	OBL
2. *Kalmia angustifolia*	15	No	FAC
3. *Rosa virginiana*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	6	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	70	x 1 =	70
FACW species	75	x 2 =	150
FAC species	95	x 3 =	285
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	240 (A)		505 (B)
Prevalence Index = B/A =	2.1		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-14_PSS-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 36	10YR 2/2	100					Hemic Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-14_PFO-1
Investigator(s): Gabe Pelletier, Joe Roy, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.779424 **Long:** -67.8023716 **Datum:** WGS84
Soil Map Unit Name: Scantic-Biddeford complex, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-14

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
✓ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-14_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	70	Yes	FAC
2. *Betula populifolia*	40	Yes	FAC
3. *Larix laricina*	5	No	FACW
4. *Prunus virginiana*	1	No	FACU
5.			
6.			
7.			
	116	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	90	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Acer rubrum*	30	Yes	FAC
2. *Cornus canadensis*	25	Yes	FAC
3. *Kalmia angustifolia*	15	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	180	x 3 =	540
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column Totals	276 (A)		734 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-14_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Silt Loam	
4 - 20	2.5Y 6/1	95	2.5Y 6/6	5	C	M	Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Columbia, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-14_UPL-2
Investigator(s): Gabe Pelletier, Joe roy, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7792122 **Long:** -67.8024156 **Datum:** WGS84
Soil Map Unit Name: Bucksport and Wonsqueak mucks, 0 to 2 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-14_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Betula populifolia*	40	Yes	FAC
3. *Populus tremuloides*	20	No	FACU
4.			
5.			
6.			
7.			
	120	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	50	Yes	FACU
2. *Kalmia angustifolia*	30	Yes	FAC
3. *Acer rubrum*	5	No	FAC
4. *Prunus virginiana*	5	No	FACU
5.			
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaylussacia baccata*	20	Yes	FACU
2. *Kalmia angustifolia*	20	Yes	FAC
3. *Pteridium aquilinum*	20	Yes	FACU
4. *Aralia nudicaulis*	20	Yes	FACU
5. *Rubus hispidus*	5	No	FACW
6. *Vaccinium angustifolium*	5	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	155	x 3 =	465
FACU species	140	x 4 =	560
UPL species	0	x 5 =	0
Column Totals	300	(A)	1035 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-14_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loamy Sand	
1 - 4	7.5YR 4/4	100					Loamy Sand	
4 - 11	10YR 5/8	100					Sand	
11 - 20	10YR 5/6	100					Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-15_PSS-1
Investigator(s): Chuck Ferris, Joe roy, Derek Benedix, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7135828 **Long:** -67.8914886 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-15

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-15_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Chamaedaphne calyculata*	70	Yes	OBL
2. *Rhododendron canadense*	20	No	FACW
3. *Rhododendron groenlandicum*	15	No	OBL
4.			
5.			
6.			
7.			
	105	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia polifolia*	5	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	90	x 1 =	90
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	110	(A)	130 (B)

Prevalence Index = B/A = 1.2

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-15_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 48	10YR 2/2	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-15_UPL-2
Investigator(s): Chuck Ferris, Gabe Pelletier, Joe Roy, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7178162 **Long:** -67.8971126 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-15_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	35	Yes	FACU
2. *Pinus resinosa*	15	Yes	FACU
3. *Betula populifolia*	10	No	FAC
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	65	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	45	Yes	FACU
2. *Kalmia angustifolia*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	160	x 4 =	640
UPL species	0	x 5 =	0
Column Totals	175	(A)	685 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-15_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 6	10YR 4/6	100					Sandy Loam	
6 - 16	10YR 5/8	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Cherryfield, Washington County **Sampling Date:** 2019-Sept-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-16_PEM-1
Investigator(s): Gabe Pelletier, Chuck ferris, derek benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 10 to 20
Subregion (LRR or MLRA): LRR R **Lat:** 44.7175726 **Long:** -67.9153702 **Datum:** WGS84
Soil Map Unit Name: Masardis-Adams complex, 15 to 70 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-16

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
✓ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
✓ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	2
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-16_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2. *Viburnum nudum*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	50	Yes	OBL
2. *Acer rubrum*	25	Yes	FAC
3. *Acer rubrum*	25	Yes	FAC
4. *Spiraea alba*	20	No	FACW
5. *Agrostis gigantea*	20	No	FACW
6. *Glyceria canadensis*	20	No	OBL
7. *Solidago rugosa*	5	No	FAC
8. *Onoclea sensibilis*	5	No	FACW
9.			
10.			
11.			
12.			
	170	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	70	x 1 =	70
FACW species	50	x 2 =	100
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	180 (A)		350 (B)
Prevalence Index = B/A =	1.9		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-16_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100					Mucky Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
_✓_ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-16_UPL-2
Investigator(s): Chuck Ferris, derek benedix , Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 10 to 15
Subregion (LRR or MLRA): LRR R **Lat:** 44.7181452 **Long:** -67.9151491 **Datum:** WGS84
Soil Map Unit Name: Masardis-Adams complex, 15 to 70 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-16_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	35	Yes	FACU
2. *Quercus rubra*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer saccharum*	30	Yes	FACU
2. *Viburnum nudum*	15	Yes	FACW
3. *Quercus rubra*	5	No	FACU
4.			
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	25	Yes	FACU
2. *Cornus canadensis*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	5	x 3 =	15
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals	125 (A)		465 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-16_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 3	10YR 6/2	100					Sandy Loam	
3 - 16	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-17_PEM-1
Investigator(s): Joe Roy, Gabe Pelletier , Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7706268309 **Long:** -67.8691097629 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:** PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-17

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- _✓_ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	1
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-17_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	80	Yes	OBL
2. *Osmundastrum cinnamomeum*	30	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	110	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	80	x 1 =	80
FACW species	50	x 2 =	100
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	150 (A)		240 (B)
Prevalence Index = B/A =	1.6		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-17_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Peat	
4 - 20	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-17_PFO-3
Investigator(s): Joe Roy, Gabe Pelletier , Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7708668886 **Long:** -67.8691075836 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-17

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- _✓_ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- _✓_ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	2
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-17_PFO-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	25	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	50	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	125 (A)		300 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-17_PFO-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-17_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.770823638 **Long:** -67.8694220726 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-17_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	50	Yes	FACU
2. *Acer pensylvanicum*	15	Yes	FACU
3. *Populus tremuloides*	10	No	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Kalmia angustifolia*	20	Yes	FAC
2. *Pinus strobus*	10	Yes	FACU
3. *Viburnum nudum*	5	No	FACW
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	50	Yes	FAC
2. *Pteridium aquilinum*	20	Yes	FACU
3. *Cornus canadensis*	15	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	85	x 3 =	255
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals	195 (A)		685 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-17_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Fine Sandy Loam	
3 - 6	10YR 6/1	100					Loamy Sand	
6 - 12	5YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-17_UPL-4
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7707243544 **Long:** -67.8689075076 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-17_UPL-4

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	20	Yes	FACU
2. *Fagus grandifolia*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Fagus grandifolia*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	25	Yes	FACU
2. *Cornus canadensis*	25	Yes	FAC
3. *Kalmia angustifolia*	25	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	110	(A)	390 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-17_UPL-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Fine Sandy Loam	
3 - 6	10YR 6/1	100					Loamy Sand	
6 - 12	5YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-18_PFO-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Bog **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7705019406 **Long:** -67.8705895041 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-18

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	3
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-18_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	50	Yes	FAC
2. *Acer rubrum*	20	Yes	FAC
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	20	Yes	FACW
2. *Viburnum nudum*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	15	Yes	FAC
2. *Vaccinium corymbosum*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	6	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	85	x 3 =	255
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	130	(A)	355 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-18_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-18_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7703232803 **Long:** -67.8704881669 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-18_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	10	Yes	FACU
2. *Pinus strobus*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Fagus grandifolia*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	30	(A)	110 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-18_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Fine Sandy Loam	
3 - 8	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-19_PEM-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7697314341 **Long:** -67.8711570427 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-19

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	4
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-19_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	5	Yes	FACW
2. *Spiraea alba*	1	No	FACW
3.			
4.			
5.			
6.			
7.			
	6	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Spiraea alba*	10	Yes	FACW
2. *Leersia oryzoides*	5	Yes	OBL
3. *Acer rubrum*	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	16	x 2 =	32
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	31 (A)		67 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-19_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-19_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7697624471 **Long:** -67.8711997066 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** ✓
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-19_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	20	Yes	FACU
2. *Acer rubrum*	15	Yes	FAC
3. *Pinus strobus*	10	Yes	FACU
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	15	Yes	FACU
2. *Ilex verticillata*	2	No	FACW
3.			
4.			
5.			
6.			
7.			
	17	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	30	Yes	FAC
2. *Pinus strobus*	15	Yes	FACU
3. *Cornus canadensis*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	55	x 3 =	165
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	117	(A)	409 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-19_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Fine Sandy Loam	
1 - 3	10YR 5/1	100					Fine Sandy Loam	
3 - 6	5YR 3/4	100					Fine Sandy Loam	
6 - 12	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-20_PSS-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7697948851 **Long:** -67.872479288 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-20

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	6
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-20_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	1	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	1	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	20	Yes	FACW
2. *Ilex verticillata*	1	No	FACW
3.			
4.			
5.			
6.			
7.			
	21	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Viburnum nudum*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	26	x 2 =	52
FAC species	0	x 3 =	0
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column Totals	27	(A)	56 (B)
Prevalence Index = B/A =	2.1		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-20_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100					Sapric Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-20_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7698214138 **Long:** -67.8725496121 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-20_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	30	Yes	FACU
2. *Pinus strobus*	15	Yes	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	55	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	20	Yes	FAC
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	20	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals	95	(A)	350 (B)
Prevalence Index = B/A =	3.7		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-20_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Fine Sandy Loam	
1 - 6	10YR 3/4	100					Fine Sandy Loam	
6 - 20	2.5Y 5/6	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-21_PSS-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7698543966 **Long:** -67.8728730698 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-21

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- _✓_ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	3
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-21_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	50	Yes	FACW
2. *Cornus canadensis*	10	No	FAC
3. *Kalmia angustifolia*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	90	(A)	200 (B)
Prevalence Index = B/A =	2.2		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-21_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Hemic Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-21_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7699419875 **Long:** -67.872893354 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met. No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-21_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	35	Yes	FACU
2. *Betula papyrifera*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	50	Yes	FACU
2. *Cornus canadensis*	20	Yes	FAC
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	120	(A)	460 (B)
Prevalence Index = B/A =	3.8		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-21_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Fine Sandy Loam	
2 - 10	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-22_PSS-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7702041315 **Long:** -67.8712896445 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-22

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-22_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	50	Yes	FACW
2. *Ilex verticillata*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	60	(A)	120 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-22_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100					Hemic Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-23_PSS-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7713257559 **Long:** -67.8625521809 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-23

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	2
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-23_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Picea rubens*	1	No	FACU
3. *Pinus strobus*	1	No	FACU
4.			
5.			
6.			
7.			
	22	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	30	Yes	FACW
2. *Alnus incana*	20	Yes	FACW
3. *Chamaedaphne calyculata*	10	No	OBL
4. *Spiraea alba*	10	No	FACW
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	10	x 1 =	10
FACW species	60	x 2 =	120
FAC species	50	x 3 =	150
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals	122	(A)	288 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-23_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-23_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7715202999 **Long:** -67.8627116886 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-23_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	10	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3. *Picea rubens*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	20	Yes	FACW
2. *Betula papyrifera*	15	Yes	FACU
3. *Pinus strobus*	10	Yes	FACU
4.			
5.			
6.			
7.			
	45	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	60	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	28.6	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	10	x 3 =	30
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	130	(A)	470 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-23_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/3	100					Sandy Loam	
6 - 12	10YR 5/6	100					Sandy Loam	
12 - 20	10YR 5/6	95	10YR 3/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-24_PFO-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.771684208 **Long:** -67.8611725197 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-24

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-24_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Betula papyrifera*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	50	Yes	FACW
2. *Alnus incana*	10	No	FACW
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	30	Yes	FAC
2. *Dryopteris carthusiana*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	90	x 3 =	270
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	165	(A)	430 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-24_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Sapric Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-24_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7717338708 **Long:** -67.8612225596 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-24_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2. *Pinus strobus*	10	Yes	FACU
3. *Betula papyrifera*	10	Yes	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	10	Yes	FACW
2. *Alnus incana*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	60	Yes	FACU
2. *Kalmia angustifolia*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	30	x 3 =	90
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals	125	(A)	440 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

The hydrophytic vegetation criterion has been met. However, due to the absence of wetland hydrology and/or hydric soils, this data point is within a non-wetland.

SOIL

Sampling Point: W-JMR-24_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Fine Sandy Loam	
1 - 9	10YR 3/6	100					Sandy Loam	
9 - 20	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-25_PSS-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7731565731 **Long:** -67.8595388868 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-25

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	3	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-25_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Betula papyrifera*	1	No	FACU
3.			
4.			
5.			
6.			
7.			
	21	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	50	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	50	x 3 =	150
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column Totals	101	(A)	254 (B)
Prevalence Index = B/A =	2.5		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-25_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Hemic Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-25_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7732610954 **Long:** -67.8592557461 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-25_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fagus grandifolia*	30	Yes	FACU
2. *Pinus strobus*	15	Yes	FACU
3. *Acer pensylvanicum*	10	No	FACU
4. *Picea rubens*	5	No	FACU
5.			
6.			
7.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer pensylvanicum*	15	Yes	FACU
2. *Fagus grandifolia*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	50	Yes	FACU
2. *Kalmia angustifolia*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	145	(A)	570 (B)
Prevalence Index = B/A =	3.9		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-25_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Fine Sandy Loam	
1 - 2	10YR 5/2	100					Fine Sandy Loam	
2 - 7	10YR 3/6	100					Sandy Loam	
7 - 16	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-26_PFO-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.771124716 **Long:** -67.857736107 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-26

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-26_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Betula populifolia*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	75	(A)	225 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-26_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Hemic Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? Yes ✓ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-26_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7712353152 **Long:** -67.8576087859 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-26_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fagus grandifolia*	65	Yes	FACU
2. *Acer rubrum*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Fagus grandifolia*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	60	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **3** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	140	(A)	555 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-26_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 4	10YR 4/1	100					Sandy Loam	
4 - 10	10YR 5/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-27_PFO-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.77200381 **Long:** -67.8602816072 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-27

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-27_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Fagus grandifolia*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2. *Osmunda claytoniana*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	40	x 3 =	120
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	65	(A)	180 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-27_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Hemic Mucky Peat	
6 - 12	2.5Y 4/1	95	2.5Y 4/4	5			Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-27_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7722278163 **Long:** -67.8601482511 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-27_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	30	Yes	FACU
2. *Fagus grandifolia*	25	Yes	FACU
3. *Pinus strobus*	10	No	FACU
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Fagus grandifolia*	15	Yes	FACU
2. *Prunus virginiana*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	50	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **5** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	135	(A)	540 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-27_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Fine Sandy Loam	
2 - 3	10YR 5/2	100					Fine Sandy Loam	
3 - 6	10YR 3/6	100					Fine Sandy Loam	
6 - 10	10YR 5/6	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-28_PSS-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7710946668 **Long:** -67.8601635062 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-JMR-28

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-28_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	25	Yes	FACW
2. *Alnus incana*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	50	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	80	(A)	160 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-28_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-28_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7710616421 **Long:** -67.8601985425 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-28_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	50	Yes	FACU
2. *Betula papyrifera*	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	25	Yes	FACU
2. *Kalmia angustifolia*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	20	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals	135	(A)	520 (B)
Prevalence Index = B/A =	3.9		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-28_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 4	10YR 5/2	100					Fine Sandy Loam	
4 - 16	10YR 5/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 16

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-29_PEM-1
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Channel **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7710303357 **Long:** -67.8587684222 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-29

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- _✓_ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	2
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-29_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	5	Yes	FACW
2. *Ilex verticillata*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	50	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	60	(A)	170 (B)
Prevalence Index = B/A =	2.8		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-29_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100					Mucky Peat	
6 - 12	2.5Y 5/2	95	10YR 5/4	5	C	M	Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRRR,MLRA149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Machias, Washington **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-29_UPL-2
Investigator(s): Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hilltop **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.771056613 **Long:** -67.8586371616 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-29_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	30	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3. *Pinus strobus*	10	Yes	FACU
4.			
5.			
6.			
7.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Cornus canadensis*	10	Yes	FAC
3. *Kalmia angustifolia*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	95 (A)		355 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-29_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 8	7.5YR 4/6	100					Loamy Sand	
8 - 16	10YR 4/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 16

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-JMR-30_PFO-1
Investigator(s): Matt Regan, Matt Todd, Joseph Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swamp **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7767006094 **Long:** -67.8568657302 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-JMR-30

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-30_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	20	Yes	FACW
2. *Thuja occidentalis*	20	Yes	FACW
3. *Pinus strobus*	10	No	FACU
4. *Betula populifolia*	5	No	FAC
5. *Abies balsamea*	5	No	FAC
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	15	Yes	FAC
2. *Picea mariana*	10	Yes	FACW
3. *Abies balsamea*	5	No	FAC
4. *Ilex verticillata*	5	No	FACW
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	30	x 3 =	90
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	100	(A)	250 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-30_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	7.5YR 2.5/1	100					Mucky Peat	
10 - 12	7.5YR 2.5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
✓ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-JMR-30_UPL-1
Investigator(s): Matt Regan, Matt Todd, Joseph Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7766242922 **Long:** -67.8566001915 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-JMR-30_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	35	Yes	FACU
2. *Pinus strobus*	20	Yes	FACU
3. *Betula populifolia*	10	No	FAC
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	15	Yes	FACU
2. *Viburnum nudum*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Kalmia angustifolia*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	125	(A)	465 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-JMR-30_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	7.5YR 2.5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 2

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-09
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-01_PFO-1
Investigator(s): Duane Choquette, Matthew Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7756224033 **Long:** -67.794410158 **Datum:** WGS84
Soil Map Unit Name: BW: Bucksport and Wonsqueak mucks, 0 to 2 percent slopes **NWI classification:** PFO
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-MJR-01

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
✓ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
✓ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	10

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-01_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	40	Yes	FAC
2. *Quercus rubra*	28	Yes	FACU
3. *Acer rubrum*	20	Yes	FAC
4. *Betula papyrifera*	5	No	FACU
5.			
6.			
7.			
	93	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	25	Yes	FACW
2. *Abies balsamea*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	40	Yes	FACW
2. *Coptis trifolia*	15	Yes	FACW
3. *Rubus pubescens*	15	Yes	FACW
4. *Aralia nudicaulis*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	70	x 3 =	210
FACU species	38	x 4 =	152
UPL species	0	x 5 =	0
Column Totals	203	(A)	552 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-01_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 2/1	100					Org matter Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-09
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-01_UPL-1
Investigator(s): Duane Choquette, Matthew Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7761048237 **Long:** -67.7957443894 **Datum:** WGS84
Soil Map Unit Name: Bucksport and Wonsqueak mucks, 0 to 2 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-01_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	50	Yes	FACU
2. *Acer rubrum*	50	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula papyrifera*	25	Yes	FACU
2. *Acer rubrum*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	25	Yes	FACU
2. *Vaccinium angustifolium*	15	Yes	FACU
3. *Cornus canadensis*	15	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals	195 (A)		700 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-01_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Org matter Sandy Loam	
4 - 18	2.5Y 4/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, washington **Sampling Date:** 2019-Sept-09
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-02_PFO-1
Investigator(s): Matt Regan, Sam Kefferstan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hilltop **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.776285 **Long:** -67.796154 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loan 3 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-MJR-02

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-02_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	30	Yes	FAC
2. *Acer rubrum*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	50	Yes	FACW
2. *Vaccinium angustifolium*	10	No	FACU
3. *Quercus rubra*	5	No	FACU
4. *Abies balsamea*	5	No	FAC
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	50	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	45	x 3 =	135
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	160 (A)		395 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-02_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	2.5Y 2.5/1	100					Peat	
1 - 3	2.5Y 5/2	100					Silty Clay Loam	
3 - 18	10Y 6/1	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-09
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-02_UPL-1
Investigator(s): Duane Choquette, Matthew Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7759570089 **Long:** -67.7958234307 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 3 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-02_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	60	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula papyrifera*	30	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Mitchella repens*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	140	x 4 =	560
UPL species	0	x 5 =	0
Column Totals	170 (A)		650 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-02_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100					Fibric Sandy Loam	
6 - 14	2.5Y 4/3	100					Sandy Loam	
14 - 18	2.5Y 4/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-03_PFO-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swamp **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.768105 **Long:** -67.854246 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam 8 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ____	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	2
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-03_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Betula populifolia*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	10	Yes	FAC
2. *Viburnum nudum*	10	Yes	FACW
3. *Hamamelis virginiana*	7	Yes	FACU
4.			
5.			
6.			
7.			
	27	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Onoclea sensibilis*	25	Yes	FACW
2. *Glyceria striata*	20	Yes	OBL
3. *Carex crinita*	15	Yes	OBL
4. *Osmundastrum cinnamomeum*	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	7	(A)
Total Number of Dominant Species Across All Strata:	8	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	87.5	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	35	x 1 =	35
FACW species	45	x 2 =	90
FAC species	45	x 3 =	135
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals	132	(A)	288 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-03_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Silt Loam	
4 - 18	10YR 4/1	100					Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
_✓_ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Soils were assumed to be hydric due to the presence of inundation, FACW and OBL vegetation species, and a definitive wetland boundary.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-03_PSS-1
Investigator(s): Matt Regan, Sam Kefferstan, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.767903 **Long:** -67.854503 **Datum:** WGS84
Soil Map Unit Name: Lamoine-Nicholville complex 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. culvert.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	14	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	4	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-03_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	15	Yes	FACU
2. *Betula populifolia*	10	Yes	FAC
3. *Spiraea alba*	10	Yes	FACW
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Onoclea sensibilis*	50	Yes	FACW
2. *Glyceria striata*	25	Yes	OBL
3. *Osmundastrum cinnamomeum*	15	No	FACW
4. *Coptis trifolia*	10	No	FACW
5. *Carex crinita*	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	83.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	30	x 1 =	30
FACW species	85	x 2 =	170
FAC species	25	x 3 =	75
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	155	(A)	335 (B)
Prevalence Index = B/A =	2.2		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-03_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5Y 2.5/1	100					Mucky Peat	
4 - 18	2.5Y 5/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Harrington, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-03_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** None **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.768111 **Long:** -67.854425 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam 8 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-03_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	30	Yes	FACU
2. *Betula populifolia*	20	Yes	FAC
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	20	Yes	FAC
2. *Hamamelis virginiana*	10	Yes	FACU
3. *Kalmia latifolia*	10	Yes	FACU
4. *Vaccinium angustifolium*	10	Yes	FACU
5.			
6.			
7.			
	50	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	5	Yes	FACU
2. *Fagus grandifolia*	5	Yes	FACU
3. *Quercus rubra*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 22.2 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals	125 (A)		450 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-03_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1.5	10YR 2/1	100					Silt Loam	
1.5 - 5	5YR 3/3	100					Silt Loam	
5 - 20	10YR 5/4	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-03_UPL-2
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.767873 **Long:** -67.854718 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam 8 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-03_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	30	Yes	FACU
2. *Betula populifolia*	20	Yes	FAC
3. *Acer rubrum*	15	Yes	FAC
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	15	Yes	FAC
2. *Ilex verticillata*	5	Yes	FACW
3. *test sci name*	0		
4. *test sci name*	0		
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	50	Yes	FACU
2. *Pteridium aquilinum*	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	50	x 3 =	150
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals	160 (A)		580 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-03_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loamy Sand	
2 - 18	7.5YR 5/4	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia Falls, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-04_PFO-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.767405 **Long:** -67.855766 **Datum:** WGS84
Soil Map Unit Name: Lamoine-Nicholville complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-04

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-04_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Betula populifolia*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	15	Yes	FAC
2. *Vaccinium angustifolium*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	50	Yes	FACW
2. *Coptis trifolia*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	55	x 3 =	165
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	125	(A)	325 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-04_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Silt Loam	
4 - 18	2.5Y 3/1	95	2.5Y 6/3	5	C	M	Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
✓ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-04_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.767351 **Long:** -67.855817 **Datum:** WGS84
Soil Map Unit Name: Lamoine-Nicholville complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-04_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	30	Yes	FACU
2. *Pinus strobus*	15	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4. *Betula populifolia*	5	No	FAC
5.			
6.			
7.			
	55	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2. *Betula populifolia*	5	Yes	FAC
3. *Vaccinium angustifolium*	5	Yes	FACU
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Vaccinium angustifolium*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals	110	(A)	420 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-04_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	5YR 2.5/1	100					Loamy Sand	
3 - 6	2.5Y 4/4	100					Silty Clay Loam	
6 - 18	10YR 5/4	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-05_PSS-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.767235 **Long:** -67.855898 **Datum:** WGS84
Soil Map Unit Name: Lamoine-Nicholville complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-05

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	5	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-05_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	15	Yes	FAC
2. *Picea rubens*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	15	Yes	FACW
2. *Spiraea alba*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	35	Yes	FAC
2. *Clintonia borealis*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	65	x 3 =	195
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	100	(A)	275 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-05_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Silt Loam	
2 - 18	2.5Y 6/1	95	2.5YR 6/4	5	C	M	Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-05_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.76729 **Long:** -67.85582 **Datum:** WGS84
Soil Map Unit Name: Lamoine-Nicholville complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ✓ No ____	Depth (inches):	10
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	8

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-05_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	30	Yes	FACU
2. *Pinus strobus*	10	Yes	FACU
3. *Acer rubrum*	10	Yes	FAC
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3. *Viburnum nudum*	5	Yes	FACW
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Vaccinium angustifolium*	10	Yes	FACU
3. *Ilex verticillata*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals	115	(A)	425 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-05_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Silt Loam	
2 - 18	10YR 4/4	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-06_PSS-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.767157 **Long:** -67.855632 **Datum:** WGS84
Soil Map Unit Name: Lamoine-Nicholville complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-MJR-06

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	2	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-06_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	20	Yes	FACW
2. *Corylus cornuta*	10	Yes	FACU
3. *Quercus rubra*	5	No	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	30	Yes	FACW
2. *Coptis trifolia*	5	No	FACW
3. *Cornus canadensis*	5	No	FAC
4. *Maianthemum canadense*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	15	x 3 =	45
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	90	(A)	235 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-06_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5Y 3/1	100					Silty Clay Loam	
4 - 18	2.5Y 6/1	95	2.5Y 6/4	5	C	M	Silty Clay	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-06_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.767111 **Long:** -67.855681 **Datum:** WGS84
Soil Map Unit Name: Lamoine-Nicholville complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-06_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea glauca*	30	Yes	FACU
2. *Betula populifolia*	15	Yes	FAC
3. *Acer rubrum*	10	No	FAC
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	25	Yes	FAC
2. *Viburnum nudum*	10	Yes	FACW
3. *Corylus cornuta*	10	Yes	FACU
4. *Picea glauca*	10	Yes	FACU
5.			
6.			
7.			
	55	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Vaccinium angustifolium*	20	Yes	FACU
3. *Cornus canadensis*	10	No	FAC
4. *Kalmia angustifolia*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	65	x 3 =	195
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals	180 (A)		635 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-06_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Loamy Sand	
3 - 6	2.5Y 6/1	100					Silty Clay Loam	
6 - 18	10YR 5/4	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-07_PEM-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.766729 **Long:** -67.866546 **Datum:** WGS84
Soil Map Unit Name: Skerry-Beckett association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-07

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-07_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2. *Betula populifolia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	30	Yes	FACW
2. *Parathelypteris noveboracensis*	20	Yes	FAC
3. *Coptis trifolia*	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	35	x 3 =	105
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	75	(A)	185 (B)
Prevalence Index = B/A =	2.5		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-07_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	2.5Y 2.5/1	100					Silt Loam	
2 - 18	2.5Y 4/1	95	2.5Y 5/3	5	C	M	Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-07_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.766619 **Long:** -67.866624 **Datum:** WGS84
Soil Map Unit Name: Skerry-Beckett association 0 to 15 percent slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ____	Depth (inches):	
Water Table Present?	Yes ____ No ____	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ____	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-07_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Pinus strobus*	0	No	FACU
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	15	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3. *Rubus allegheniensis*	7	Yes	FACU
4.			
5.			
6.			
7.			
	32	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Panax quinquefolius*	50	Yes	UPL
2. *Vaccinium angustifolium*	30	Yes	FACU
3. *Maianthemum canadense*	10	No	FACU
4. *Pyrola americana*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	62	x 4 =	248
UPL species	50	x 5 =	250
Column Totals	162	(A)	648 (B)
Prevalence Index = B/A =	4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-07_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Loamy Sand	
1 - 12	10YR 5/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Harrington, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-08_PSS-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swamp **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.768957 **Long:** -67.866194 **Datum:** WGS84
Soil Map Unit Name: Skerry-Beckett association 0 to 15 percent slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-08

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-08_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Aronia melanocarpa*	50	Yes	FAC
2. *Kalmia angustifolia*	15	No	FAC
3. *Acer rubrum*	7	No	FAC
4. *Viburnum nudum*	5	No	FACW
5.			
6.			
7.			
	77	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	15	Yes	FACW
2. *Vaccinium angustifolium*	5	Yes	FACU
3. *Kalmia angustifolia*	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	77	x 3 =	231
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	102	(A)	291 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-08_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-08_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.769029 **Long:** -67.866224 **Datum:** WGS84
Soil Map Unit Name: Skerry-Beckett association 0 to 15 percent slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-08_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea glauca*	25	Yes	FACU
2. *Pinus strobus*	15	Yes	FACU
3. *Betula populifolia*	15	Yes	FAC
4.			
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea glauca*	15	Yes	FACU
2. *Betula populifolia*	5	Yes	FAC
3. *Acer rubrum*	5	Yes	FAC
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	10	Yes	FACU
2. *Pteridium aquilinum*	5	Yes	FACU
3. *Aralia nudicaulis*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals	100	(A)	375 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-08_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/2	100					Loamy Sand	
2 - 4	10YR 4/1	100					Loamy Sand	
4 - 18	10YR 4/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia Falls, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-09_PFO-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.768888 **Long:** -67.865841 **Datum:** WGS84
Soil Map Unit Name: Skerry-Beckett association 0 to 15 percent slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-MJR-09

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-09_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Betula populifolia*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Vaccinium angustifolium*	50	Yes	FACU
2. *Viburnum nudum*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	50	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	50	x 3 =	150
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	175	(A)	600 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-09_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Silt Loam	
3 - 10	2.5Y 5/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Harrington, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-09_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.768871 **Long:** -67.865958 **Datum:** WGS84
Soil Map Unit Name: Sperry Beckett 0-15 slopes very rocky **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-09_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Pinus strobus*	25	Yes	FACU
3. *Betula populifolia*	10	No	FAC
4.			
5.			
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Vaccinium angustifolium*	50	Yes	FACU
2. *Acer rubrum*	10	No	FAC
3. *Picea glauca*	5	No	FACU
4.			
5.			
6.			
7.			
	65	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	25	Yes	FACU
2. *Maianthemum canadense*	10	Yes	FACU
3. *Cornus canadensis*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals	170	(A)	625 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-09_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	5YR 2.5/2	100					Loamy Sand	
5 - 6	7.5YR 3/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Harrington, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-10_PSS-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7681362 **Long:** -67.8663123 **Datum:** WGS84
Soil Map Unit Name: Skerry-Beckett association 0-15 % slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-10

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	1
Water Table Present?	Yes _✓_ No ____	Depth (inches):	3
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-10_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	10	Yes	FAC
2. *Acer rubrum*	10	Yes	FAC
3. *Picea rubens*	10	Yes	FACU
4. *Viburnum nudum*	10	Yes	FACW
5. *Vaccinium angustifolium*	10	Yes	FACU
6. *Aronia melanocarpa*	5	No	FAC
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	15	Yes	FACW
2. *Maianthemum canadense*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	57.1	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	25	x 3 =	75
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	75	(A)	225 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-10_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Mucky Silt Loam	
3 - 5	2.5Y 5/1	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 5

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia Falls, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-10_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7681172 **Long:** -67.8663444 **Datum:** WGS84
Soil Map Unit Name: Skerry and Beckett association 0 to 15 percent slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-10_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea glauca*	15	Yes	FACU
2. *Betula papyrifera*	10	Yes	FACU
3. *Betula populifolia*	5	No	FAC
4. *Pinus strobus*	5	No	FACU
5. *Acer rubrum*	5	No	FAC
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	15	Yes	FAC
2. *Picea glauca*	10	Yes	FACU
3. *Hamamelis virginiana*	10	Yes	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Aralia nudicaulis*	5	Yes	FACU
2. *Pyrola americana*	5	Yes	FAC
3. *Maianthemum canadense*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	8	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	90	(A)	330 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-10_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5YR 2.5/1	100					Loamy Sand	
4 - 6	2.5YR 5/3	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-11_PSS-1
Investigator(s): Matt Regan, Sam Kefferstan, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.771641 **Long:** -67.866709 **Datum:** WGS84
Soil Map Unit Name: Skerry-Beckett association 0-15 % slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-11

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-11_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2. *Betula populifolia*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	10	Yes	FACW
2. *Viburnum nudum*	10	Yes	FACW
3. *Betula populifolia*	5	No	FAC
4. *Acer rubrum*	5	No	FAC
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2. *Vaccinium angustifolium*	10	Yes	FACU
3. *Onoclea sensibilis*	5	No	FACW
4. *Coptis trifolia*	5	No	FACW
5. *Alnus incana*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	83.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	30	x 3 =	90
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	85	(A)	220 (B)
Prevalence Index = B/A =	2.6		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-11_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Loamy Sand	
3 - 10	10YR 5/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia Falls, Washington **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-11_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.771533 **Long:** -67.866663 **Datum:** WGS84
Soil Map Unit Name: Skerry-Beckett association 0-15% very rock **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-11_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2. *Pinus strobus*	10	Yes	FACU
3. *Betula populifolia*	10	Yes	FAC
4.			
5.			
6.			
7.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	15	Yes	FACU
2. *Betula populifolia*	10	Yes	FAC
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Aralia nudicaulis*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	75	(A)	270 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-11_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-12_PFO-1
Investigator(s): Matt Regan, Sam Kefferstan, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swamp **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.77359 **Long:** -67.871613 **Datum:** WGS84
Soil Map Unit Name: Skerry-colonel association 0-8% slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-12

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-12_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2. *Picea mariana*	10	Yes	FACW
3. *Pinus strobus*	10	Yes	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	15	Yes	FACW
2. *Aronia melanocarpa*	15	Yes	FAC
3. *Vaccinium corymbosum*	15	Yes	FACW
4. *Alnus incana*	5	No	FACW
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium corymbosum*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	30	x 3 =	90
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	105	(A)	260 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-12_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 2/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-12_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.773609 **Long:** -67.871977 **Datum:** WGS84
Soil Map Unit Name: Skerry-colonel association 0-8% slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-12_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	30	Yes	FACU
2. *Betula populifolia*	20	Yes	FAC
3. *Acer rubrum*	10	No	FAC
4. *Picea mariana*	5	No	FACW
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	5	Yes	FACU
2. *Picea mariana*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pyrola americana*	25	Yes	FAC
2. *Pteridium aquilinum*	20	Yes	FACU
3. *Vaccinium angustifolium*	10	No	FACU
4. *Cornus canadensis*	5	No	FAC
5. *Fagus grandifolia*	5	No	FACU
6. *Aralia nudicaulis*	5	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	60	x 3 =	180
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals	145 (A)		500 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-12_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	7.5YR 2.5/2	100					Loamy Sand	
4 - 7	7.5YR 5/1	100					Loamy Sand	e horizon

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-13_PFO-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.774972 **Long:** -67.874356 **Datum:** WGS84
Soil Map Unit Name: Skerry-colonel association 0-8% very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-13

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-13_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	30	Yes	FAC
2. *Acer rubrum*	10	Yes	FAC
3. *Betula alleghaniensis*	5	No	FAC
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	15	Yes	FAC
2. *Vaccinium corymbosum*	10	Yes	FACW
3. *Alnus incana*	10	Yes	FACW
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	30	Yes	FACW
2. *Vaccinium corymbosum*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	125 (A)		310 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-13_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100					Peat	
12 - 18	10YR 5/1	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
_✓_ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
_✓_ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-13_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.775069 **Long:** -67.87426 **Datum:** WGS84
Soil Map Unit Name: Skerry-colonel association 0-8% very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-13_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	30	Yes	FAC
2. *Betula populifolia*	10	Yes	FAC
3. *Pinus strobus*	10	Yes	FACU
4.			
5.			
6.			
7.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	30	Yes	FACU
2. *Quercus rubra*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	10	Yes	FACU
2. *Aralia nudicaulis*	10	Yes	FACU
3. *Pyrola americana*	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	115 (A)		415 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-13_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	5YR 2.5/1	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 3

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-14_PFO-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.775694 **Long:** -67.873592 **Datum:** WGS84
Soil Map Unit Name: Skerry-colonel association 0-8%slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-14

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	7	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-14_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Betula populifolia*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Aronia melanocarpa*	10	Yes	FAC
2. *Picea glauca*	10	Yes	FACU
3. *Alnus incana*	10	Yes	FACW
4. *Viburnum nudum*	10	Yes	FACW
5. *Vaccinium angustifolium*	5	No	FACU
6. *Vaccinium corymbosum*	5	No	FACW
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	80	Yes	FACW
2. *Coptis trifolia*	5	No	FACW
3. *Aralia nudicaulis*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	6	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	85.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	110	x 2 =	220
FAC species	50	x 3 =	150
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	180	(A)	450 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-14_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	2.5YR 2.5/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-14_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.77553 **Long:** -67.873757 **Datum:** WGS84
Soil Map Unit Name: Skerry-colonel association 0-8% slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-14_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	15	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	30	Yes	FACU
2. *Acer rubrum*	10	No	FAC
3. *Betula papyrifera*	10	No	FACU
4. *Quercus rubra*	5	No	FACU
5.			
6.			
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	30	Yes	FAC
2. *Pteridium aquilinum*	15	Yes	FACU
3. *Aralia nudicaulis*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	40	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals	130	(A)	470 (B)
Prevalence Index = B/A =	3.6		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-14_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5YR 2.5/1	100					Loamy Sand	
4 - 6	5YR 5/1	100					Loamy Sand	e horizon

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-15_PFO-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swamp **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.775476 **Long:** -67.871866 **Datum:** WGS84
Soil Map Unit Name: Skerry-colonel association 0-8% slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-15

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-15_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Picea mariana*	10	Yes	FACW
3. *Picea glauca*	10	Yes	FACU
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Aronia melanocarpa*	50	Yes	FAC
2. *Vaccinium corymbosum*	20	Yes	FACW
3. *Alnus incana*	10	No	FACW
4.			
5.			
6.			
7.			
	80	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	30	Yes	FACW
2. *Vaccinium corymbosum*	25	Yes	FACW
3. *Vaccinium angustifolium*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	70	x 3 =	210
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	185 (A)		480 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-15_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 24	5YR 2.5/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Harrington, Washington **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-15_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.775208 **Long:** -67.871807 **Datum:** WGS84
Soil Map Unit Name: Skerry-colonel association 0-8% slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-15_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	25	Yes	FACU
2. *Picea glauca*	20	Yes	FACU
3. *Betula papyrifera*	15	Yes	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea glauca*	10	Yes	FACU
2. *Betula papyrifera*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	10	Yes	FACU
2. *Aralia nudicaulis*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **7** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals	95	(A)	380 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-15_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5YR 2.5/1	100					Loamy Sand	
4 - 6	2.5YR 5/1	100					Loamy Sand	e horizon

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-16_PSS-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.775431 **Long:** -67.872802 **Datum:** WGS84
Soil Map Unit Name: Skerry-colonel association 0-8% slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-16

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-16_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2. *Pinus strobus*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	15	Yes	FACW
2. *Viburnum nudum*	10	Yes	FACW
3. *Aronia melanocarpa*	5	No	FAC
4. *Quercus rubra*	5	No	FACU
5. *Hamamelis virginiana*	5	No	FACU
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	60	Yes	FACW
2. *Cornus canadensis*	5	No	FAC
3. *Coptis trifolia*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	80	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	25	x 3 =	75
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	130	(A)	315 (B)
Prevalence Index = B/A =	2.4		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-16_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	2.5Y 2.5/1	100					Peat	
5 - 12	7.5YR 5/1	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-12
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-16_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** None **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.775484 **Long:** -67.872944 **Datum:** WGS84
Soil Map Unit Name: Skerry-Beckett association 0-8% slopes very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-16_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Betula papyrifera*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	50	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3. *Betula papyrifera*	10	No	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	20	Yes	FACU
2. *Pyrola americana*	5	No	FAC
3. *Aralia nudicaulis*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals	150 (A)		545 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-16_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5YR 2.5/1	100					Loamy Sand	
4 - 6	5YR 5/1	100					Loamy Sand	e horizon

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-17_PEM-1
Investigator(s): Matt Regan, Molly Lennon, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.774471 **Long:** -67.871356 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:** PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-17

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-17_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Aronia melanocarpa*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	30	(A)	70 (B)
Prevalence Index = B/A =	2.3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-17_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	2.5YR 2.5/1	100					Peat	
5 - 7	5YR 4/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
✓ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-17_UPL-1
Investigator(s): Matt Regan, Molly Lennon **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.774755 **Long:** -67.872807 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-17_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	50	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3. *Betula papyrifera*	10	No	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	10	Yes	FACU
2. *Quercus rubra*	5	Yes	FACU
3. *Picea glauca*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	10	Yes	FACU
2. *Pteridium aquilinum*	10	Yes	FACU
3. *Aralia nudicaulis*	5	No	FACU
4. *Pyrola americana*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals	130 (A)		495 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-17_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	5YR 2.5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-18_PSS-1
Investigator(s): Matt Regan, Molly Lennon, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7839318208 **Long:** -67.8715141118 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association 0 to 8 percent slopes, very stony **NWI classification:** PSS
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-18

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	2
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-18_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	5	Yes	FACW
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea mariana*	10	Yes	FACW
2. *Pinus strobus*	10	Yes	FACU
3. *Alnus incana*	5	Yes	FACW
4. *Viburnum nudum*	5	Yes	FACW
5. *Kalmia angustifolia*	5	Yes	FAC
6. *Aronia melanocarpa*	5	Yes	FAC
7. *Betula populifolia*	5	Yes	FAC
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2. *Vaccinium angustifolium*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	9	(A)
Total Number of Dominant Species Across All Strata:	11	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	81.8	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	20	x 3 =	60
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	85	(A)	230 (B)
Prevalence Index = B/A =	2.7		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-18_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/1	100					Peat	
7 - 18	10YR 4/1	95	10YR 5/3	5	C	M	Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-18_UPL-1
Investigator(s): Matt Regan, Molly Lennon, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.784005591 **Long:** -67.8713434562 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-18_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	15	Yes	FACU
2. *Pinus strobus*	10	Yes	FACU
3. *Acer rubrum*	10	Yes	FAC
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2. *Abies balsamea*	10	Yes	FAC
3. *Pinus strobus*	5	No	FACU
4. *Acer pensylvanicum*	5	No	FACU
5. *Hamamelis virginiana*	5	No	FACU
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2. *Vaccinium angustifolium*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	20	x 3 =	60
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals	85 (A)		300 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-18_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 7	2.5YR 2.5/1	100					Loamy Sand	
7 - 9	2.5YR 5/1	100					Loamy Sand	e horizon

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 9

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-19_PSS-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.783456 **Long:** -67.872437 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-MJR-19

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	10	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-19_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2. *Betula papyrifera*	5	Yes	FACU
3. *Picea rubens*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Aronia arbutifolia*	15	Yes	FACW
2. *Alnus incana*	10	Yes	FACW
3. *Acer rubrum*	5	No	FAC
4. *Pinus strobus*	5	No	FACU
5. *Rhododendron canadense*	5	No	FACW
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	15	Yes	FACW
2. *Kalmia angustifolia*	5	Yes	FAC
3. *Coptis trifolia*	5	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	20	x 3 =	60
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	85	(A)	220 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-19_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 24	7.5YR 2.5/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-19_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.783555 **Long:** -67.872427 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-19_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	10	Yes	FACU
2. *Populus tremuloides*	10	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4. *Betula populifolia*	5	No	FAC
5.	5		
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	50	Yes	FACU
2. *Kalmia angustifolia*	25	Yes	FAC
3. *Viburnum nudum*	20	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	40	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	35	x 3 =	105
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	125	(A)	425 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-19_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	5YR 2.5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-20_PSS-1
Investigator(s): Matt Regan, Molly Lennon, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.785139 **Long:** -67.87001 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-MJR-20

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-20_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	30	Yes	FAC
2. *Pinus strobus*	10	Yes	FACU
3. *Acer rubrum*	10	Yes	FAC
4. *Kalmia angustifolia*	5	No	FAC
5. *Rhododendron canadense*	5	No	FACW
6. *Aronia arbutifolia*	5	No	FACW
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus hispidus*	30	Yes	FACW
2. *Scirpus cyperinus*	20	Yes	OBL
3. *Osmundastrum cinnamomeum*	15	Yes	FACW
4. *Rhododendron groenlandicum*	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	83.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	25	x 1 =	25
FACW species	55	x 2 =	110
FAC species	45	x 3 =	135
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	135	(A)	310 (B)
Prevalence Index = B/A =	2.3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-20_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	7.5YR 2.5/1	100					Mucky Peat	
18 - 20	2.5Y 5/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 20

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Harrington, Washington **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-20_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.785139 **Long:** -67.87001 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-20_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	30	Yes	FACU
2. *Betula populifolia*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	40	Yes	FACU
2. *Kalmia angustifolia*	35	Yes	FAC
3. *Vaccinium angustifolium*	25	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	40	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals	150	(A)	545 (B)
Prevalence Index = B/A =	3.6		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-20_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	7.5YR 2.5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-21_PSS-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.783153 **Long:** -67.869795 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-MJR-21

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-21_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	40	Yes	FAC
2. *Alnus incana*	20	Yes	FACW
3. *Viburnum nudum*	10	No	FACW
4.			
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	20	Yes	OBL
2. *Rubus hispidus*	20	Yes	FACW
3. *Kalmia angustifolia*	10	No	FAC
4. *Vaccinium angustifolium*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	20	x 1 =	20
FACW species	50	x 2 =	100
FAC species	50	x 3 =	150
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	130	(A)	310 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-21_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	5YR 2.5/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-21_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.783172 **Long:** -67.869645 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-21_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	40	Yes	FAC
2. *Hamamelis virginiana*	40	Yes	FACU
3. *Quercus rubra*	10	No	FACU
4. *Viburnum nudum*	5	No	FACW
5.			
6.			
7.			
	95	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	30	Yes	FAC
2. *Coptis trifolia*	10	Yes	FACW
3. *Pyrola americana*	10	Yes	FAC
4. *Kalmia angustifolia*	10	Yes	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	83.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	90	x 3 =	270
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals	155	(A)	500 (B)
Prevalence Index = B/A =	3.2		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-21_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	2.5YR 2.5/1	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 2

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-22_PFO-1
Investigator(s): Matt Regan, Sam kefferstan, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.782936 **Long:** -67.86859 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-22

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-22_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	25	Yes	FAC
2. *Betula papyrifera*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	10	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3. *Alnus incana*	10	Yes	FACW
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	50	Yes	FACW
2. *Vaccinium angustifolium*	25	Yes	FACU
3. *Pyrola americana*	15	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	50	x 3 =	150
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	155	(A)	450 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-22_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/1	100					Mucky Peat	
10 - 14	10YR 2/1	100					Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-22_PSS-1
Investigator(s): Matt Regan, Sam kefferstan, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.783195 **Long:** -67.868391 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-22

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	7	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-22_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	30	Yes	FAC
2. *Alnus incana*	25	Yes	FACW
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	70	Yes	OBL
2. *Comptonia peregrina*	10	No	UPL
3. *Rubus hispidus*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	70	x 1 =	70
FACW species	30	x 2 =	60
FAC species	30	x 3 =	90
FACU species	5	x 4 =	20
UPL species	10	x 5 =	50
Column Totals	145 (A)		290 (B)
Prevalence Index = B/A =	2		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-22_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 4/2	95	10YR 5/4	5	C	M	Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-22_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.783284 **Long:** -67.868403 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-22_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	30	Yes	FAC
2. *Acer rubrum*	25	Yes	FAC
3. *Alnus incana*	10	No	FACW
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Acer rubrum*	35	Yes	FAC
2. *Osmundastrum cinnamomeum*	20	Yes	FACW
3. *Vaccinium angustifolium*	10	No	FACU
4. *Rubus hispidus*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	90	x 3 =	270
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	140	(A)	400 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-22_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	5YR 2.5/1	100					Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 2

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-22_UPL-2
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.782911 **Long:** -67.868655 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-22_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	25	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3. *Betula papyrifera*	15	Yes	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer pensylvanicum*	20	Yes	FACU
2. *Hamamelis virginiana*	10	Yes	FACU
3. *Acer rubrum*	10	Yes	FAC
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	10	Yes	FACU
2. *Osmundastrum cinnamomeum*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	30	x 3 =	90
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals	120 (A)		430 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-22_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	5YR 2.5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Harrington, Washington **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-23_PFO-1
Investigator(s): Matt Regan, Sam kefferstan, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swamp **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.784621 **Long:** -67.869327 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-23

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	2	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-23_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	10	Yes	FAC
2. *Aronia arbutifolia*	10	Yes	FACW
3. *Kalmia angustifolia*	5	No	FAC
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	20	Yes	FACU
2. *Kalmia angustifolia*	20	Yes	FAC
3. *Carex trisperma*	10	No	OBL
4. *Osmundastrum cinnamomeum*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	80	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	10	x 1 =	10
FACW species	15	x 2 =	30
FAC species	70	x 3 =	210
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	120	(A)	350 (B)
Prevalence Index = B/A =	2.9		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-23_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Peat	
8 - 18	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 18

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-23_UPL-1
Investigator(s): Matt Regan, Sam kefferstan, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.784744 **Long:** -67.869598 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-23_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	45	Yes	FAC
2. *Pinus strobus*	15	Yes	FACU
3. *Viburnum nudum*	5	No	FACW
4. *Kalmia angustifolia*	5	No	FAC
5. *Comptonia peregrina*	5	No	UPL
6.			
7.			
	75	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	45	Yes	FAC
2. *Vaccinium angustifolium*	25	Yes	FACU
3. *Cornus canadensis*	15	No	FAC
4. *Pyrola americana*	10	No	FAC
5. *Pteridium aquilinum*	5	No	FACU
6. *Comptonia peregrina*	5	No	UPL
7. *Quercus rubra*	5	No	FACU
8.			
9.			
10.			
11.			
12.			
	110	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	120	x 3 =	360
FACU species	50	x 4 =	200
UPL species	10	x 5 =	50
Column Totals	185	(A)	620 (B)
Prevalence Index = B/A =	3.4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-23_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	7.5YR 2.5/2	100					Loamy Sand	
3 - 4	10YR 5/1	100					Sandy Loam	e horizon

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia Falls, Washington **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-24_PFO-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Bog **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.783382 **Long:** -67.861961 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-24

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-24_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Pinus strobus*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Vaccinium corymbosum*	20	Yes	FACW
2. *Acer rubrum*	10	Yes	FAC
3. *Picea glauca*	5	No	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	30	Yes	FACW
2. *Kalmia angustifolia*	20	Yes	FAC
3. *Vaccinium angustifolium*	10	No	FACU
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	65	x 3 =	195
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	140	(A)	395 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-24_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	7.5YR 2.5/1	100					Peat	
12 - 18	10YR 3/1	100					Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-17
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-24_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.783273 **Long:** -67.861845 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-24_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	20	Yes	FACU
2. *Picea rubens*	20	Yes	FACU
3. *Pinus strobus*	20	Yes	FACU
4. *Acer rubrum*	10	No	FAC
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	15	Yes	FACU
2. *Betula papyrifera*	7	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	27	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pyrola americana*	25	Yes	FAC
2. *Cornus canadensis*	10	Yes	FAC
3. *Vaccinium angustifolium*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	28.6	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	87	x 4 =	348
UPL species	0	x 5 =	0
Column Totals	137	(A)	498 (B)
Prevalence Index = B/A =	3.6		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-24_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/1	100					Silt Loam	
2 - 5	7.5YR 4/4	100					Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 5

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** North Washington, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-25_PSS-1
Investigator(s): Matt Regan, Sam kefferstan, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Bog **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.8899470121 **Long:** -67.8639358655 **Datum:** WGS84
Soil Map Unit Name: Skerry-Beckett association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-25

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	4
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-25_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Aronia arbutifolia*	50	Yes	FACW
2. *Kalmia angustifolia*	30	Yes	FAC
3. *Acer rubrum*	15	No	FAC
4. *Vaccinium corymbosum*	10	No	FACW
5. *Picea rubens*	5	No	FACU
6.			
7.			
	110	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmunda spectabilis*	30	Yes	OBL
2. *Osmundastrum cinnamomeum*	25	Yes	FACW
3. *Kalmia angustifolia*	10	No	FAC
4. *Rhododendron canadense*	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	30	x 1 =	30
FACW species	95	x 2 =	190
FAC species	65	x 3 =	195
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	195	(A)	435 (B)
Prevalence Index = B/A =	2.2		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-25_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	7.5YR 2.5/2	100					Peat	
8 - 20	7.5YR 2.5/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** North Washington, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-25_UPL-1
Investigator(s): Matt Regan, Sam kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** None **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8899470121 **Long:** -67.8639358655 **Datum:** WGS84
Soil Map Unit Name: Skerry-Beckett association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-25_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Abies balsamea*	20	Yes	FAC
3. *Fagus grandifolia*	15	Yes	FACU
4. *Pinus strobus*	10	No	FACU
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	30	Yes	FACU
2. *Fagus grandifolia*	10	No	FACU
3. *Abies balsamea*	10	No	FAC
4. *Acer pensylvanicum*	5	No	FACU
5.			
6.			
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	5	Yes	FAC
2. *Pyrola americana*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	140	(A)	490 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-25_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	5YR 2.5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** North Washington, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-26_PFO-1
Investigator(s): Matt Regan, Sam Kefferstan, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.806588 **Long:** -67.929292 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-26

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	7	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	6	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-26_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	20	Yes	FAC
2. *Picea rubens*	10	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	35	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	25	Yes	FACW
2. *Picea rubens*	10	Yes	FACU
3. *Vaccinium corymbosum*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	30	x 3 =	90
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	90	(A)	270 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-26_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/2	100					Peat	
6 - 8	10YR 4/1	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✓ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** North Washington, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-26_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.806483 **Long:** -67.929297 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-26_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	30	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3. *Pinus strobus*	15	Yes	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	15	Yes	FACU
2. *Picea rubens*	10	Yes	FACU
3. *Hamamelis virginiana*	10	Yes	FACU
4. *Abies balsamea*	5	No	FAC
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	10	Yes	FACU
2. *Aralia nudicaulis*	5	Yes	FACU
3. *Pyrola americana*	5	Yes	FAC
4. *Pteridium aquilinum*	5	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	140	(A)	520 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-26_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	7.5YR 2.5/2	100					Loamy Sand	
2 - 4	7.5YR 5/1	100					Loamy Sand	
4 - 6	7.5YR 5/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-27_PSS-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7757265903 **Long:** -67.7934925911 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-27

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-27_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	10	Yes	FACU
2. *Betula populifolia*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Cornus alba*	15	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Glyceria maxima*	50	Yes	OBL
2. *Parathelypteris noveboracensis*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	50	x 1 =	50
FACW species	15	x 2 =	30
FAC species	20	x 3 =	60
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	95 (A)		180 (B)

Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-27_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	2.5Y 3/1	100					Silty Clay Loam	
2 - 18	10YR 4/2	100					Silty Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
_✓_ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Soils were assumed to be hydric due to the presence of inundation, FACW and OBL vegetation species, and a definitive wetland boundary.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-27_UPL-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7757154424 **Long:** -67.7934937645 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
✓ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	18	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Dry season water table.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-27_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	50	Yes	FAC
2. *Quercus rubra*	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	10	Yes	FACU
2. *Abies balsamea*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals	90	(A)	305 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-27_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 2/1	100					Silt Loam	
5 - 10	10YR 7/1	100					Sandy Clay Loam	E horizon
10 - 20	7.5YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-28_PFO-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7762314324 **Long:** -67.7928109747 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-28

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- ✓ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	0
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-28_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	35	Yes	FAC
2. *Acer rubrum*	10	Yes	FAC
3. *Quercus rubra*	5	No	FACU
4.			
5.			
6.			
7.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	10	Yes	FACW
2. *Cornus amomum*	10	Yes	FACW
3. *Acer rubrum*	5	Yes	FAC
4.			
5.			
6.			
7.			
	25	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Carex crinita*	70	Yes	OBL
2. *Glyceria striata*	20	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	90	x 1 =	90
FACW species	20	x 2 =	40
FAC species	50	x 3 =	150
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	165	(A)	300 (B)

Prevalence Index = B/A = 1.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-28_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/1	100					Silty Clay Loam	
3 - 20	10YR 5/1	100					Silty Clay	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-28_UPL-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7763877968 **Long:** -67.7928773594 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ✓ No _	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	6
Water Table Present?	Yes ✓ No ____	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Wetland Hydrology Present? Yes ✓ No _

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-28_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Betula populifolia*	25	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	15	Yes	FACU
2. *Viburnum nudum*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	25	Yes	FAC
2. *Coptis trifolia*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	83.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	100	x 3 =	300
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	135	(A)	400 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-28_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	7.5YR 2.5/1	100					Loam	
5 - 7	10YR 4/1	100					Sandy Loam	
7 - 20	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-29_PFO-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7748131046 **Long:** -67.7921857685 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-29

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	2	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-29_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Betula populifolia*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	50	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	30	Yes	FACW
2. *Glyceria striata*	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	10	x 1 =	10
FACW species	80	x 2 =	160
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	150 (A)		350 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-29_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	7.5YR 2.5/1	100					Silt Loam	
5 - 20	2.5Y 6/1	95	10YR 5/4	5	C	M	Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-29_UPL-1
Investigator(s): Matt Regan, Gabriel Pelletier, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Toe **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7776643187 **Long:** -67.7869647649 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-29_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Quercus rubra*	25	Yes	FACU
3. *Pinus strobus*	10	No	FACU
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2. *Abies balsamea*	8	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	18	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	30	Yes	FAC
2. *Osmundastrum cinnamomeum*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	88	x 3 =	264
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	153	(A)	484 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-29_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	7.5YR 2.5/1	100					Silt Loam	
5 - 7	10YR 5/1	100					Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-30_PFO-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7756281868 **Long:** -67.786730323 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-30

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	8	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-30_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	20	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	25	Yes	FACW
2. *Acer rubrum*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	15	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	80	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	35	x 3 =	105
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	95	(A)	265 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-30_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/1	100					Silt Loam	
7 - 9	10YR 4/1	95	10YR 5/6	5	C	M	Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 9

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-30_UPL-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7758073919 **Long:** -67.7867984679 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-30_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	35	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	30	Yes	FACU
2. *Acer rubrum*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals	100	(A)	365 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-30_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	7.5YR 2.5/1	100					Loam	
5 - 9	7.5YR 6/1	100					Loamy Sand	
9 - 20	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-31_PSS-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.77503106 **Long:** -67.8113048059 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-31

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ____	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-31_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2. *Betula populifolia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	10	Yes	FAC
2. *Picea rubens*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Carex crinita*	50	Yes	OBL
2. *Glyceria striata*	10	No	OBL
3. *Rubus hispidus*	10	No	FACW
4. *Cornus canadensis*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	60	x 1 =	60
FACW species	10	x 2 =	20
FAC species	35	x 3 =	105
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	110	(A)	205 (B)

Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-31_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Silt Loam	
3 - 5	10YR 4/1	100					Sandy Clay Loam	
5 - 18	10YR 5/1	90	10YR 6/6	10	C	M	Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-31_UPL-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.775061193 **Long:** -67.811350152 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ✓ No ____	Depth (inches):	9
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	6

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-31_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	15	Yes	FAC
2. *Picea rubens*	15	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	35	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2. *Abies balsamea*	10	Yes	FAC
3. *Betula populifolia*	10	Yes	FAC
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals	75	(A)	260 (B)
Prevalence Index = B/A =	3.5		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-31_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Silt Loam	
4 - 20	10YR 5/2	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-32_PEM-3
Investigator(s): Matt Regan , Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7728471552 **Long:** -67.8274513689 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-32

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
_✓_ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
_✓_ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-32_PEM-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	10	Yes	FACW
2. *Betula papyrifera*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Carex crinita*	80	Yes	OBL
2. *Scirpus cyperinus*	10	No	OBL
3. *Glyceria striata*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	100	x 1 =	100
FACW species	10	x 2 =	20
FAC species	5	x 3 =	15
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	120 (A)		155 (B)
Prevalence Index = B/A =	1.3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-32_PEM-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Mucky Peat	
8 - 12	10YR 5/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-32_PFO-1
Investigator(s): Matt Regan , Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swamp **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7738691187 **Long:** -67.8255542089 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-32

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
_✓_ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
_✓_ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	6	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-32_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	25	Yes	FACW
2. *Acer rubrum*	5	No	FAC
3. *Betula populifolia*	5	No	FAC
4.			
5.			
6.			
7.			
	35	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	10	Yes	FACU
2. *Chamaedaphne calyculata*	5	Yes	OBL
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Carex stricta*	80	Yes	OBL
2. *Kalmia angustifolia*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	85	x 1 =	85
FACW species	25	x 2 =	50
FAC species	15	x 3 =	45
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	135	(A)	220 (B)

Prevalence Index = B/A = 1.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-32_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-32_PUB-1
Investigator(s): Matt Regan , Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7727466142 **Long:** -67.8274663725 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-MJR-32

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PUB.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- _✓_ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	36
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-32_PUB-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	10	Yes	FAC
2. *Picea mariana*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Carex stricta*	15	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	15	x 1 =	15
FACW species	10	x 2 =	20
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	35	(A)	65 (B)
Prevalence Index = B/A =	1.9		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-32_PUB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
-								

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
_✓_ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Due to inundation a clear soil profile was unobtainable. Soils are assumed to be hydric. Soils were assumed to be hydric due to the presence of inundation, FACW and OBL vegetation species, and a definitive wetland boundary.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-32_UPL-1
Investigator(s): Matt Regan , Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7738026921 **Long:** -67.825463852 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-32_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	30	Yes	FACU
2. *Acer rubrum*	15	Yes	FAC
3. *Quercus rubra*	10	No	FACU
4. *Abies balsamea*	5	No	FAC
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea mariana*	10	Yes	FACW
2. *Cornus amomum*	5	Yes	FACW
3. *Chamaedaphne calyculata*	5	Yes	OBL
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	40	Yes	FAC
2. *Pteridium aquilinum*	30	Yes	FACU
3. *Pyrola americana*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	15	x 2 =	30
FAC species	70	x 3 =	210
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	160	(A)	525 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-32_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	7.5YR 2.5/2	100					Loam	
6 - 8	7.5YR 3/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-32_UPL-2
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7728018091 **Long:** -67.827228997 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-32_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	30	Yes	FACU
2. *Picea mariana*	10	Yes	FACW
3. *Quercus rubra*	10	Yes	FACU
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pyrola americana*	10	Yes	FAC
2. *Kalmia angustifolia*	5	Yes	FAC
3. *Pteridium aquilinum*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals	80	(A)	285 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-32_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	7.5YR 2.5/2	100					Peat	
2 - 8	7.5YR 2.5/1	100					Loam	
8 - 11	7.5YR 5/1	100					Sandy Loam	E horizon

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 11

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Columbia, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-32_UPL-3
Investigator(s): Matt Regan , Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7727371427 **Long:** -67.827568464 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___		
Hydric Soil Present?	Yes ___ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ___ No ✓**
Wetland Hydrology Present?	Yes ___ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No ✓	Depth (inches):	
Water Table Present?	Yes ___ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ___ No ✓
Saturation Present? (includes capillary fringe)	Yes ___ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-32_UPL-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	20	Yes	FACU
2. *Picea rubens*	10	Yes	FACU
3. *Betula populifolia*	10	Yes	FAC
4. *Acer rubrum*	10	Yes	FAC
5. *Pinus resinosa*	5	No	FACU
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	20	Yes	FAC
2. *Picea rubens*	5	No	FACU
3. *Chamaedaphne calyculata*	5	No	OBL
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	80	Yes	FAC
2. *Kalmia angustifolia*	10	No	FAC
3. *Pteridium aquilinum*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	130	x 3 =	390
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	180	(A)	575 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-32_UPL-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	7.5YR 2.5/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-33_PSS-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Bog **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7748216801 **Long:** -67.8155495693 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No _ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-MJR-33

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	0
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-33_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	15	Yes	FACW
2. *Chamaedaphne calyculata*	15	Yes	OBL
3. *Picea mariana*	10	No	FACW
4. *Viburnum nudum*	8	No	FACW
5. *Ilex verticillata*	5	No	FACW
6. *Kalmia angustifolia*	5	No	FAC
7.			
	58	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Carex crinita*	70	Yes	OBL
2. *Glyceria striata*	20	Yes	OBL
3. *Rubus hispidus*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	105	x 1 =	105
FACW species	48	x 2 =	96
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	158	(A)	216 (B)
Prevalence Index = B/A =	1.4		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-33_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Silt Loam	
3 - 18	10YR 5/1	95	10YR 5/6	5	C	M	Silty Clay	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-33_UPL-1
Investigator(s): Matt Regan, Matt Todd, Joe roy, Derek Benedix **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7750307247 **Long:** -67.8158617952 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___		
Hydric Soil Present?	Yes ___ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ___ No ✓**
Wetland Hydrology Present?	Yes ___ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No ✓	Depth (inches):	
Water Table Present?	Yes ___ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ___ No ✓
Saturation Present? (includes capillary fringe)	Yes ___ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-33_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	30	Yes	FACW
2. *Picea rubens*	10	Yes	FACU
3. *Betula populifolia*	5	No	FAC
4. *Acer rubrum*	5	No	FAC
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	60	Yes	FAC
2. *Picea rubens*	5	No	FACU
3. *Kalmia angustifolia*	5	No	FAC
4.			
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	30	Yes	FAC
2. *Coptis trifolia*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	105	x 3 =	315
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	160	(A)	455 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-33_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-34_PFO-1
Investigator(s): Matt Regan, Matt Todd, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7742960509 **Long:** -67.8242315446 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWIclassification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-MJR-34

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
✓ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	0	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-34_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Pinus strobus*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Aronia arbutifolia*	30	Yes	FACW
2. *Acer rubrum*	5	No	FAC
3. *Abutilon theophrasti*	5	No	FACU
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Carex crinita*	75	Yes	OBL
2. *Glyceria striata*	15	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	90	x 1 =	90
FACW species	30	x 2 =	60
FAC species	55	x 3 =	165
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	185	(A)	355 (B)

Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-34_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-34_UPL-1
Investigator(s): Matt Regan, Matt Todd, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.77423721 **Long:** -67.8246512265 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No ✓		
Hydric Soil Present?	Yes ___ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ___ No ✓**
Wetland Hydrology Present?	Yes ___ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No ✓	Depth (inches):	
Water Table Present?	Yes ___ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ___ No ✓
Saturation Present? (includes capillary fringe)	Yes ___ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-34_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	30	Yes	FACU
2. *Pinus strobus*	10	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Kalmia angustifolia*	25	Yes	FAC
2. *Betula populifolia*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Kalmia angustifolia*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	125 (A)		445 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-34_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	7.5YR 2.5/2	100					Sandy Loam	
2 - 18	10YR 5/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-35_PSS-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7766502342 **Long:** -67.8365829494 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-MJR-35

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-35_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2. *Picea rubens*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	60	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2. *Kalmia angustifolia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	15	x 3 =	45
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	90	(A)	205 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-35_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	7.5YR 2.5/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** ,Columbia, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-MJR-35_UPL-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7765158723 **Long:** -67.8366190755 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___		
Hydric Soil Present?	Yes ___ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ___ No ✓**
Wetland Hydrology Present?	Yes ___ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No ✓	Depth (inches):	
Water Table Present?	Yes ___ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ___ No ✓
Saturation Present? (includes capillary fringe)	Yes ___ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-35_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	30	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	10	Yes	FACU
2. *Kalmia angustifolia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals	65	(A)	225 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-35_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	7.5YR 2.5/2	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-36_PFO-1
Investigator(s): Matt Regan Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7268906469 **Long:** -67.9091791157 **Datum:** WGS84
Soil Map Unit Name: Masardis-Sheepscot complex, 0 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___		
Hydric Soil Present?	Yes ✓ No ___	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ___**
Wetland Hydrology Present?	Yes ✓ No ___	**If yes, optional Wetland Site ID:**	W-MJR-36

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ___	Depth (inches):	0	**Wetland Hydrology Present?** Yes ✓ No ___
Saturation Present? (includes capillary fringe)	Yes ✓ No ___	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-36_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Quercus rubra*	10	Yes	FACU
3. *Pinus strobus*	5	No	FACU
4. *Betula populifolia*	5	No	FAC
5.			
6.			
7.			
	40	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	15	Yes	FACW
2. *Alnus incana*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2. *Parathelypteris noveboracensis*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	35	x 3 =	105
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	95	(A)	255 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-36_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-36_UPL-1
Investigator(s): Matt Regan, Matt Todd **Section, Township, Range:**
Landform(hillslope,terrace,etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion(LRRorMLRA): LRR R **Lat:** 44.7269601748 **Long:** -67.9092962109 **Datum:** WGS84
SoilMapUnitName: Masardis-Sheepscot complex, 0 to 15 percent slopes **NWI classification:**
Areclimatic/hydrologicconditionsonthesitetypicalforthistimeofyear? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No ✓		
Hydric Soil Present?	Yes ___ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ✓**
Wetland Hydrology Present?	Yes ___ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No ✓	Depth (inches):	
Water Table Present?	Yes ___ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ___ No ✓
Saturation Present? (includes capillary fringe)	Yes ___ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-36_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	35	Yes	FACU
2. *Pinus strobus*	10	No	FACU
3. *Betula populifolia*	10	No	FAC
4.			
5.			
6.			
7.			
	55	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	10	Yes	FACU
2. *Betula populifolia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	10	Yes	FACU
2. *Kalmia angustifolia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	40	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals	85	(A)	320 (B)
Prevalence Index = B/A =	3.8		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-36_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	7.5YR 2.5/1	100					Loam	
4 - 5	7.5YR 4/1	100					Sandy Loam	
5 - 20	10YR 5/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-37_PUB-1
Investigator(s): Matt Regan , Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Pond **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7270247993 **Long:** -67.9132564925 **Datum:** WGS84
Soil Map Unit Name: Masardis fine sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___		
Hydric Soil Present?	Yes ✓ No ___	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ___**
Wetland Hydrology Present?	Yes ✓ No ___	**If yes, optional Wetland Site ID:**	W-MJR-37

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PUB.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ___	Depth (inches):	36	
Water Table Present?	Yes ✓ No ___	Depth (inches):	0	**Wetland Hydrology Present?** Yes ✓ No ___
Saturation Present? (includes capillary fringe)	Yes ✓ No ___	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-37_PUB-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	10	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	20	(A)	50 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-37_PUB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
-								

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
_✓_ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Due to inundation a clear soil profile was unobtainable. Soils are assumed to be hydric. Soils were assumed to be hydric due to the presence of inundation, FACW and OBL vegetation species, and a definitive wetland boundary.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-37_UPL-1
Investigator(s): Matt Regan , Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7270233743 **Long:** -67.9131253996 **Datum:** WGS84
Soil Map Unit Name: Masardis fine sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No ✓		
Hydric Soil Present?	Yes ___ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ___ No ✓**
Wetland Hydrology Present?	Yes ___ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No ✓	Depth (inches):	
Water Table Present?	Yes ___ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ___ No ✓
Saturation Present? (includes capillary fringe)	Yes ___ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-37_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Poa pratensis*	30	Yes	FACU
2. *Rubus hispidus*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	55	(A)	200 (B)
Prevalence Index = B/A =	3.6		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-37_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/1	100					Loamy Sand	
2 - 16	10YR 4/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 16

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-38_PFO-1
Investigator(s): Matt Regan, MJT, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swamp **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7259504488 **Long:** -67.9064619542 **Datum:** WGS84
Soil Map Unit Name: Masardis-Sheepscot complex, 0 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___		
Hydric Soil Present?	Yes ✓ No ___	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ___**
Wetland Hydrology Present?	Yes ✓ No ___	**If yes, optional Wetland Site ID:**	W-MJR-38

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ___	Depth (inches):	8	
Water Table Present?	Yes ✓ No ___	Depth (inches):	0	**Wetland Hydrology Present?** Yes ✓ No ___
Saturation Present? (includes capillary fringe)	Yes ✓ No ___	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-38_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	10	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3. *Betula papyrifera*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	60	Yes	FACW
2. *Chamaedaphne calyculata*	30	Yes	OBL
3. *Rosa palustris*	5	No	OBL
4.			
5.			
6.			
7.			
	95	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	5	Yes	FAC
2. *Chamaedaphne calyculata*	5	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **5** (A)

Total Number of Dominant Species Across All Strata: **7** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **71.4** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	40	x 1 =	40
FACW species	60	x 2 =	120
FAC species	10	x 3 =	30
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	125	(A)	250 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-38_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Mucky Peat	
8 - 18	10YR 5/2	80	7.5YR 5/4	20			Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-MJR-38_UPL-1
Investigator(s): Matt Regan , Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7259785282 **Long:** -67.9064818193 **Datum:** WGS84
Soil Map Unit Name: Masardis-Sheepscot complex, 0 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____
Are Vegetation ____, Soil ____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓		
Hydric Soil Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes** _____ **No** ✓
Wetland Hydrology Present?	Yes _____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____ No ✓	Depth (inches):	
Water Table Present?	Yes _____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes _____ No ✓
Saturation Present? (includes capillary fringe)	Yes _____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-MJR-38_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	30	Yes	FACU
2. *Quercus rubra*	10	No	FACU
3. *Betula papyrifera*	10	No	FACU
4. *Picea rubens*	5	No	FACU
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	5	Yes	FACU
2. *Picea rubens*	5	Yes	FACU
3. *Betula papyrifera*	5	Yes	FACU
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	20	Yes	FACU
2. *Kalmia angustifolia*	10	Yes	FAC
3. *Pteridium aquilinum*	10	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	110	(A)	430 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-MJR-38_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	7.5YR 2.5/2	100					Loam	
5 - 18	10YR 4/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-01_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7740124911 **Long:** -67.8640800343 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-01

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	2	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-01_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	50	Yes	FAC
2. *Betula alleghaniensis*	20	Yes	FAC
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	95	(A)	285 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-01_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 7

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-01_PUB-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7741018003 **Long:** -67.8649455496 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-01

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PUB. Beaver activity.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓_ Surface Water (A1)
- _✓_ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- _✓_ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- _✓_ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	24
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-01_PUB-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	20	Yes	FACU
2. *Scirpus cyperinus*	15	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	15	x 1 =	15
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	35 (A)		95 (B)
Prevalence Index = B/A =	2.7		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-01_PUB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
-								

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
_✓_ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Due to inundation a clear soil profile was unobtainable. Soils are assumed to be hydric.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-01_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Low Hill **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7739230562 **Long:** -67.863852298 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-01_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	35	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3. *Picea rubens*	20	Yes	FACU
4. *Betula alleghaniensis*	10	No	FAC
5.			
6.			
7.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	30	Yes	FACU
2. *Betula papyrifera*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	140	(A)	520 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-01_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 4/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-01_UPL-2
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.774023681 **Long:** -67.8650362418 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Old access road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-01_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	20	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	40	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **3** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals	85	(A)	340 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-01_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 4/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-02_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** Undulating **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.774095011 **Long:** -67.8626629059 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-02

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	2	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-02_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Betula papyrifera*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	30	Yes	FAC
2. *Betula papyrifera*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus hispidus*	25	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	70	x 3 =	210
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	125	(A)	380 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-02_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-02_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7742495314 **Long:** -67.8624206689 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Old access road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-02_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	30	Yes	FACU
2. *Picea rubens*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula papyrifera*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **3** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	60	(A)	240 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-02_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
-								

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compaction
Depth (inches): 0

Hydric Soil Present? Yes ____ No ✓

Remarks:

Refusal due to coarse fragments.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-03_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7749837442 **Long:** -67.857047869 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	3	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-03_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Betula papyrifera*	15	Yes	FACU
3. *Abies balsamea*	10	No	FAC
4.			
5.			
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	20	Yes	FAC
2. *Picea rubens*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	105	(A)	340 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-03_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Fibric Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-03_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7748238594 **Long:** -67.8569480405 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-03_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	70	Yes	FACU
2. *Picea pungens*	15	No	FACU
3.			
4.			
5.			
6.			
7.			
	85	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	100	(A)	400 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-03_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/2	100					Org Duff	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-04_PSS-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Bog **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7844448174 **Long:** -67.9218875059 **Datum:** WGS84
Soil Map Unit Name: Wonsqueak and Bucksport mucks, 0 to 2 percent slopes, frequently flooded **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-04

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
_✓_ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	1	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-04_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	60	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	100	(A)	240 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

_✓_ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_✓_ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-04_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/3	100					Org matter Peat	
3 - 20	10YR 2/1	100					Org matter Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-19
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-04_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Toe **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7839758918 **Long:** -67.9224583135 **Datum:** WGS84
Soil Map Unit Name: Wonsqueak and Bucksport mucks, 0 to 2 percent slopes, frequently flooded **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-04_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	40	Yes	FAC
2. *Pinus strobus*	30	Yes	FACU
3. *Betula papyrifera*	15	No	FACU
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	30	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals	125	(A)	460 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-04_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Org Duff	
4 - 8	10YR 5/1	100					Sandy Loam	Spodisol
8 - 13	10YR 3/3	100					Org matter Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Roots
Depth (inches): 13

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-05_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7872348596 **Long:** -67.8864626494 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-05

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
_✓_ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-05_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	30	Yes	FAC
2. *Pinus strobus*	30	Yes	FACU
3. *Picea rubens*	20	Yes	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	30	Yes	FACW
2. *Ilex verticillata*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	40	Yes	FAC
2. *Pteridium aquilinum*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	70	x 3 =	210
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	175	(A)	540 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-05_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-05_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7872408526 **Long:** -67.8864789941 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-05_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	40	Yes	FACU
2. *Betula papyrifera*	30	Yes	FACU
3. *Quercus rubra*	15	No	FACU
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	40	Yes	FAC
2. *Pteridium aquilinum*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals	155 (A)		580 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-05_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Organic Duff	
3 - 6	10YR 4/1	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-06_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7871812992 **Long:** -67.8887644876 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-06

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	5
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-06_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	25	Yes	FACU
2. *Pinus strobus*	20	Yes	FACU
3. *Betula alleghaniensis*	15	Yes	FAC
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	20	Yes	FACW
2. *Pinus strobus*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	25	x 3 =	75
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals	95	(A)	315 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-06_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 2/2	100					Peat	
5 - 20	2.5Y 5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
X 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-06_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Toe **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7866550833 **Long:** -67.8889873624 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-06_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	40	Yes	FACU
2. *Populus grandidentata*	30	Yes	FACU
3. *Picea rubens*	10	No	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	20	Yes	FACU
2. *Pinus strobus*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	20	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals	110	(A)	435 (B)
Prevalence Index = B/A =	4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-06_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/1	100					Organic Duff	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-08_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Toe **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.785846104 **Long:** -67.8793713079 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-08

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	5	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-08_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	30	Yes	FAC
2. *Picea rubens*	20	Yes	FACU
3. *Abies balsamea*	15	Yes	FAC
4. *Pinus strobus*	8	No	FACU
5.			
6.			
7.			
	73	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	40	Yes	FACW
2. *Abies balsamea*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	55	x 3 =	165
FACU species	38	x 4 =	152
UPL species	0	x 5 =	0
Column Totals	133	(A)	397 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-08_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 7

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-08_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7856118717 **Long:** -67.8794943542 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-08_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	60	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	15	Yes	FACU
2. *Abies balsamea*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Picea rubens*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals	90	(A)	355 (B)
Prevalence Index = B/A =	3.9		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-08_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Organic Duff	
2 - 3	10YR 7/1	100					Sandy Loam	
3 - 4	10YR 6/8	100					Sandy Loam	
4 - 7	7.5YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-NSD-09_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Channel **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7853275575 **Long:** -67.8786911164 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-09

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-09_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Actaea rubra*	30	Yes	FACU
2. *Abies balsamea*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2. *Abies balsamea*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	25	x 3 =	75
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	90	(A)	295 (B)
Prevalence Index = B/A =	3.3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-09_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/1	100					Hemic Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 7

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2019-Nov-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-09_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7854687926 **Long:** -67.8780338914 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-09_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	70	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	20	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Picea rubens*	5	Yes	FACU
2. *Kalmia angustifolia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals	100	(A)	395 (B)
Prevalence Index = B/A =	4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-09_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Organic Duff	
2 - 5	10YR 6/8	100					Sandy Loam	
5 - 7	10YR 7/2	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-10_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7850956303 **Long:** -67.8746389691 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-10

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Recent snow.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-10_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	50	Yes	FAC
2. *Pinus strobus*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	25	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2. *Abies balsamea*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	80	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	80	x 3 =	240
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	130	(A)	400 (B)
Prevalence Index = B/A =	3.1		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-10_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Fibric Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-10_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7850604682 **Long:** -67.8746813816 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Recent snow.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-10_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	30	Yes	FACU
2. *Populus grandidentata*	20	Yes	FACU
3. *Pinus strobus*	20	Yes	FACU
4. *Acer rubrum*	10	No	FAC
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	20	Yes	FACU
2. *Abies balsamea*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	20	Yes	FACU
2. *Abies balsamea*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals	135 (A)		515 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-10_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Organic Duff	
3 - 8	10YR 3/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-11_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7873978038 **Long:** -67.8733641655 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-11

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-11_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	60	Yes	FAC
2. *Picea rubens*	15	No	FACU
3. *Acer rubrum*	15	No	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	15	Yes	FAC
2. *Picea rubens*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	90	x 3 =	270
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	120 (A)		370 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-11_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-11_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Knob **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7874232848 **Long:** -67.8732394428 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Recent snow.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-11_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	40	Yes	FAC
2. *Pinus strobus*	25	Yes	FACU
3. *Acer rubrum*	20	Yes	FAC
4. *Betula papyrifera*	5	No	FACU
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	20	Yes	FACU
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	25	Yes	FAC
2. *Pteridium aquilinum*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	42.9	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	155	(A)	535 (B)
Prevalence Index = B/A =	3.5		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-11_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Organic Duff	
4 - 6	10YR 5/2	100					Sandy Loam	
6 - 9	10YR 3/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 9

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-12_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7889125394 **Long:** -67.8720155173 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-12

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Recent snow.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-12_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Picea rubens*	20	Yes	FACU
3. *Betula papyrifera*	10	No	FACU
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	40	Yes	FACW
2. *Kalmia angustifolia*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	55	x 3 =	165
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals	135	(A)	405 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-12_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 2/1	100					Org matter Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 5

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-12_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7889559158 **Long:** -67.8720902838 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Recent snow.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-12_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus grandidentata*	60	Yes	FACU
2. *Betula papyrifera*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	35	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	30	Yes	FAC
2. *Pteridium aquilinum*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	125	x 4 =	500
UPL species	0	x 5 =	0
Column Totals	155	(A)	590 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-12_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Organic Duff	
3 - 6	10YR 3/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-13_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Channel **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7902737605 **Long:** -67.8715230805 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-13

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Recent snow.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-13_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Picea rubens*	25	Yes	FACU
3. *Quercus rubra*	10	No	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	15	Yes	FACU
2. *Quercus rubra*	8	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	23	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	25	Yes	FACW
2. *Kalmia angustifolia*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	50	x 3 =	150
FACU species	58	x 4 =	232
UPL species	0	x 5 =	0
Column Totals	133	(A)	432 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-13_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-13_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Low Hill **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7903557355 **Long:** -67.8715524171 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-13_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	50	Yes	FACU
2. *Quercus rubra*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	30	Yes	FAC
2. *Pteridium aquilinum*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals	110	(A)	410 (B)
Prevalence Index = B/A =	3.7		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-13_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Organic Duff	
4 - 7	10YR 4/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-14_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Channel **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7906098748 **Long:** -67.8711637483 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-14

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Recent snow.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	3	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-14_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Betula alleghaniensis*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	20	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	40	Yes	FACW
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	70	x 3 =	210
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	140	(A)	410 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-14_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-21
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-14_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Low Hill **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7906040913 **Long:** -67.8711469006 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Recent snow.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-14_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	50	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	40	Yes	FAC
2. *Pteridium aquilinum*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	130	(A)	460 (B)
Prevalence Index = B/A =	3.5		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-14_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Organic Duff	
3 - 6	10YR 4/2	100					Sandy Loam	
6 - 10	10YR 3/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-15_PFO-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swamp **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.785586726 **Long:** -67.8720553313 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-15

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-15_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	60	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	25	Yes	FACW
2. *Kalmia angustifolia*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	50	x 3 =	150
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals	150	(A)	500 (B)
Prevalence Index = B/A =	3.3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-15_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-15_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.784967932 **Long:** -67.8729474173 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-15_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	50	Yes	FACU
2. *Betula papyrifera*	20	Yes	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	15	Yes	FACU
2. *Quercus rubra*	10	Yes	FACU
3. *Picea rubens*	5	No	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	30	Yes	FAC
2. *Pteridium aquilinum*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals	160	(A)	600 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-15_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 2/1	100					Organic Duff	
5 - 10	10YR 3/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-16_PUB-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7999387654 **Long:** -67.9183220957 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-NSD-16

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PUB.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	36
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-16_PUB-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	5	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	5	(A)	5 (B)
Prevalence Index = B/A =	1		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-16_PUB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
-								

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
_✓_ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Due to inundation a clear soil profile was unobtainable. Soils are assumed to be hydric.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-16_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7998721293 **Long:** -67.9184027296 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ____	Depth (inches):	
Water Table Present?	Yes ____ No ____	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ____	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-16_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	30	Yes	FACU
2. *Quercus rubra*	30	Yes	FACU
3. *Picea rubens*	10	No	FACU
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	10	Yes	FAC
2. *Pteridium aquilinum*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	110	(A)	430 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-16_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/1	100					Org matter Loamy Sand	
2 - 5	10YR 3/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 5

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-17_PEM-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Bog **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7167013959 **Long:** -67.9128678237 **Datum:** WGS84
Soil Map Unit Name: Wonsqueak and Bucksport mucks, 0 to 2 percent slopes, frequently flooded **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-NSD-17

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
_✓_ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	2	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-17_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Chamaedaphne calyculata*	80	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	80	x 1 =	80
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	85	(A)	100 (B)
Prevalence Index = B/A =	1.2		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-17_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 2/2	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-17_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 10 to 15
Subregion (LRR or MLRA): LRR R **Lat:** 44.7166424711 **Long:** -67.9127936438 **Datum:** WGS84
Soil Map Unit Name: Wonsqueak and Bucksport mucks, 0 to 2 percent slopes, frequently flooded **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-17_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	40	Yes	FAC
2. *Betula papyrifera*	25	Yes	FACU
3. *Quercus rubra*	15	No	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	15	Yes	FACU
2. *Pinus strobus*	5	Yes	FACU
3. *Prunus pensylvanica*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	35	Yes	FAC
2. *Pteridium aquilinum*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	28.6	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals	155	(A)	545 (B)
Prevalence Index = B/A =	3.5		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-17_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Sandy Loam	
4 - 8	10YR 3/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-18_PUB-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.721660926 **Long:** -67.901163837 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-NSD-18

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PUB.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	36
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-18_PUB-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Alnus incana*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	5	(A)	10 (B)
Prevalence Index = B/A =	2		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-18_PUB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
-								

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
_✓_ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Due to inundation a clear soil profile was unobtainable. Soils are assumed to be hydric.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2019-Nov-22
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-NSD-18_UPL-1
Investigator(s): Nick DeJohn, Sam Pratt, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7218214814 **Long:** -67.9011503421 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-NSD-18_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	40	Yes	FACU
2. *Betula alleghaniensis*	25	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals	90	(A)	335 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-NSD-18_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Organic Duff	
3 - 6	10YR 4/1	100					Sandy Loam	
6 - 10	10YR 3/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-01_PEM-1
Investigator(s): Thomas Errico, Kate Harrelson, Joe Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.775833292 **Long:** -67.7905699891 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-THE-01

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Recently cleared.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ✓ No ____	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-01_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2. *Acer rubrum*	5	Yes	FAC
3. *Fallopia scandens*	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	20	(A)	50 (B)
Prevalence Index = B/A =	2.5		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-01_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Muck	Sand present
4 - 9	10YR 4/2	95	10YR 4/6	5	C	M	Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 9

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-01_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy, Gabe Pelletier **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7759697074 **Long:** -67.7904116549 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Recently logged/cleared for MET Tower.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-01_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Acer rubrum*	10	Yes	FAC
2. *Populus tremuloides*	5	Yes	FACU
3. *Osmundastrum cinnamomeum*	5	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	20	(A)	60 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-01_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	7.5YR 2.5/1	100					Sandy Loam	
1 - 4	7.5YR 3/3	100					Loamy Sand	
4 - 8	7.5YR 4/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Boulder
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-02_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7680422 **Long:** -67.8325505 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-THE-02

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	1	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-02_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	30	Yes	FACW
2. *Acer rubrum*	30	Yes	FAC
3. *Abies balsamea*	15	No	FAC
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	10	Yes	FACW
2. *Abies balsamea*	5	Yes	FAC
3. *Picea mariana*	5	Yes	FACW
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Acer rubrum*	5	Yes	FAC
2. *Carex trisperma*	5	Yes	OBL
3. *Trientalis borealis*	3	Yes	FAC
4. *Aralia nudicaulis*	2	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	45	x 2 =	90
FAC species	58	x 3 =	174
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals	115	(A)	297 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-02_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 5

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-02_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.768177 **Long:** -67.8325145 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-02_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	25	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3. *Pinus strobus*	10	No	FACU
4. *Abies balsamea*	5	No	FAC
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Kalmia angustifolia*	10	Yes	FAC
2. *Viburnum nudum*	5	Yes	FACW
3. *Gaylussacia baccata*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	30	Yes	FACU
2. *Gaultheria procumbens*	30	Yes	FACU
3. *Pteridium aquilinum*	15	No	FACU
4. *Trientalis borealis*	10	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	45	x 3 =	135
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals	165	(A)	605 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-02_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/2	100					Loamy Sand	
2 - 14	2.5Y 6/1	100					Loamy Sand	
14 - 16	7.5YR 4/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 16

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-03_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7719631 **Long:** -67.8354997 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-THE-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
✓ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-03_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Quercus rubra*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	35	Yes	FACW
2. *Pinus strobus*	5	No	FACU
3. *Corylus cornuta*	5	No	FACU
4.			
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Viburnum nudum*	5	Yes	FACW
2. *Vaccinium angustifolium*	2	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	7	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	60	x 3 =	180
FACU species	32	x 4 =	128
UPL species	0	x 5 =	0
Column Totals	132	(A)	388 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-03_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Sandy Loam	
3 - 8	10YR 5/2	95	10YR 5/8	5	C	M	Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-03_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7721677 **Long:** -67.8355695 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-03_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	70	Yes	FACU
2. *Acer rubrum*	5	No	FAC
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	15	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	20	Yes	FACU
2. *Gaultheria procumbens*	15	Yes	FACU
3. *Vaccinium angustifolium*	15	Yes	FACU
4. *Trientalis borealis*	10	No	FAC
5. *Cornus canadensis*	10	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	140	x 4 =	560
UPL species	0	x 5 =	0
Column Totals	170 (A)		650 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-03_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Sandy Loam	
1 - 4	10YR 5/1	100					Loamy Sand	
4 - 8	7.5YR 3/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-04_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7770257 **Long:** -67.8375232 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-04

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-04_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	35	Yes	FACU
2. *Picea rubens*	10	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Nemopanthus mucronatus*	30	Yes	OBL
2. *Viburnum nudum*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	20	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	30	x 1 =	30
FACW species	15	x 2 =	30
FAC species	10	x 3 =	30
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals	120	(A)	350 (B)
Prevalence Index = B/A =	2.9		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-04_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 30	10YR 2/2	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-04_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7771866 **Long:** -67.8376014 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-04_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	55	Yes	FACU
2. *Pinus strobus*	15	No	FACU
3. *Pinus resinosa*	10	No	FACU
4. *Betula populifolia*	5	No	FAC
5.			
6.			
7.			
	85	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	10	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	25	Yes	FACU
2. *Gaultheria procumbens*	20	Yes	FACU
3. *Pteridium aquilinum*	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	150	x 4 =	600
UPL species	0	x 5 =	0
Column Totals	160 (A)		630 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-04_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 4	10YR 5/1	100					Loamy Sand	
4 - 7	10YR 5/8	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-05_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7773505 **Long:** -67.8388278 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-05

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	24	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-05_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	70	Yes	FAC
2. *Thuja occidentalis*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2. *Pinus strobus*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	60	Yes	FACW
2. *Trientalis borealis*	5	No	FAC
3. *Aralia nudicaulis*	3	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	68	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	75	x 3 =	225
FACU species	18	x 4 =	72
UPL species	0	x 5 =	0
Column Totals	178	(A)	467 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-05_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 32	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-05_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7773137 **Long:** -67.838698 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-05_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Quercus rubra*	30	Yes	FACU
3. *Pinus strobus*	15	No	FACU
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	15	Yes	FACU
2. *Gaylussacia baccata*	15	Yes	FACU
3. *Hamamelis virginiana*	5	No	FACU
4. *Acer rubrum*	5	No	FAC
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	25	Yes	FACU
2. *Pteridium aquilinum*	20	Yes	FACU
3. *Vaccinium angustifolium*	20	Yes	FACU
4. *Aralia nudicaulis*	10	No	FACU
5. *Kalmia angustifolia*	10	No	FAC
6. *Trientalis borealis*	5	No	FAC
7. *Cornus canadensis*	5	No	FAC
8.			
9.			
10.			
11.			
12.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	155	x 4 =	620
UPL species	0	x 5 =	0
Column Totals	225	(A)	830 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-05_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Sandy Loam	
1 - 3	10YR 5/1	100					Loamy Sand	
3 - 10	10YR 5/8	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-06_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7765509 **Long:** -67.8401236 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-06

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	2	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-06_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	80	Yes	FAC
2. *Pinus strobus*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	5	Yes	FACW
2. *Acer rubrum*	3	Yes	FAC
3. *Kalmia angustifolia*	2	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	90	x 3 =	270
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	100	(A)	300 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-06_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 24	10YR 2/1	100					Muck	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-06_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7766174 **Long:** -67.8401038 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-06_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	40	Yes	FACU
2. *Quercus rubra*	10	No	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	20	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	20	Yes	FACU
2. *Pteridium aquilinum*	15	Yes	FACU
3. *Gaultheria procumbens*	15	Yes	FACU
4. *Cornus canadensis*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals	130	(A)	510 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-06_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Sandy Loam	
4 - 10	10YR 5/2	100					Loamy Sand	
10 - 20	10YR 4/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-07_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7763091 **Long:** -67.8409482 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-07

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Potential WoSS with streams and hydologic connection to larger wetland system to the north.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-07_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	40	Yes	FACU
2. *Acer rubrum*	25	Yes	FAC
3. *Thuja occidentalis*	15	No	FACW
4. *Abies balsamea*	5	No	FAC
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	5	Yes	FACW
2. *Picea rubens*	5	Yes	FACU
3. *Abies balsamea*	5	Yes	FAC
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	60	Yes	FACW
2. *Trientalis borealis*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	40	x 3 =	120
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	165	(A)	460 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-07_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 36	10YR 2/2	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-07_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7762633 **Long:** -67.8407407 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-07_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Betula papyrifera*	25	Yes	FACU
3. *Pinus strobus*	20	Yes	FACU
4. *Quercus rubra*	5	No	FACU
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	10	Yes	FACU
2. *Pinus strobus*	10	Yes	FACU
3. *Acer rubrum*	5	Yes	FAC
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	30	Yes	FACU
2. *Aralia nudicaulis*	20	Yes	FACU
3. *Cornus canadensis*	20	Yes	FAC
4. *Pteridium aquilinum*	10	No	FACU
5. *Medeola virginiana*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	195	(A)	720 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-07_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Sandy Loam	
1 - 6	10YR 5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-08_PSS-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Ditch **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7664218 **Long:** -67.8374256 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-THE-08

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Better access to the east. All upland to blueberry field. Portion is roadside ditch adjacent to blueberry ag field. .

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-08_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	20	Yes	FAC
2. *Salix bebbiana*	15	Yes	FACW
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Spiraea alba*	40	Yes	FACW
2. *Apocynum cannabinum*	10	No	FAC
3. *Euthamia graminifolia*	5	No	FAC
4. *Scirpus atrovirens*	5	No	OBL
5. *Kalmia angustifolia*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	55	x 2 =	110
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	105	(A)	250 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-08_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 5	7.5YR 4/1	98	7.5YR 4/6	2	C	M	Sandy Loam	
5 - 12	7.5YR 4/2	95	7.5YR 4/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock/Gravel
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-08_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7663663 **Long:** -67.8375059 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. On edge of active blueberry ag field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-08_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	30	Yes	FAC
2. *Quercus rubra*	10	Yes	FACU
3. *Acer rubrum*	10	Yes	FAC
4.			
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	45	Yes	FACU
2. *Apocynum cannabinum*	15	Yes	FAC
3. *Pteridium aquilinum*	5	No	FACU
4. *Comptonia peregrina*	5	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	60	x 4 =	240
UPL species	5	x 5 =	25
Column Totals	120 (A)		430 (B)
Prevalence Index = B/A =	3.6		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-08_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 4/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 5

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-09_PEM-3
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7702514 **Long:** -67.8394939 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ✓, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-THE-09

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Located in active blueberry ag field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
✓ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-09_PEM-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	70	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	70	x 1 =	70
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	70	(A)	70 (B)
Prevalence Index = B/A =	1		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-09_PEM-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Sandy Loam	
3 - 6	2.5Y 4/1	95	7.5YR 3/4	5	C	M/PL	Sandy Loam	
6 - 10	7.5YR 3/3	100					Sandy Loam	Mixed
10 - 15	5Y 5/2	90	10YR 5/8	10	C	M	Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 15

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-09_PFO-1
Investigator(s): Thomas Errico, Kate Harreslon, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7701571 **Long:** -67.8397125 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-09

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-09_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	55	Yes	FACU
2. *Picea mariana*	25	Yes	FACW
3. *Betula papyrifera*	5	No	FACU
4.			
5.			
6.			
7.			
	85	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	20	Yes	FACW
2. *Nemopanthus mucronatus*	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Carex trisperma*	5	Yes	OBL
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	83.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	15	x 1 =	15
FACW species	45	x 2 =	90
FAC species	5	x 3 =	15
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	125	(A)	360 (B)
Prevalence Index = B/A =	2.9		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-09_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Peat	
4 - 30	10YR 2/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-09_PSS-2
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7704236 **Long:** -67.8396016 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-09

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Rutting.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-09_PSS-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	65	Yes	FAC
2. *Acer rubrum*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	15	Yes	OBL
2. *Osmundastrum cinnamomeum*	15	Yes	FACW
3. *Osmunda spectabilis*	10	Yes	OBL
4. *Rubus hispidus*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	25	x 1 =	25
FACW species	20	x 2 =	40
FAC species	70	x 3 =	210
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	115	(A)	275 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-09_PSS-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 8	10YR 4/2	95	10YR 4/6	5	C	M	Sandy Loam	
8 - 10	10YR 4/1	95	10YR 4/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-09_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.770593 **Long:** -67.8394888 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-09_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	60	Yes	FACU
2. *Picea rubens*	5	No	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	15	Yes	FACU
2. *Picea rubens*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	10	Yes	FAC
2. *Pteridium aquilinum*	10	Yes	FACU
3. *Vaccinium angustifolium*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	115	(A)	445 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-09_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Loam	
3 - 11	10YR 6/1	100					Loamy Sand	
11 - 14	7.5YR 3/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 14

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-09_UPL-2
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Knob **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7704313 **Long:** -67.8395416 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-09_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	85	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	85	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	10	Yes	FACU
2. *Pteridium aquilinum*	5	Yes	FACU
3. *Gaultheria procumbens*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	105	(A)	335 (B)
Prevalence Index = B/A =	3.2		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-09_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	7.5YR 2.5/1	100					Gravelly Loamy Sand	
3 - 8	7.5YR 4/4	100					Gravelly Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-09_UPL-3
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.770174 **Long:** -67.8395821 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Active blueberry ag field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-09_UPL-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	85	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals	85	(A)	340 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-09_UPL-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 4	2.5Y 6/2	100					Loamy Sand	
4 - 20	10YR 5/8	100					Loamy Sand	Coarse

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-10_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7711106 **Long:** -67.8393693 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-10

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
_✓_ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	3	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-10_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	80	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	55	Yes	FACW
2. *Impatiens capensis*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	150 (A)		390 (B)
Prevalence Index = B/A =	2.6		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-10_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	100					Mucky Peat	
4 - 9	10YR 3/2	95	7.5YR 3/4	5	C	PL	Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
✓ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock/Boulder
Depth (inches): 9

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-10_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Knoll **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7710249 **Long:** -67.83939 **Datum:** WGS84
Soil Map Unit Name: Sheepscot-Croghan-Kinsman complex, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-10_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	95	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	5	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	5	Yes	FACU
2. *Gaultheria procumbens*	5	Yes	FACU
3. *Cornus canadensis*	5	Yes	FAC
4. *Pteridium aquilinum*	5	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	28.6	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals	125	(A)	490 (B)
Prevalence Index = B/A =	3.9		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-10_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loamy Sand	
2 - 4	2.5Y 5/1	100					Loamy Sand	
4 - 6	10YR 4/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-11_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7737164 **Long:** -67.8388817 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-11

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	1	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-11_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	70	Yes	FAC
2. *Thuja occidentalis*	5	No	FACW
3. *Abies balsamea*	5	No	FAC
4. *Betula papyrifera*	5	No	FACU
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	5	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Trientalis borealis*	2	No	FAC
2. *Viola cucullata*	2	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	4	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	2	x 1 =	2
FACW species	5	x 2 =	10
FAC species	82	x 3 =	246
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	99 (A)		298 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-11_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 2/2	100					Mucky Peat	
9 - 17	2.5Y 6/1	100					Fine Sandy Loam	
17 - 20	7.5YR 2.5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
✓ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-11_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Knoll **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7735666 **Long:** -67.8388478 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-11_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	65	Yes	FACU
2. *Quercus rubra*	10	No	FACU
3. *Acer rubrum*	10	No	FAC
4. *Betula papyrifera*	5	No	FACU
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	20	Yes	FACU
2. *Cornus canadensis*	20	Yes	FAC
3. *Trientalis borealis*	15	Yes	FAC
4. *Gaultheria procumbens*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	180 (A)		675 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-11_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 3	7.5YR 6/1	100					Loamy Sand	
3 - 18	7.5YR 3/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-12_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7764557 **Long:** -67.8390382 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-12

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
_✓ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	10	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-12_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	55	Yes	FAC
2. *Pinus strobus*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	10	Yes	FACW
2. *Vaccinium corymbosum*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	2	No	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	17	x 2 =	34
FAC species	55	x 3 =	165
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	92	(A)	279 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-12_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/2	100					Mucky Peat	
8 - 10	10YR 2/1	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-11
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-12_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7765023 **Long:** -67.83901 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-12_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	30	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3. *Betula papyrifera*	5	No	FACU
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2. *Gaylussacia baccata*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	20	Yes	FACU
2. *Pteridium aquilinum*	15	Yes	FACU
3. *Kalmia angustifolia*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals	120 (A)		440 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-12_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Loam	
1 - 3	7.5YR 5/1	100					Sandy Loam	
3 - 8	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-13_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.779331 **Long:** -67.8564454 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-13

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-13_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Abies balsamea*	25	Yes	FAC
3. *Pinus strobus*	5	No	FACU
4. *Picea rubens*	5	No	FACU
5. *Betula alleghaniensis*	5	No	FAC
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	10	Yes	FAC
2. *Acer rubrum*	5	Yes	FAC
3. *Vaccinium corymbosum*	5	Yes	FACW
4. *Picea rubens*	5	Yes	FACU
5. *Hamamelis virginiana*	3	No	FACU
6.			
7.			
	28	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2. *Aralia nudicaulis*	5	No	FACU
3. *Coptis trifolia*	5	No	FACW
4. *Maianthemum canadense*	3	No	FACU
5. *Trientalis borealis*	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	82	x 3 =	246
FACU species	26	x 4 =	104
UPL species	0	x 5 =	0
Column Totals	138	(A)	410 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-13_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Muck	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-13
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-13_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7792227 **Long:** -67.8565176 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-13_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	40	Yes	FAC
2. *Acer rubrum*	25	Yes	FAC
3. *Picea rubens*	20	Yes	FACU
4. *Pinus strobus*	15	No	FACU
5.			
6.			
7.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	5	Yes	FACW
2. *Abies balsamea*	5	Yes	FAC
3. *Picea rubens*	5	Yes	FACU
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	25	Yes	FACU
2. *Aralia nudicaulis*	15	Yes	FACU
3. *Vaccinium angustifolium*	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 44.4 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	70	x 3 =	210
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals	170	(A)	600 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-13_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Sandy Loam	
3 - 7	2.5Y 5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-14_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7761572 **Long:** -67.8196526 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-14

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- _✓_ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-14_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Picea rubens*	30	Yes	FACU
3. *Abies balsamea*	15	No	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	15	Yes	FACU
2. *Abies balsamea*	10	Yes	FAC
3. *Nemopanthus mucronatus*	5	No	OBL
4. *Viburnum nudum*	5	No	FACW
5.			
6.			
7.			
	35	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	60	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	65	x 2 =	130
FAC species	70	x 3 =	210
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	185 (A)		525 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-14_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 2/1	100					Mucky Loam	Sand present
5 - 8	10YR 6/1	100					Loamy Sand	
8 - 11	10YR 4/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
✓ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-14_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7761787 **Long:** -67.8196088 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-14_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	50	Yes	FACU
2. *Betula populifolia*	15	No	FAC
3. *Acer rubrum*	10	No	FAC
4. *Pinus resinosa*	5	No	FACU
5. *Pinus strobus*	5	No	FACU
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	20	Yes	FACW
2. *Gaylussacia baccata*	20	Yes	FACU
3. *Picea rubens*	5	No	FACU
4.			
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	70	Yes	FAC
2. *Gaultheria procumbens*	20	No	FACU
3. *Vaccinium angustifolium*	15	No	FACU
4. *Aralia nudicaulis*	5	No	FACU
5. *Medeola virginiana*	5	No	FACU
6. *Pteridium aquilinum*	5	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	120	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	95	x 3 =	285
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	250 (A)		865 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-14_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Loam	
3 - 5	10YR 5/2	100					Loamy Sand	
5 - 7	10YR 4/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16

Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-15_PEM-1

Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo, Joe Roy, Gabe Pelletier **Section, Township, Range:**

Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1

Subregion (LRR or MLRA): LRR R **Lat:** 44.767254 **Long:** -67.8401754 **Datum:** WGS84

Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-THE-15

Remarks: (Explain alternative procedures here or in a separate report)

Covertype is PEM. Abuts main access road in active blueberry field with rutting present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	11	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	11	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-15_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Carex scoparia*	40	Yes	FACW
2. *Scirpus cyperinus*	20	Yes	OBL
3. *Lysimachia terrestris*	20	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	40	x 1 =	40
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	80	(A)	120 (B)
Prevalence Index = B/A =	1.5		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-15_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Mucky Loam	
2 - 4	10YR 5/1	95	10YR 3/6	5	C	M	Sandy Loam	
4 - 16	2.5Y 4/3	90	7.5YR 4/4	10	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
_✓_ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock/Gravel
Depth (inches): 16

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-16
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-15_UPL-1
Investigator(s): Gabriel Pelletier , Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7671754 **Long:** -67.8403617 **Datum:** WGS84
Soil Map Unit Name: Colton gravelly sandy loam, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-15_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	100	(A)	400 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-15_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 5	10YR 3/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 5

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-16_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8011954 **Long:** -67.91521 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-16

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	3	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-16_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	30	Yes	FAC
2. *Osmundastrum cinnamomeum*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	70	x 3 =	210
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	95	(A)	260 (B)
Prevalence Index = B/A =	2.7		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-16_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 2/1	100					Muck	
5 - 8	5Y 6/2	90	2.5Y 4/4	10	C	M	Fine Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-16_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Joseph Roy **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.8011862 **Long:** -67.9152393 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-16_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	30	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3. *Betula papyrifera*	15	No	FACU
4. *Fagus grandifolia*	10	No	FACU
5. *Populus tremuloides*	5	No	FACU
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	30	Yes	FACU
2. *Quercus rubra*	20	Yes	FACU
3. *Corylus cornuta*	5	No	FACU
4.			
5.			
6.			
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	15	Yes	FACU
2. *Kalmia angustifolia*	10	Yes	FAC
3. *Gaultheria procumbens*	5	No	FACU
4. *Cornus canadensis*	3	No	FAC
5. *Aralia nudicaulis*	3	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	36	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	43	x 3 =	129
FACU species	138	x 4 =	552
UPL species	0	x 5 =	0
Column Totals	181	(A)	681 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-16_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 6	10YR 5/2	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-17_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.8009495 **Long:** -67.9161715 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-17

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-17_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	10	Yes	FACU
2. *Betula populifolia*	10	Yes	FAC
3. *Acer rubrum*	10	Yes	FAC
4. *Quercus rubra*	5	No	FACU
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	20	Yes	FACW
2. *Ilex verticillata*	20	Yes	FACW
3. *Betula populifolia*	5	No	FAC
4.			
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2. *Rubus flagellaris*	10	Yes	FACU
3. *Toxicodendron radicans*	5	No	FAC
4. *Onoclea sensibilis*	5	No	FACW
5. *Osmunda spectabilis*	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	5	x 1 =	5
FACW species	55	x 2 =	110
FAC species	30	x 3 =	90
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	115	(A)	305 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-17_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Muck	
4 - 18	10YR 5/1	95	10YR 4/6	5	C	M	Loamy Sand	gravel, rock inclusions past 9 inches

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-17_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Knob **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.8009721 **Long:** -67.9163226 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 3 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-17_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	35	Yes	FACU
2. *Acer rubrum*	15	Yes	FAC
3. *Quercus rubra*	10	No	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	40	Yes	FAC
2. *Betula populifolia*	15	Yes	FAC
3. *Quercus rubra*	10	No	FACU
4.			
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Toxicodendron radicans*	5	Yes	FAC
2. *Quercus rubra*	5	Yes	FACU
3. *Trientalis borealis*	5	Yes	FAC
4. *Cornus canadensis*	5	Yes	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	145	(A)	495 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-17_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 3/3	100					Sandy Loam	
1 - 13	10YR 4/6	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 13

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-18_PEM-1
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7995517 **Long:** -67.9213441 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 15 to 70 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-THE-18

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ✓ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	2
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-18_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	45	Yes	OBL
2. *Toxicodendron radicans*	10	No	FAC
3. *Pontederia cordata*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	50	x 1 =	50
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	65	(A)	90 (B)
Prevalence Index = B/A =	1.4		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-18_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Muck	
1 - 7	10YR 5/1	100					Gravelly Loamy Sand	Loose soil profile unable to hold together

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
_✓_ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Due to inundation a clear soil profile was unobtainable. Soils are assumed to be hydric.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-18_PFO-3
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7999282 **Long:** -67.9212612 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 15 to 70 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-THE-18

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ✓ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-18_PFO-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	20	Yes	FACW
2. *Picea rubens*	15	Yes	FACU
3. *Betula populifolia*	15	Yes	FAC
4. *Spiraea latifolia*	10	No	FACW
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	10	Yes	OBL
2. *Onoclea sensibilis*	10	Yes	FACW
3. *Oclemena acuminata*	5	No	FACU
4. *Rubus hispidus*	5	No	FACW
5. *Osmundastrum cinnamomeum*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	83.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	10	x 1 =	10
FACW species	50	x 2 =	100
FAC species	55	x 3 =	165
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	135	(A)	355 (B)
Prevalence Index = B/A =	2.6		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-18_PFO-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Mucky Sandy Loam	
3 - 8	5Y 6/1	100					Rocky Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
_✓_ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock/Gravel
Depth (inches): 8

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Due to inundation a clear soil profile was unobtainable. Soils are assumed to be hydric.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-18_PSS-2
Investigator(s): Matthew Todd , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Marsh **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.8004409 **Long:** -67.9213683 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 15 to 70 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-THE-18

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ✓ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	6
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-18_PSS-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	2	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	2	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	20	Yes	FACW
2. *Acer rubrum*	10	Yes	FAC
3. *Ilex verticillata*	7	No	FACW
4. *Chamaedaphne calyculata*	7	No	OBL
5. *Spiraea alba*	5	No	FACW
6.			
7.			
	49	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Carex folliculata*	20	Yes	OBL
2. *Rubus hispidus*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	27	x 1 =	27
FACW species	47	x 2 =	94
FAC species	12	x 3 =	36
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	86	(A)	157 (B)

Prevalence Index = B/A = 1.82

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-18_PSS-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Muck	
2 - 10	5Y 5/1	100					Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-18_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Knob **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7994913 **Long:** -67.9211721 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 15 to 70 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-18_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	80	Yes	FAC
2. *Pinus strobus*	10	No	FACU
3. *Abies balsamea*	5	No	FAC
4.			
5.			
6.			
7.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	10	Yes	FAC
2. *Corylus cornuta*	10	Yes	FACU
3. *Pinus strobus*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Toxicodendron radicans*	25	Yes	FAC
2. *Quercus rubra*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	120	x 3 =	360
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	150	(A)	480 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-18_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock/Boulders
Depth (inches): 3

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-18_UPL-2
Investigator(s): Matthew Todd , Greg Russo **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8004856 **Long:** -67.921509 **Datum:** WGS84
Soil Map Unit Name: Colton-Adams complex, 15 to 70 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-18_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	5	Yes	FAC
2. *Picea rubens*	3	Yes	FACU
3. *Pinus strobus*	2	Yes	FACU
4.			
5.			
6.			
7.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	20	Yes	FACW
2. *Acer rubrum*	7	Yes	FAC
3. *Quercus rubra*	2	No	FACU
4.			
5.			
6.			
7.			
	29	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	80	Yes	FACU
2. *Kalmia latifolia*	80	Yes	FACU
3. *Pteridium aquilinum*	10	No	FACU
4. *Quercus rubra*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	175	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.8 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	12	x 3 =	36
FACU species	177	x 4 =	708
UPL species	0	x 5 =	0
Column Totals	209	(A)	784 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

The hydrophytic vegetation criterion has been met. However, due to the absence of wetland hydrology and/or hydric soils, this data point is within a non-wetland.

SOIL

Sampling Point: W-THE-18_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Silt Loam	
1 - 4	10YR 4/3	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** North Washington, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-19_PEM-1
Investigator(s): Matt Regan , Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.8899995064 **Long:** -67.8638490289 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-THE-19

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ✓ No ____	Depth (inches):	6	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-19_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer pensylvanicum*	5	Yes	FACU
2. *Betula alleghaniensis*	5	Yes	FAC
3. *Picea rubens*	5	Yes	FACU
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Onoclea sensibilis*	50	Yes	FACW
2. *Parathelypteris noveboracensis*	5	No	FAC
3. *Quercus rubra*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	10	x 3 =	30
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	75	(A)	190 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-19_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	7.5YR 2.5/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-THE-19_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7975750687 **Long:** -67.9326253106 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-THE-19

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Water drains east through wetland swale. Bouldery with no defined bed, bank, or channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ✓ No ____	Depth (inches):	1
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-19_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	40	Yes	FAC
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3. *Acer rubrum*	15	No	FAC
4. *Abies balsamea*	5	No	FAC
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Onoclea sensibilis*	20	Yes	FACW
2. *Osmundastrum cinnamomeum*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	70	x 3 =	210
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	115 (A)		300 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-19_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 24	10YR 2/2	100					Muck	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-18
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-THE-19_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7975439718 **Long:** -67.9324524757 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-19_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	60	Yes	FACU
2. *Acer rubrum*	15	No	FAC
3. *Betula alleghaniensis*	5	No	FAC
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer pensylvanicum*	15	Yes	FACU
2. *Pinus strobus*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	20	Yes	FAC
2. *Vaccinium angustifolium*	5	Yes	FACU
3. *Pteridium aquilinum*	5	Yes	FACU
4. *Aralia nudicaulis*	5	Yes	FACU
5. *Gaultheria procumbens*	5	Yes	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 12.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	140	(A)	520 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-19_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	7.5YR 2.5/1	100					Org matter Loam	
2 - 4	10YR 4/2	100					Loamy Sand	Coarse
4 - 6	2.5Y 5/1	100					Loamy Sand	Coarse

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** North Washington, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-19_UPL-2
Investigator(s): Matt Regan , Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8899995064 **Long:** -67.8638490289 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-19_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Betula alleghaniensis*	15	Yes	FAC
3. *Pinus strobus*	10	No	FACU
4. *Quercus rubra*	10	No	FACU
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	10	Yes	FACU
2. *Acer pensylvanicum*	10	Yes	FACU
3. *Abies balsamea*	5	No	FAC
4. *Fagus grandifolia*	5	No	FACU
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	25	Yes	FACU
2. *Pteridium aquilinum*	20	Yes	FACU
3. *Vaccinium angustifolium*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	155	(A)	565 (B)

Prevalence Index = B/A = 3.65

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-19_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	5YR 2.5/2	100					Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19

Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-20_PSS-1

Investigator(s): Thomas Errico, Kate Harrelson, Matt Regan, Sam Kefferstan **Section, Township, Range:**

Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3

Subregion (LRR or MLRA): LRR R **Lat:** 44.8018574 **Long:** -67.931835 **Datum:** WGS84

Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-20

Remarks: (Explain alternative procedures here or in a separate report)

Covertype is PSS. Potential disturbance with old skid trail.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	14	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-20_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	20	Yes	FAC
2. *Tsuga canadensis*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	15	Yes	FACU
2. *Abies balsamea*	15	Yes	FAC
3. *Betula alleghaniensis*	5	No	FAC
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Onoclea sensibilis*	15	Yes	FACW
2. *Carex crinita*	15	Yes	OBL
3. *Oxalis montana*	5	No	FACU
4. *Acer rubrum*	5	No	FAC
5. *Fraxinus pennsylvanica*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	15	x 1 =	15
FACW species	20	x 2 =	40
FAC species	45	x 3 =	135
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	105	(A)	290 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-20_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	2.5Y 3/1	100					Sandy Loam	
2 - 8	2.5Y 3/1	90	10YR 3/6	10	C	M	Sandy Loam	
8 - 14	2.5YR 5/2	90	10YR 3/6	10	C	M	Loamy Sand	coarse

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
✓ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock/Boulder
Depth (inches): 14

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-20_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan, Molly Lennon **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.802044 **Long:** -67.931895 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-20_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	35	Yes	FACU
2. *Tsuga canadensis*	25	Yes	FACU
3. *Picea rubens*	10	No	FACU
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	15	Yes	FAC
2. *Betula papyrifera*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1. *Abies balsamea*	5	Yes	FAC
2. *Quercus rubra*	5	Yes	FACU
3.			
4.			
	10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals	105 (A)		400 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-20_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	5YR 2.5/2	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19

Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-21_PSS-1

Investigator(s): Thomas Errico, Kate Harrelson, Matt Regan, Sam Kefferstan **Section, Township, Range:**

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3

Subregion (LRR or MLRA): LRR R **Lat:** 44.8020062 **Long:** -67.9323375 **Datum:** WGS84

Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-21

Remarks: (Explain alternative procedures here or in a separate report)

Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	5	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-21_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	40	Yes	FAC
2. *Tsuga canadensis*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	20	Yes	FAC
2. *Carex crinita*	15	Yes	OBL
3. *Onoclea sensibilis*	5	No	FACW
4. *Oxalis montana*	5	No	FACU
5. *Abies balsamea*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	15	x 1 =	15
FACW species	5	x 2 =	10
FAC species	65	x 3 =	195
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	110	(A)	320 (B)
Prevalence Index = B/A =	2.9		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-21_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Loamy Sand	
3 - 8	N 6/	90	10YR 4/6	10	C	M	Silty Clay Loam	Gley 1, 6/10Y

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
_✓_ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock Refusal
Depth (inches): 8

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-21_UPL-1
Investigator(s): Matt Regan, Sam Kefferstan, Tom Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.802091 **Long:** -67.932324 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-21_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	25	Yes	FACU
2. *Abies balsamea*	25	Yes	FAC
3. *Betula papyrifera*	15	Yes	FACU
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Tsuga canadensis*	10	Yes	FACU
2. *Acer pensylvanicum*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Abies balsamea*	10	Yes	FAC
2. *Fagus grandifolia*	5	Yes	FACU
3. *Pinus strobus*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	8	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals	105	(A)	385 (B)
Prevalence Index = B/A =	3.7		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-21_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	7.5YR 2.5/1	100					Silt Loam	
4 - 6	7.5YR 4/1	100					Loamy Sand	
6 - 18	2.5YR 4/4	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-22_PFO-1
Investigator(s): Thomas Errico, Kate Harrelson, Matt Regan, Sam Kefferstan **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.8001178 **Long:** -67.9355217 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-22

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-22_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	30	Yes	FAC
2. *Acer rubrum*	10	Yes	FAC
3. *Picea rubens*	5	No	FACU
4. *Betula papyrifera*	5	No	FACU
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	5	Yes	FACW
2. *Picea rubens*	5	Yes	FACU
3. *Abies balsamea*	5	Yes	FAC
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	60	Yes	FACW
2. *Trientalis borealis*	5	No	FAC
3. *Rubus hispidus*	2	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	67	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	67	x 2 =	134
FAC species	50	x 3 =	150
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	132	(A)	344 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-22_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 2/1	100					Muck	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Refusal

Depth (inches): 5

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** North Washington, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-22_UPL-1
Investigator(s): Matt Regan, Sam kefferstan, Tom Errico, Kate Harrelson **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** None **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8899995064 **Long:** -67.8638490289 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-22_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	15	Yes	FAC
2. *Tsuga canadensis*	10	Yes	FACU
3. *Betula papyrifera*	10	Yes	FACU
4. *Fagus grandifolia*	5	No	FACU
5. *Quercus rubra*	5	No	FACU
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Fagus grandifolia*	70	Yes	FACU
2. *Acer pensylvanicum*	10	No	FACU
3. *Picea rubens*	10	No	FACU
4. *Abies balsamea*	5	No	FAC
5. *Hamamelis virginiana*	5	No	FACU
6.			
7.			
	100	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Abies balsamea*	5	Yes	FAC
2. *Fagus grandifolia*	5	Yes	FACU
3. *Vaccinium angustifolium*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	28.6	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	160	(A)	615 (B)
Prevalence Index = B/A =	3.8		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-22_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	5YR 2.5/2	100					Silt Loam	
4 - 6	5YR 4/1	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-23_PSS-1
Investigator(s): Thomas Errico, Kate Harrelson, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7496514 **Long:** -67.9150949 **Datum:** WGS84
Soil Map Unit Name: Sheepscot fine sandy loam, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-23

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	1	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-23_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum dentatum*	30	Yes	FAC
2. *Viburnum nudum*	10	Yes	FACW
3. *Alnus incana*	5	No	FACW
4. *Betula populifolia*	2	No	FAC
5.			
6.			
7.			
	47	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	40	Yes	OBL
2. *Carex crinita*	30	Yes	OBL
3. *Calamagrostis canadensis*	25	Yes	OBL
4. *Solidago rugosa*	5	No	FAC
5. *Rubus hispidus*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	95	x 1 =	95
FACW species	20	x 2 =	40
FAC species	37	x 3 =	111
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	152	(A)	246 (B)
Prevalence Index = B/A =	1.6		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-23_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 24	10YR 2/2	100					Muck	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-19
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-23_UPL-1
Investigator(s): Thomas Errico, Kate Harrelson, Matt Todd **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Road shoulder **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7497785 **Long:** -67.915188 **Datum:** WGS84
Soil Map Unit Name: Sheepscot fine sandy loam, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-23_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2. *Betula populifolia*	5	Yes	FAC
3. *Populus tremuloides*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2. *Betula populifolia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	25	Yes	FAC
2. *Calamagrostis canadensis*	25	Yes	OBL
3. *Pteridium aquilinum*	15	Yes	FACU
4. *Solidago rugosa*	15	Yes	FAC
5. *Rubus allegheniensis*	10	No	FACU
6. *Comptonia peregrina*	10	No	UPL
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **7** (A)

Total Number of Dominant Species Across All Strata: **9** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **77.8** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	25	x 1 =	25
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	30	x 4 =	120
UPL species	10	x 5 =	50
Column Totals	130 (A)		390 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-23_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Sandy Loam	
3 - 11	10YR 3/6	100					Sandy Loam	
11 - 20	10YR 5/8	100					Sandy Loam	Coarse

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-24_UPL-1
Investigator(s): Matthew Todd, Tom Errico **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Low Hill **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7495287 **Long:** -67.9155145 **Datum:** WGS84
Soil Map Unit Name: Sheepscot fine sandy loam, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-24_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus flagellaris*	25	Yes	FACU
2. *Rubus hispidus*	20	Yes	FACW
3. *Comptonia peregrina*	20	Yes	UPL
4. *Solidago puberula*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	40	x 3 =	120
FACU species	35	x 4 =	140
UPL species	20	x 5 =	100
Column Totals	115	(A)	400 (B)
Prevalence Index = B/A =	3.5		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-24_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Sandy Loam	
1 - 5	2.5Y 5/1	100					Loamy Sand	
5 - 6	10YR 2/1	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-24_PSS-1
Investigator(s): Matthew Todd , Tom Errico **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7495955 **Long:** -67.9156833 **Datum:** WGS84
Soil Map Unit Name: Sheepscot fine sandy loam, 0 to 8 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-24

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-24_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	80	Yes	FAC
2. *Larix laricina*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	100	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	40	Yes	FAC
2. *Rhododendron groenlandicum*	25	Yes	OBL
3. *Rubus hispidus*	25	Yes	FACW
4. *Scirpus cyperinus*	5	No	OBL
5. *Gaylussacia baccata*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	30	x 1 =	30
FACW species	45	x 2 =	90
FAC species	120	x 3 =	360
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	200	(A)	500 (B)
Prevalence Index = B/A =	2.5		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-24_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Muck	
2 - 8	10YR 2/1	100					Loamy Sand	
8 - 12	2.5Y 5/2	85	10YR 4/6	15	C	M	Fine Loamy Sand	
12 - 18	2.5Y 5/2	85	10YR 4/6	15	C	M	Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-25_PSS-2
Investigator(s): Matthew Todd , Tom Errico **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7666362 **Long:** -67.9196889 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-25

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-25_PSS-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	5	Yes	FACW
2. *Acer rubrum*	5	Yes	FAC
3. *Larix laricina*	5	Yes	FACW
4.			
5.			
6.			
7.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea mariana*	30	Yes	FACW
2. *Larix laricina*	15	Yes	FACW
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rhododendron groenlandicum*	20	Yes	OBL
2. *Kalmia angustifolia*	15	Yes	FAC
3. *Eriophorum virginicum*	5	No	OBL
4. *Picea mariana*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	25	x 1 =	25
FACW species	60	x 2 =	120
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	115	(A)	235 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-25_PSS-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 30	10YR 2/1	100					Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-25_PSS-3
Investigator(s): Matthew Todd , Tom Errico **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7652303 **Long:** -67.9203245 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-THE-25

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
_✓_ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
_✓_ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	8	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-25_PSS-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	70	Yes	FACW
2. *Viburnum nudum*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	65	Yes	OBL
2. *Carex stricta*	20	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	85	x 1 =	85
FACW species	75	x 2 =	150
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	160	(A)	235 (B)
Prevalence Index = B/A =	1.5		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-25_PSS-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 2/2	100					Muck	
9 - 13	10YR 3/1	100					Gravelly Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel/coarse sand/rock
Depth (inches): 13

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Refusal due to coarse fragments.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-25_UPL-1
Investigator(s): Matthew Todd , Tom Errico **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 10 to 20
Subregion (LRR or MLRA): LRR R **Lat:** 44.7673903 **Long:** -67.9189094 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-25_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	45	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3. *Pinus strobus*	10	No	FACU
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	10	Yes	FACW
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	30	Yes	FAC
2. *Aralia nudicaulis*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	60	x 3 =	180
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals	145	(A)	500 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-25_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Sandy Loam	
1 - 3	10YR 3/2	100					Fine Loamy Sand	
3 - 20	10YR 6/1	100					Fine Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2019-Sept-20
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-THE-25_UPL-3
Investigator(s): Matthew Todd , Tom Errico **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7655065 **Long:** -67.9204129 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-THE-25_UPL-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	35	Yes	FAC
2. *Picea rubens*	15	Yes	FACU
3. *Pinus resinosa*	10	No	FACU
4. *Quercus rubra*	5	No	FACU
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	30	Yes	FAC
2. *Acer rubrum*	15	Yes	FAC
3. *Viburnum nudum*	15	Yes	FACW
4. *Gaylussacia baccata*	5	No	FACU
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	80	Yes	FAC
2. *Vaccinium angustifolium*	15	No	FACU
3. *Gaultheria procumbens*	15	No	FACU
4. *Pteridium aquilinum*	10	No	FACU
5. *Comptonia peregrina*	5	No	UPL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	125	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	160	x 3 =	480
FACU species	75	x 4 =	300
UPL species	5	x 5 =	25
Column Totals	255 (A)		835 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-THE-25_UPL-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/1	100					Fine Sandy Loam	
2 - 6	10YR 6/1	100					Fine Loamy Sand	
6 - 7	10YR 4/6	100					Fine Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Machias, Washington **Sampling Date:** 2020-July-14
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-202_PFO-1
Investigator(s): Duane Choquette **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7841682095 **Long:** -67.8720006478 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DMC-202

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- _✓_ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓_ Geomorphic Position (D2)
- _✓_ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	10

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-202_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Abies balsamea*	25	Yes	FAC
3. *Populus tremuloides*	20	Yes	FACU
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Vaccinium corymbosum*	25	Yes	FACW
2. *Abies balsamea*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	15	Yes	FACU
2. *Kalmia angustifolia*	15	Yes	FAC
3. *Coptis trifolia*	15	Yes	FACW
4. *Rubus hispidus*	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	100	x 3 =	300
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals	185	(A)	540 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-202_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 3/3	100					Loam	
8 - 12	10YR 2/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
_✓_ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocks and boulders
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2020-July-15
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-60_PFO-1
Investigator(s): Duane Choquette **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7844288557 **Long:** -67.9161145106 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** PFO
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DMC-60

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- _✓_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓_ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- _✓_ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	10

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-60_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	80	Yes	FAC
2. *Quercus rubra*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	110	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	30	Yes	FACW
2. *Abies balsamea*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	30	Yes	FACW
2. *Aralia nudicaulis*	25	Yes	FACU
3. *Cornus canadensis*	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	105	x 3 =	315
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals	220	(A)	655 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-60_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Loam	
2 - 4	10YR 2/1	100					Sandy Loam	
4 - 10	10YR 4/2	100					Sandy Loam	
10 - 15	10YR 4/2	70	10YR 4/4	30	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Boulders
Depth (inches): 15

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2020-July-14
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-200_PEM-1
Investigator(s): Duane Choquette **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7252578034 **Long:** -67.9170322993 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DMC-200

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
_✓_ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
_✓_ Saturation Visible on Aerial Imagery (C9)
_✓_ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	6

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-200_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	25	Yes	FACW
2. *Viburnum lentago*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Carex crinita*	80	Yes	OBL
2. *Spiraea alba*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	80	x 1 =	80
FACW species	45	x 2 =	90
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	140	(A)	215 (B)

Prevalence Index = B/A = 1.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-200_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/3	100					Loam	
4 - 10	10YR 2/1	100					Loamy Sand	
10 - 18	10YR 2/2	95	10YR 4/3	5	RM	M	Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2020-July-14
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-200_UPL-1
Investigator(s): Duane Choquette **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 10 to 20
Subregion (LRR or MLRA): LRR R **Lat:** 44.7252416286 **Long:** -67.9169376638 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-200_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus resinosa*	70	Yes	FACU
2. *Pinus strobus*	20	Yes	FACU
3. *Betula papyrifera*	10	No	FACU
4.			
5.			
6.			
7.			
	100	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula papyrifera*	20	Yes	FACU
2. *Quercus rubra*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Vaccinium angustifolium*	20	Yes	FACU
3. *Cornus canadensis*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	180	x 4 =	720
UPL species	0	x 5 =	0
Column Totals	190 (A)		750 (B)
Prevalence Index = B/A =	3.9		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-200_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loamy Sand	
2 - 7	10YR 4/1	100					Loamy Sand	
7 - 18	10YR 5/4	100					Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2020-July-15
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-60_UPL-1
Investigator(s): Duane Choquette **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 10 to 20
Subregion (LRR or MLRA): LRR R **Lat:** 44.7842362634 **Long:** -67.9161275025 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-60_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Quercus rubra*	50	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	35	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Aralia nudicaulis*	40	Yes	FACU
2. *Toxicodendron radicans*	15	Yes	FAC
3. *Vaccinium angustifolium*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	200	(A)	700 (B)
Prevalence Index = B/A =	3.5		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-60_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/3	100					Sandy Loam	
4 - 8	10YR 5/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Boulders
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Machias, Washington **Sampling Date:** 2020-July-14
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DMC-202_UPL-1
Investigator(s): Duane Choquette **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.784185006 **Long:** -67.8719730998 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DMC-202_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	40	Yes	FAC
2. *Pinus strobus*	35	Yes	FACU
3. *Populus tremuloides*	15	No	FACU
4.			
5.			
6.			
7.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	70	Yes	FAC
2. *Pteridium aquilinum*	40	Yes	FACU
3. *Cornus canadensis*	15	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	125	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	125	x 3 =	375
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals	215	(A)	735 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DMC-202_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 3/4						Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rocks
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: APEX Cherryfield **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-04
Applicant/Owner: APEX **State:** ME **Sampling Point:** W-SLG-01_PSS-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7704578 **Long:** -67.9234508 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:** PSS
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-01

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Floodplain of Pleasant River. Two inches of snow cover present during initial delineation. Site was revisited under snowless conditions by SGrove on November 12, 2020. No changes to wetland/upland line or data form were needed..

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
_✓_ Water Marks (B1)
_✓_ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
_✓_ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	12	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-01_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Alnus incana*	75	Yes	FACW
2. *Betula populifolia*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	75	Yes	FACW
2. *Betula populifolia*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	50	Yes	OBL
2. *Spiraea alba*	5	No	FACW
3. *Onoclea sensibilis*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	50	x 1 =	50
FACW species	160	x 2 =	320
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	220	(A)	400 (B)

Prevalence Index = B/A = 1.8

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-01_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	98					Mucky Peat	semi frozen
1 - 7	10YR 2/1	90					Silt Loam	
7 - 14	10YR 4/2	90	10YR 3/6	5	C	M	Fine Sandy Loam	
14 - 20	10YR 3/1	80					Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Top 4 inches of soil semi-frozen.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: APEX Cherryfield **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-04
Applicant/Owner: APEX **State:** ME **Sampling Point:** W-SLG-01_UPL-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7705807 **Long:** -67.9231658 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Two inches of snow cover present during initial delineation. Site was revisited under snowless conditions by SGrove on November 12, 2020. No changes to wetland/upland line or data form were needed..

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-01_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	85	Yes	FACU
2. *Quercus rubra*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	5	Yes	FACU
2. *Amelanchier canadensis*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	5	Yes	FACU
2. *Pteridium aquilinum*	5	Yes	FACU
3. *Vaccinium angustifolium*	5	Yes	FACU
4. *Kalmia angustifolia*	5	Yes	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals	120	(A)	470 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-01_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	95					Loam	
4 - 10	10YR 3/4	95					Loam	
10 - 14	10YR 5/8	90					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 14

Hydric Soil Present? Yes ____ No ✓

Remarks:

snow covered, top 4 inches of soil semi-frozen.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Apex Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2020-Nov-05
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-03_PSS-1
Investigator(s): Stacie Grove, Cory Denning **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7705325475 **Long:** -67.918460351 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Small bog-like depression surrounded by blueberry barrens..

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
_✓_ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-03_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Rhododendron canadense*	35	Yes	FACW
2. *Spiraea latifolia*	10	No	FACW
3. *Kalmia angustifolia*	5	No	FAC
4. *Betula populifolia*	5	No	FAC
5. *Picea rubens*	2	No	FACU
6.			
7.			
	57	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	15	Yes	OBL
2. *Carex diandra*	5	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	20	x 1 =	20
FACW species	45	x 2 =	90
FAC species	10	x 3 =	30
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals	77	(A)	148 (B)
Prevalence Index = B/A =	1.9		

Hydrophytic Vegetation Indicators:

_✓_ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

Hummocks throughout, some areas dense pockets of scirp cype. Deep sphagnum throughout feature center.

SOIL

Sampling Point: W-SLG-03_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	98					Mucky Peat	
4 - 8	10YR 5/1	80					Fine Sandy Loam	
8 - 12	10YR 3/3	90					Gravelly Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_✓_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Apex Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2020-Nov-05
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-03_UPL-1
Investigator(s): Stacie Grove, Cory Denning **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7703819353 **Long:** -67.9185801591 **Datum:** WGS84
Soil Map Unit Name: Kinsman-Wonsqueak association, 0 to 3 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Active blueberry field adjacent to slight swale depression. Circumstances are not normal due to agricultural activities.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ____ No ✓	Depth (inches):		**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-03_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	90	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals	90	(A)	360 (B)
Prevalence Index = B/A =	4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

Active blueberry barrens, recently mowed, periodically burned.

SOIL

Sampling Point: W-SLG-03_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2	95					Gravelly Loam	
4 - 8	7.5YR 4/6	95					Gravelly Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: APEX Downeast **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-05
Applicant/Owner: APEX **State:** ME **Sampling Point:** W-SLG-04_PFO-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7732843 **Long:** -67.8695726 **Datum:** WGS84
Soil Map Unit Name: Monadnock-Hermon-Dixfield-Brayton **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-04

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Low-lying hummocky depression, no herb cover other than mosses, possible pvp.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
_✓_ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-04_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Picea rubens*	10	Yes	FACU
3. *Betula populifolia*	5	No	FAC
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Ilex verticillata*	60	Yes	FACW
2. *Viburnum nudum*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	35	x 3 =	105
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	110	(A)	275 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

Hummocky, many areas concave un-vegetated, sphagnum throughout.

SOIL

Sampling Point: W-SLG-04_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	98					Mucky Muck	
6 - 10	10YR 2/1	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes _✓_ No ____

Remarks:

refusal <6" throughout .

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: APEX Cherryfield **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-05
Applicant/Owner: APEX **State:** ME **Sampling Point:** W-SLG-04_UPL-2
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7732237 **Long:** -67.8695144 **Datum:** WGS84
Soil Map Unit Name: Monadnock-Hermon-Dixfield-Brayton **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-04_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	35	Yes	FACU
2. *Betula papyrifera*	15	Yes	FACU
3. *Picea rubens*	10	No	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula papyrifera*	5	Yes	FACU
2. *Aronia melanocarpa*	5	Yes	FAC
3. *Acer rubrum*	5	Yes	FAC
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	25	Yes	FACU
2. *Kalmia angustifolia*	20	Yes	FAC
3. *Vaccinium angustifolium*	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals	135	(A)	510 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-04_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	100					Sandy Loam	
2 - 6	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: APEX Cherryfield **City/County:** Cherryfield , Washington **Sampling Date:** 2020-Nov-09
Applicant/Owner: APEX **State:** Maine **Sampling Point:** W-SLG-05_PFO-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7745559 **Long:** -67.9084747 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-05

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. PFO along edges, center more PSS and with several concave unvegetated areas; may be PVP.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
_✓_ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-05_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	25	Yes	FAC
2. *Acer rubrum*	10	Yes	FAC
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	40	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Rhododendron canadense*	60	Yes	FACW
2. *Acer rubrum*	10	No	FAC
3. *Viburnum nudum*	5	No	FACW
4.			
5.			
6.			
7.			
	75	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria hispidula*	20	Yes	FACW
2. *Kalmia angustifolia*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	50	x 3 =	150
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	140	(A)	340 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

many bare areas, hummocky, sphagnum throughout .

SOIL

Sampling Point: W-SLG-05_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	80	10YR 3/6	5	C	M/PL	Loam	
4 - 5	2.5Y 7/1	90					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
✓ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Bedrock
Depth (inches): 5

Hydric Soil Present? Yes ✓ No ____

Remarks:

Shallow soils, refusal at < 8 inches throughout.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: APEX Cherryfield **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-09
Applicant/Owner: APEX **State:** ME **Sampling Point:** W-SLG-05_UPL-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7745608 **Long:** -67.9083619 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-05_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	40	Yes	FACU
2. *Acer rubrum*	15	Yes	FAC
3. *Betula populifolia*	5	No	FAC
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	5	Yes	FACU
2. *Pinus strobus*	5	Yes	FACU
3. *Gaylussacia baccata*	5	Yes	FACU
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	50	Yes	FACU
2. *Kalmia angustifolia*	15	Yes	FAC
3. *Gaultheria procumbens*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals	145	(A)	545 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-05_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Loam	
8 - 9	10YR 4/2	85					Fine Sandy Loam	shallow soils throughout

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Bedrock
Depth (inches): 9

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-06_PFO-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.8174012 **Long:** -67.9373514 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-06

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. pit & mound topography throughout, some areas concave and unvegetated-possible vernal pool habitat. Most areas organic material or mucky peat over rock, refusal at 8" or less..

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
_✓_ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	10	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-06_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	Yes	FAC
2. *Betula populifolia*	10	No	FAC
3. *Pinus strobus*	10	No	FACU
4. *Picea rubens*	5	No	FACU
5.			
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	20	Yes	FAC
2. *Abies balsamea*	10	Yes	FAC
3. *Picea rubens*	5	No	FACU
4. *Viburnum nudum*	5	No	FACW
5. *Gaylussacia baccata*	5	No	FACU
6.			
7.			
	45	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmunda claytoniana*	15	Yes	FAC
2. *Pteridium aquilinum*	5	Yes	FACU
3. *Kalmia angustifolia*	2	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	22	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	107	x 3 =	321
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	142	(A)	451 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

hummocky, elevated areas have UPL spp. that include Quercus rubrum, Picea rubens, Populus grandidentalis. Sphagnum and shallow roots throughout..

SOIL

Sampling Point: W-SLG-06_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Fibric Mucky Peat	
8 - 11	10YR 7/2	85					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
_✓_ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 11

Hydric Soil Present? Yes _✓_ No ____

Remarks:

many areas organic material over rock refusal at <8".

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-06_UPL-2
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.8174261 **Long:** -67.9374228 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ____	Depth (inches):	
Water Table Present?	Yes ____ No ____	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ____	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-06_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fagus grandifolia*	60	Yes	FACU
2. *Betula populifolia*	10	No	FAC
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Fagus grandifolia*	25	Yes	FACU
2. *Picea rubens*	5	No	FACU
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	15	Yes	FAC
2. *Pteridium aquilinum*	5	No	FACU
3. *Vaccinium angustifolium*	5	No	FACU
4. *Gaultheria procumbens*	3	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	28	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	113	x 4 =	452
UPL species	0	x 5 =	0
Column Totals	138	(A)	527 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-06_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	98					Loam	
1 - 4	10YR 5/3	90					Sandy Loam	
4 - 6	10YR 3/6	95					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ____ No ✓

Remarks:

refusal many areas less than 6".

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-07_PFO-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.8170378 **Long:** -67.9399689 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-07

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO. Hummocky, many areas deep organics over rock. Potential vernal pool in at least 1 area of complex. Wetland connects to abandoned beaver flowage to west. .

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
_✓_ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	0	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	12	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
pockets of standing water throughout.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-07_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Abies balsamea*	15	Yes	FAC
3. *Picea rubens*	10	No	FACU
4. *Thuja occidentalis*	10	No	FACW
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Aronia melanocarpa*	20	Yes	FAC
2. *Picea rubens*	10	Yes	FACU
3. *Abies balsamea*	5	No	FAC
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2. *Picea rubens*	5	No	FACU
3. *Cornus canadensis*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	80	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	85	x 3 =	255
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals	140	(A)	415 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

pit & mound, deep sphagnum throughout, pockets of tamarack, UPL spp. on mounds include Quercus rubrum, Picea rubrum, Populus grand..

SOIL

Sampling Point: W-SLG-07_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 30	10YR 2/1	100					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- _✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 30

Hydric Soil Present? Yes _✓_ No ____

Remarks:

According to the USDA NRCS the mapped soil type is classified as hydric.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-07_UPL-2
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.8167098 **Long:** -67.9393803 **Datum:** WGS84
Soil Map Unit Name: Brayton-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ____ No ✓	Depth (inches):		**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-07_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	40	Yes	FACU
2. *Picea rubens*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	20	Yes	FACU
2. *Fagus grandifolia*	5	No	FACU
3. *Acer pensylvanicum*	5	No	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	30	Yes	FAC
2. *Pteridium aquilinum*	10	Yes	FACU
3. *Cornus canadensis*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	20	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals	145	(A)	545 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-07_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/2	95					Loam	
4 - 5	10YR 7/1	98					Sandy Loam	
5 - 10	10YR 3/6	90					Gravelly Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None
Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

Upland spodosol.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-08_PFO-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.8152565 **Long:** -67.9358059 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-08

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
_✓_ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-08_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Betula populifolia*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	40	Yes	FACW
2. *Acer rubrum*	5	No	FAC
3. *Viburnum nudum*	5	No	FACW
4.			
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Abies balsamea*	3	Yes	FAC
2. *Kalmia angustifolia*	2	Yes	FAC
3. *Osmundastrum cinnamomeum*	1	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	6	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **4** (A)

Total Number of Dominant Species Across All Strata: **4** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **100** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	46	x 2 =	92
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	126	(A)	332 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

pit and mound throughout, shallow roots .

SOIL

Sampling Point: W-SLG-08_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	98					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- _✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- _✓ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? Yes _✓_ No ____

Remarks:

Wetland perched in depression on shallow aquitard..

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-10
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-08_UPL-2
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.8148447 **Long:** -67.9350432 **Datum:** WGS84
Soil Map Unit Name: Skerry-Colonel association, 0 to 8 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-08_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fagus grandifolia*	40	Yes	FACU
2. *Populus grandidentata*	30	Yes	FACU
3. *Pinus strobus*	10	No	FACU
4. *Acer rubrum*	10	No	FAC
5.			
6.			
7.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Fagus grandifolia*	20	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	110	(A)	430 (B)
Prevalence Index = B/A =	3.9		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-08_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2	95					Loam	
2 - 9	10YR 4/6	98					Gravelly Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-09_PSS-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7426379 **Long:** -67.915453 **Datum:** WGS84
Soil Map Unit Name: Masardis fine sandy loam, 8 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-09

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
_✓_ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
drains to man made ditch to NW.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-09_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	5	Yes	FAC
2. *Betula papyrifera*	3	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	8	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	30	Yes	FAC
2. *Alnus incana*	25	Yes	FACW
3. *Rubus idaeus*	5	No	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus idaeus*	10	Yes	FACU
2. *Solidago rugosa*	10	Yes	FAC
3. *Pteridium aquilinum*	3	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	23	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	45	x 3 =	135
FACU species	21	x 4 =	84
UPL species	0	x 5 =	0
Column Totals	91	(A)	269 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

sphagnum pockets throughout and shallow rooted veg.

SOIL

Sampling Point: W-SLG-09_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/2						Loam	
2 - 10	10YR 5/2	60	10YR 4/6	5	C	M/PL	Gravelly Clay Loam	
10 - 20	10YR 4/2	60	10YR 4/6	8	C	M/PL	Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None
Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

soils mixed and stripped in some areas, possibly a sand/gravel extraction area.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-09_UPL-2
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 35 to 40
Subregion (LRR or MLRA): LRR R **Lat:** 44.7425403 **Long:** -67.9153203 **Datum:** WGS84
Soil Map Unit Name: Masardis fine sandy loam, 8 to 15 percent slopes **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-09_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	75	Yes	FACU
2. *Betula papyrifera*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula papyrifera*	10	Yes	FACU
2. *Abies balsamea*	3	No	FAC
3. *Quercus rubra*	3	No	FACU
4.			
5.			
6.			
7.			
	16	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Picea rubens*	3	Yes	FACU
2. *Cornus canadensis*	3	Yes	FAC
3. *Pinus strobus*	3	Yes	FACU
4. *Comptonia peregrina*	3	Yes	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	12	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	16.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	6	x 3 =	18
FACU species	104	x 4 =	416
UPL species	3	x 5 =	15
Column Totals	113	(A)	449 (B)
Prevalence Index = B/A =	4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-09_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 4/4	80					Gravelly Sand	
12 - 20	10YR 3/6						Gravelly Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** , **Sampling Date:** 2020-Nov-12
Applicant/Owner: Apex **State:** **Sampling Point:** W-SLG-10_PEM-3
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7172806 **Long:** -67.9075637 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-10

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
_✓ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	3
Water Table Present?	Yes _✓_ No ____	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-10_PEM-3

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	80	Yes	OBL
2. *Glyceria canadensis*	5	No	OBL
3. *Sparganium americanum*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	90	x 1 =	90
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	90	(A)	90 (B)
Prevalence Index = B/A =	1		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

abandoned beaverflow many standing dead trees.

SOIL

Sampling Point: W-SLG-10_PEM-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1						Mucky Peat	
12 - 15	10YR 2/1						Mucky Peat	
15 - 24	10YR 5/1		10YR 4/6	5	C	M/PL	Gravelly Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None
Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** , **Sampling Date:** 2020-Nov-12
Applicant/Owner: Apex **State:** **Sampling Point:** W-SLG-10_PFO-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.716672 **Long:** -67.9055519 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-10

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):		
Water Table Present?	Yes _✓_ No ____	Depth (inches):	16	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-10_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Larix laricina*	10	No	FACW
3. *Abies balsamea*	10	No	FAC
4. *Picea rubens*	5	No	FACU
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	15	Yes	FAC
2. *Aronia melanocarpa*	20	Percent cover cannot be greater than a previous species	FAC
3. *Picea rubens*	5	No	FACU
4. *Pinus strobus*	3	No	FACU
5.			
6.			
7.			
	43	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus hispidus*	15	Yes	FACW
2. *Osmundastrum cinnamomeum*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	105	x 3 =	315
FACU species	13	x 4 =	52
UPL species	0	x 5 =	0
Column Totals	153	(A)	437 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

dense sphagnum throughout .

SOIL

Sampling Point: W-SLG-10_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 2/1						Mucky Peat	
18 - 24	10YR 5/1	70	10YR 5/8	10			Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
_✓_ Histic Epipedon (A2)
_✓_ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None
Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** , **Sampling Date:** 2020-Nov-12
Applicant/Owner: Apex **State:** **Sampling Point:** W-SLG-10_UPL-2
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7167319 **Long:** -67.905915 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-10_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	40	Yes	FACU
2. *Populus grandidentata*	25	Yes	FACU
3. *Pinus strobus*	10	No	FACU
4. *Picea rubens*	10	No	FACU
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	15	Yes	FACU
2. *Pinus strobus*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	10	Yes	FACU
2. *Kalmia angustifolia*	5	Yes	FAC
3. *Pteridium aquilinum*	3	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	18	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **6** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **16.7** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	118	x 4 =	472
UPL species	0	x 5 =	0
Column Totals	123	(A)	487 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

unknown grass present 30%.

SOIL

Sampling Point: W-SLG-10_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1						Loam	
2 - 10	10YR 3/4						Sandy Loam	
10 - 18	10YR 5/8						Gravelly Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

refusal <6" many areas.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** , **Sampling Date:** 2020-Nov-12
Applicant/Owner: Apex **State:** **Sampling Point:** W-SLG-10_UPL-4
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7168115 **Long:** -67.9073503 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-10_UPL-4

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	40	Yes	FAC
2. *Pinus resinosa*	30	Yes	FACU
3. *Populus grandidentata*	20	Yes	FACU
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	10	Yes	FAC
2. *Quercus rubra*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	30	Yes	FACU
2. *Kalmia angustifolia*	30	Yes	FAC
3. *Vaccinium angustifolium*	5	No	FACU
4. *Pteridium aquilinum*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	42.9	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals	175	(A)	620 (B)
Prevalence Index = B/A =	3.5		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-10_UPL-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	98					Sandy Loam	
1 - 5	10YR 3/6						Gravelly Sandy Loam	
5 - 8	10YR 3/4						Gravelly Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-11_PSS-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7162552 **Long:** -67.8989317 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:** PFO
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-11

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Perched wetland on shallow aquitard, some concave unvegetated areas may be PVP.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
_✓_ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
_✓_ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
_✓_ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-11_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Chamaedaphne calyculata*	65	Yes	OBL
2. *Rhododendron canadense*	5	No	FACW
3. *Spiraea alba*	5	No	FACW
4.			
5.			
6.			
7.			
	75	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Calamagrostis canadensis*	15	Yes	OBL
2. *Vaccinium macrocarpon*	5	Yes	OBL
3. *Chamaedaphne calyculata*	5	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	90	x 1 =	90
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	100	(A)	110 (B)

Prevalence Index = B/A = 1.1

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

tamarack and red maple on edges, sphagnum throughout complex, some areas of wetland are a dense monoculture of rhodora.

SOIL

Sampling Point: W-SLG-11_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	98					Mucky Peat	Top 4" peat

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- _✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? Yes _✓_ No ____

Remarks:

shallow aquitard.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-11_UPL-2
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7163326 **Long:** -67.8985844 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):		
Water Table Present?	Yes ____ No ✓	Depth (inches):		**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-11_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	45	Yes	FACU
2. *Quercus rubra*	35	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Gaylussacia baccata*	30	Yes	FACU
2. *Pinus strobus*	5	No	FACU
3. *Betula populifolia*	5	No	FAC
4. *Picea rubens*	2	No	FACU
5.			
6.			
7.			
	42	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	15	Yes	FACU
2. *Pteridium aquilinum*	5	Yes	FACU
3. *Kalmia angustifolia*	5	Yes	FAC
4. *Vaccinium angustifolium*	5	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	142	x 4 =	568
UPL species	0	x 5 =	0
Column Totals	152	(A)	598 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-11_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/2						Loam	
2 - 8	10YR 4/6						Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

shallow soils throughout, rock refusal.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-12_PSS-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7149418 **Long:** -67.9018192 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:** PFO
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-12

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. dense rhodora and kalmia wetland in depression on shallow aquitard.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-12_PSS-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Rhododendron canadense*	50	Yes	FACW
2. *Kalmia angustifolia*	40	Yes	FAC
3. *Spiraea alba*	5	No	FACW
4.			
5.			
6.			
7.			
	95	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	20	Yes	FAC
2. *Rhododendron canadense*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	135	(A)	330 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

pockets of sphagnum throughout .

SOIL

Sampling Point: W-SLG-12_PSS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/1	98					Mucky Peat	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

- _✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 7

Hydric Soil Present? Yes _✓_ No ____

Remarks:

perched on shallow aquitard, deep sphagnum and organic accumulation.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington **Sampling Date:** 2020-Nov-11
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-SLG-12_UPL-2
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Undulating **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7148597 **Long:** -67.9018702 **Datum:** WGS84
Soil Map Unit Name: Hermon-Monadnock-Skerry complex, 0 to 15 percent slopes, very bouldery **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-12_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	50	Yes	FAC
2. *Quercus rubra*	10	No	FACU
3. *Populus grandidentata*	5	No	FACU
4.			
5.			
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	5	Yes	FACU
2. *Quercus rubra*	5	Yes	FACU
3. *Betula populifolia*	5	Yes	FAC
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	40	Yes	FACU
2. *Pteridium aquilinum*	20	Yes	FACU
3. *Kalmia angustifolia*	10	No	FAC
4. *Vaccinium angustifolium*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals	155	(A)	555 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-12_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	7.5YR 2.5/1	90					Sandy Loam	
2 - 11	7.5YR 2.5/3	95					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 11

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** , **Sampling Date:** 2020-Nov-12
Applicant/Owner: Apex **State:** **Sampling Point:** W-SLG-13_PEM-1
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** Undulating **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.7780268 **Long:** -67.892983 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-SLG-13

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
_✓_ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
_✓_ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ____	Depth (inches):	
Water Table Present?	Yes ____ No ____	Depth (inches):	**Wetland Hydrology Present?** Yes _✓_ No ____
Saturation Present? (includes capillary fringe)	Yes ____ No ____	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-13_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Scirpus cyperinus*	40	Yes	OBL
2. *Scirpus atrovirens*	25	Yes	OBL
3. *Spiraea alba*	10	No	FACW
4. *Spiraea tomentosa*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	65	x 1 =	65
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	80	(A)	95 (B)
Prevalence Index = B/A =	1.2		

Hydrophytic Vegetation Indicators:

✓ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-SLG-13_PEM-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/2						Loam	
4 - 6	10YR 4/1		10YR 3/6		C	M/PL	Fine Sandy Loam	
6 - 12	10YR 6/1	50	10YR 4/6	5			Fine Sandy Loam	
6 - 12	7.5YR 5/1	40	7.5YR 5/6	5	C	M/PL	Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** , **Sampling Date:** 2020-Nov-12
Applicant/Owner: Apex **State:** **Sampling Point:** W-SLG-13_UPL-2
Investigator(s): Matthew Todd, Cory Dunning, Stacie Grove **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Knoll **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.7780649 **Long:** -67.8928438 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-SLG-13_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	50	Yes	FACU
2. *Poaceae*	20	Yes	NI
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals	50	(A)	200 (B)
Prevalence Index = B/A =	4		

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

unknown danthonia weed; 30%of plot sand gravel.

SOIL

Sampling Point: W-SLG-13_UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/2						Loam	
4 - 7	10YR 3/3						Gravelly Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 4

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DBV-01_PFO-1
Investigator(s): Randi Jackson , Dana Valleau **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.7950970848 **Long:** -67.9021660612 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-01

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- _✓ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- _✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	2
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-01_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Betula alleghaniensis*	20	Yes	FAC
3. *Populus tremuloides*	10	Yes	FACU
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer pensylvanicum*	25	Yes	FACU
2. *Hamamelis virginiana*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2. *Parathelypteris noveboracensis*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	57.1	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	50	x 3 =	150
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	105	(A)	350 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-01_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
4 - 6	2.5Y 3/2	75	2.5Y 5/2	25	D	M	Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
_✓_ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes _✓_ No ____

Remarks:

4 inches of organic soil on top.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** ME **Sampling Point:** W-DBV-01_UPL-1
Investigator(s): Randi Jackson , Dana Valleau **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.7953556246 **Long:** -67.9021359701 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-01_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	50	Yes	FACU
2. *Acer pensylvanicum*	10	No	FACU
3. *Picea rubens*	10	No	FACU
4.			
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	50	Yes	FACU
2. *Pyrola americana*	20	Yes	FAC
3. *Osmundastrum cinnamomeum*	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	20	x 3 =	60
FACU species	220	x 4 =	880
UPL species	0	x 5 =	0
Column Totals	250	(A)	960 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-01_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2 - 1	2.5Y 2.5/1	100					Silt Loam	
1 - 2	2.5YR 5/1	100					Sandy Loam	
2 - 8	2.5YR 4/2	100					Sandy Loam	
8 - 16	2.5Y 4/3						Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-02_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.79117 **Long:** -67.904716 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-02

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	1
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-02_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Betula alleghaniensis*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	15	Yes	FACW
2. *Hamamelis virginiana*	5	Yes	FACU
3. *Populus tremuloides*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Parathelypteris noveboracensis*	10	Yes	FAC
2. *Coptis trifolia*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	75	x 3 =	225
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	105	(A)	305 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

__✓__ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-02_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	2.5Y 3/2	90	2.5Y 5/2	10	D	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
✓ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-02_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.79117 **Long:** -67.904394 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-02_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	60	Yes	FACU
2. *Acer rubrum*	10	No	FAC
3. *Betula populifolia*	5	No	FAC
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula populifolia*	20	Yes	FAC
2. *Hamamelis virginiana*	10	Yes	FACU
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	15	Yes	FAC
2. *Pteridium aquilinum*	10	Yes	FACU
3. *Gaultheria procumbens*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	40	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals	140	(A)	510 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-02_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 3	10YR 5/2	100					Sandy Loam	
3 - 9	10YR 3/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 9

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-03_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.791006 **Long:** -67.906911 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-03

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-03_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Picea rubens*	10	Yes	FACU
3. *Betula alleghaniensis*	10	Yes	FAC
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2. *Populus tremuloides*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Onoclea sensibilis*	10	Yes	FACW
2. *Osmundastrum cinnamomeum*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	71.4	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	45	x 3 =	135
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	75	(A)	225 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-03_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/2	100					Sandy Loam	
1 - 5	10YR 3/1	95	10YR 3/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
_✓_ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 5

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-03_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.790671 **Long:** -67.907018 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-03_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	40	Yes	FACU
2. *Pinus strobus*	10	No	FACU
3. *Picea rubens*	5	No	FACU
4. *Acer rubrum*	5	No	FAC
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Pinus strobus*	15	Yes	FACU
2. *Hamamelis virginiana*	10	Yes	FACU
3. *Picea rubens*	5	No	FACU
4. *Acer rubrum*	5	No	FAC
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	30	Yes	FACU
2. *Aralia nudicaulis*	10	Yes	FACU
3. *Cornus canadensis*	10	Yes	FAC
4. *Gaultheria procumbens*	10	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	14.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	155	(A)	600 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-03_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Sandy Loam	
3 - 4	10YR 6/1	100					Sandy Loam	
4 - 9	10YR 4/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 9

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-04_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.79093 **Long:** -67.909443 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-04

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
_✓_ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	4

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-04_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Pinus strobus*	5	No	FACU
3. *Betula alleghaniensis*	5	No	FAC
4.			
5.			
6.			
7.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	5	Yes	FACW
2. *Hamamelis virginiana*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2. *Parathelypteris noveboracensis*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	80	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	40	x 3 =	120
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	65	(A)	190 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-04_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	2.5Y 3/2	90	2.5Y 5/2	10	D	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
_✓_ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 5

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-04_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.790839 **Long:** -67.909121 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-04_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	45	Yes	FACU
2. *Acer rubrum*	10	No	FAC
3. *Pinus strobus*	5	No	FACU
4. *Picea rubens*	5	No	FACU
5.			
6.			
7.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer pensylvanicum*	10	Yes	FACU
2. *Hamamelis virginiana*	5	Yes	FACU
3. *Picea rubens*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	30	Yes	FACU
2. *Gaultheria procumbens*	15	Yes	FACU
3. *Osmundastrum cinnamomeum*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	**0**	(A)
Total Number of Dominant Species Across All Strata:	**6**	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	**0**	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals	135	(A)	520 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-04_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	2.5Y 2.5/1	100					Silt Loam	
2 - 6	2.5Y 4/2	100					Sandy Loam	
6 - 18	2.5Y 4/3	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-05_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.791204 **Long:** -67.910365 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-05

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	2
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-05_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Betula alleghaniensis*	15	Yes	FAC
3. *Picea rubens*	5	No	FACU
4.			
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	10	Yes	FACU
2. *Viburnum nudum*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2. *Onoclea sensibilis*	5	Yes	FACW
3. *Coptis trifolia*	5	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	6	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	85.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	50	x 3 =	150
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	95	(A)	270 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

__✓__ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-05_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	10YR 2/1	100					Sandy Loam	
1 - 4	2.5Y 3/2	100					Sandy Loam	
4 - 11	2.5Y 4/2	95	10YR 4/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-05_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.791341 **Long:** -67.910043 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-05_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	25	Yes	FACU
2. *Quercus rubra*	25	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Picea rubens*	15	Yes	FACU
2. *Pinus strobus*	15	Yes	FACU
3. *Hamamelis virginiana*	5	No	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	105	(A)	415 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-05_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	2.5Y 2.5/1	100					Sandy Loam	
3 - 7	2.5Y 4/3	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-06_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.78959 **Long:** -67.908413 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-06

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
_✓ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	2
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-06_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Betula alleghaniensis*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	20	Yes	FAC
2. *Hamamelis virginiana*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2. *Parathelypteris noveboracensis*	5	No	FAC
3. *Onoclea sensibilis*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	95	x 3 =	285
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	125	(A)	355 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-06_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	2.5Y 2.5/1	100					Silt Loam	
3 - 5	2.5Y 3/2	95	10YR 3/6	5	C	M	Sandy Loam	
5 - 11	2.5Y 4/2	95	10YR 4/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 11

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-06_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.789788 **Long:** -67.908155 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-06_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	40	Yes	FACU
2. *Betula papyrifera*	10	No	FACU
3. *Picea rubens*	5	No	FACU
4.			
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	10	Yes	FACU
2. *Viburnum nudum*	10	Yes	FACW
3. *Quercus rubra*	5	No	FACU
4. *Picea rubens*	5	No	FACU
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaylussacia baccata*	15	Yes	FACU
2. *Vaccinium angustifolium*	10	Yes	FACU
3. *Aralia nudicaulis*	5	No	FACU
4. *Pteridium aquilinum*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	20	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals	120	(A)	460 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-06_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 5	10YR 6/2	100					Sandy Loam	
5 - 18	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-07_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.790641 **Long:** -67.91043 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-07

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _✓ Surface Water (A1)
- _✓ High Water Table (A2)
- _✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- _✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- _✓ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- _✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- _✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	1
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-07_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Abies balsamea*	5	No	FAC
3. *Betula alleghaniensis*	5	No	FAC
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	5	Yes	FACW
2. *Acer rubrum*	5	Yes	FAC
3. *Pinus strobus*	5	Yes	FACU
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	5	Yes	FACW
2. *Parathelypteris noveboracensis*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	83.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	50	x 3 =	150
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	70	(A)	210 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-07_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	2.5Y 2.5/1	100					Loam	
2 - 7	2.5Y 3/1	95	10YR 3/6	5	C	M	Sandy Loam	
7 - 18	2.5Y 3/2	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
_✓_ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-07_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.790701 **Long:** -67.910151 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-07_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	25	Yes	FACU
2. *Populus tremuloides*	15	Yes	FACU
3. *Betula papyrifera*	15	Yes	FACU
4. *Picea rubens*	5	No	FACU
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Populus tremuloides*	20	Yes	FACU
2. *Hamamelis virginiana*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	25	Yes	FACU
2. *Gaultheria procumbens*	10	Yes	FACU
3. *Parathelypteris noveboracensis*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	8	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	12.5	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	130	x 4 =	520
UPL species	0	x 5 =	0
Column Totals	140	(A)	550 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-07_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 5	10YR 3/3	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 5

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-09_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.788509 **Long:** -67.915429 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-09

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	7
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-09_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Betula alleghaniensis*	25	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2. *Abies balsamea*	5	Yes	FAC
3. *Alnus incana*	5	Yes	FACW
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Onoclea sensibilis*	10	Yes	FACW
2. *Osmundastrum cinnamomeum*	5	Yes	FACW
3. *Rubus hispidus*	5	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	8	(A)
Total Number of Dominant Species Across All Strata:	8	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	70	x 3 =	210
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	95	(A)	260 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-09_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	2.5Y 2.5/1	100					Silt Loam	
2 - 7	2.5Y 3/2	95	2.5Y 5/2	5	D	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
✓ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-09_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.788448 **Long:** -67.91515 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-09_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	45	Yes	FACU
2. *Acer rubrum*	10	No	FAC
3. *Picea rubens*	10	No	FACU
4. *Pinus strobus*	5	No	FACU
5. *Betula papyrifera*	5	No	FACU
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	10	Yes	FAC
2. *Quercus rubra*	5	Yes	FACU
3. *Pinus strobus*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	15	Yes	FACU
2. *Pteridium aquilinum*	10	Yes	FACU
3. *Gaultheria procumbens*	5	No	FACU
4. *Parathelypteris noveboracensis*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	16.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals	130	(A)	495 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-09_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Loam	
2 - 4	10YR 6/1	100					Sandy Loam	
4 - 11	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 11

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-10_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.800132 **Long:** -67.919478 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-10

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-10_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2. *Betula alleghaniensis*	10	Yes	FAC
3. *Quercus rubra*	10	Yes	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	5	Yes	FACU
2. *Alnus incana*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Onoclea sensibilis*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	25	x 3 =	75
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	65	(A)	185 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

__✓__ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-10_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Muck	
2 - 6	2.5Y 3/2	95	10YR 3/6	5	C	M	Sandy Loam	
6 - 18	2.5Y 4/2	100					Gravelly Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
✓ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-10_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.800166 **Long:** -67.91932 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-10_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	45	Yes	FACU
2. *Acer rubrum*	15	Yes	FAC
3. *Fagus grandifolia*	5	No	FACU
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	5	Yes	FAC
2. *Hamamelis virginiana*	5	Yes	FACU
3. *Pinus strobus*	5	Yes	FACU
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Gaultheria procumbens*	10	Yes	FACU
2. *Vaccinium angustifolium*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	28.6	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals	100	(A)	380 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-10_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 4	10YR 5/1	100					Sandy Loam	
4 - 11	7.5YR 4/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 11

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-11_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.788857 **Long:** -67.907396 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-11

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	1
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-11_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Betula alleghaniensis*	15	Yes	FAC
3. *Populus tremuloides*	5	No	FACU
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	10	Yes	FACW
2. *Hamamelis virginiana*	5	Yes	FACU
3. *Populus tremuloides*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2. *Parathelypteris noveboracensis*	10	Yes	FAC
3. *Onoclea sensibilis*	5	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	6	(A)
Total Number of Dominant Species Across All Strata:	8	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	55	x 3 =	165
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	95	(A)	275 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

__✓__ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-11_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 1	2.5Y 2.5/1	100					Silt Loam	
1 - 6	2.5Y 3/1	95	10YR 3/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
_✓_ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-11_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.789162 **Long:** -67.907203 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-11_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	30	Yes	FACU
2. *Quercus rubra*	25	Yes	FACU
3. *Picea rubens*	15	No	FACU
4. *Pinus strobus*	5	No	FACU
5. *Acer rubrum*	5	No	FAC
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Populus tremuloides*	15	Yes	FACU
2. *Hamamelis virginiana*	15	Yes	FACU
3. *Picea rubens*	10	Yes	FACU
4.			
5.			
6.			
7.			
	40	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	20	Yes	FACU
2. *Gaultheria procumbens*	10	Yes	FACU
3. *Parathelypteris noveboracensis*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	8	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	12.5	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	145	x 4 =	580
UPL species	0	x 5 =	0
Column Totals	160	(A)	625 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-11_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	2.5Y 2.5/1	100					Silt Loam	
2 - 5	2.5Y 3/2	100					Sandy Loam	
5 - 11	2.5Y 4/3	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 11

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-12_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.79524 **Long:** -67.904024 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-12

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	2
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-12_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	55	Yes	FAC
2. *Betula alleghaniensis*	10	No	FAC
3. *Abies balsamea*	10	No	FAC
4.			
5.			
6.			
7.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	5	Yes	FACW
2. *Rubus hispidus*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	75	x 3 =	225
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	95	(A)	265 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

__✓__ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-12_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	2.5Y 2.5/1	100					Silt Loam	
2 - 4	2.5Y 3/1	100					Sandy Loam	
4 - 9	2.5Y 4/2	95	10YR 4/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 9

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-12_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.795 **Long:** -67.903953 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-12_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	60	Yes	FACU
2. *Populus tremuloides*	25	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	30	Yes	FACU
2. *Populus tremuloides*	15	Yes	FACU
3. *Picea rubens*	10	No	FACU
4.			
5.			
6.			
7.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	15	Yes	FACU
2. *Aralia nudicaulis*	5	Yes	FACU
3. *Gaultheria procumbens*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	**0**	(A)
Total Number of Dominant Species Across All Strata:	**7**	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	**0**	(A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	5	x 3 =	15	
FACU species	165	x 4 =	660	
UPL species	0	x 5 =	0	
Column Totals	170	(A)	675	(B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-12_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	2.5Y 2.5/1	100					Sandy Loam	
3 - 7	2.5Y 4/2	100					Sandy Loam	
7 - 18	2.5Y 4/3	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-15_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.79849 **Long:** -67.921053 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-15

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	2
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-15_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Alnus incana*	45	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	45	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Onoclea sensibilis*	15	Yes	FACW
2. *Osmundastrum cinnamomeum*	10	Yes	FACW
3. *Calamagrostis canadensis*	10	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	10	x 1 =	10
FACW species	70	x 2 =	140
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	110	(A)	240 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-15_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5Y 3/2	100					Sandy Loam	
4 - 9	2.5Y 4/2	95	10YR 3/6	5	C	M	Loamy Sand	
9 - 18	2.5Y 5/1	100					Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-15_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.798479 **Long:** -67.920629 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-15_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	20	Yes	FACU
2. *Quercus rubra*	15	Yes	FACU
3. *Acer rubrum*	15	Yes	FAC
4. *Betula papyrifera*	5	No	FACU
5.			
6.			
7.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	20	Yes	FACU
2. *Viburnum nudum*	5	No	FACW
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Pteridium aquilinum*	10	Yes	FACU
2. *Parathelypteris noveboracensis*	5	Yes	FAC
3. *Vaccinium angustifolium*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	28.6	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	20	x 3 =	60
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals	105	(A)	390 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-15_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/2	100					Sandy Loam	
3 - 4	10YR 5/1	100					Sandy Loam	
4 - 9	10YR 4/4	100					Sandy Loam	
9 - 18	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-16_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.79341 **Long:** -67.905483 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-16

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	2
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-16_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	35	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3. *Betula alleghaniensis*	15	No	FAC
4. *Abies balsamea*	15	No	FAC
5.			
6.			
7.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Abies balsamea*	10	Yes	FAC
2. *Acer rubrum*	5	Yes	FAC
3. *Picea rubens*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	65	x 3 =	195
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals	115	(A)	375 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-16_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 6	10YR 4/2	95	10YR 4/6	5	C	M	Loamy Sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
_✓_ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 6

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Cherryfield, Washington County **Sampling Date:** 2020-Dec-09
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-16_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.793429 **Long:** -67.905151 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-16_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea rubens*	40	Yes	FACU
2. *Quercus rubra*	25	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	20	Yes	FACU
2. *Picea rubens*	15	Yes	FACU
3. *Acer pensylvanicum*	15	Yes	FACU
4.			
5.			
6.			
7.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	40	Yes	FACU
2. *Gaultheria procumbens*	15	Yes	FACU
3. *Pteridium aquilinum*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	180	x 4 =	720
UPL species	0	x 5 =	0
Column Totals	185	(A)	735 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-16_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 4	10YR 6/1	100					Sandy Loam	
4 - 13	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 13

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-17_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.792526 **Long:** -67.908192 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-17

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	3
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-17_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	25	Yes	FAC
2. *Betula populifolia*	15	Yes	FAC
3. *Betula alleghaniensis*	10	Yes	FAC
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Vaccinium corymbosum*	10	Yes	FACW
2. *Viburnum nudum*	5	Yes	FACW
3. *Betula populifolia*	5	Yes	FAC
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	15	Yes	FACW
2. *Onoclea sensibilis*	5	Yes	FACW
3. *Parathelypteris noveboracensis*	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	9	(A)
Total Number of Dominant Species Across All Strata:	9	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	95	(A)	250 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-17_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Silt Loam	
2 - 9	2.5Y 3/2	95	10YR 4/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
_✓_ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 9

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-17_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 5 to 10
Subregion (LRR or MLRA): LRR R **Lat:** 44.792358 **Long:** -67.907742 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-17_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	80	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	20	Yes	FACU
2. *Acer pensylvanicum*	10	Yes	FACU
3. *Picea rubens*	5	No	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Kalmia angustifolia*	20	Yes	FAC
2. *Vaccinium angustifolium*	10	Yes	FACU
3. *Gaultheria procumbens*	5	No	FACU
4. *Pteridium aquilinum*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	20	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	155	(A)	600 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-17_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 2/1	100					Sandy Loam	
3 - 5	10YR 5/1	100					Sandy Loam	
5 - 15	7.5YR 3/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 15

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-18_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.794883 **Long:** -67.902963 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-18

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

_✓ Surface Water (A1)
_✓ High Water Table (A2)
_✓ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _✓_ No ____	Depth (inches):	1
Water Table Present?	Yes _✓_ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-18_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	20	Yes	FAC
2. *Acer rubrum*	20	Yes	FAC
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	10	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3. *Acer pensylvanicum*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	15	Yes	FACW
2. *Parathelypteris noveboracensis*	10	Yes	FAC
3. *Onoclea sensibilis*	10	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	6	(A)
Total Number of Dominant Species Across All Strata:	8	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	55	x 3 =	165
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	100	(A)	295 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

__✓__ 2 - Dominance Test is >50%

__✓__ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes __✓__ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-18_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 7	2.5Y 4/2	95	10YR 4/6	5	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-18_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.794654 **Long:** -67.903156 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-18_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	70	Yes	FACU
2. *Pinus strobus*	15	No	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Quercus rubra*	10	Yes	FACU
2. *Hamamelis virginiana*	10	Yes	FACU
3. *Picea rubens*	10	Yes	FACU
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	30	Yes	FACU
2. *Gaultheria procumbens*	15	Yes	FACU
3. *Aralia nudicaulis*	5	No	FACU
4. *Pteridium aquilinum*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	170	x 4 =	680
UPL species	0	x 5 =	0
Column Totals	180	(A)	710 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-18_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 2/1	100					Sandy Loam	
2 - 4	10YR 6/2	100					Sandy Loam	
4 - 9	10YR 4/4	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 9

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-19_PFO-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): LRR R **Lat:** 44.79572 **Long:** -67.905023 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DBV-19

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
_✓_ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
_✓_ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes _✓_ No ____	Depth (inches):	3
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-19_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Betula populifolia*	5	No	FAC
3. *Betula alleghaniensis*	5	No	FAC
4. *Pinus strobus*	5	No	FACU
5.			
6.			
7.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Viburnum nudum*	5	Yes	FACW
2. *Vaccinium corymbosum*	5	Yes	FACW
3. *Hamamelis virginiana*	5	Yes	FACU
4. *Pinus strobus*	5	Yes	FACU
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	10	Yes	FACW
2. *Parathelypteris noveboracensis*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	71.4	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	60	x 3 =	180
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	95	(A)	280 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-19_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 7	2.5Y 3/2	90	10YR 3/6	10	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
✓ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 7

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2020-Dec-10
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DBV-19_UPL-1
Investigator(s): Randi Jackson, Dana Valleau **Section, Township, Range:** N/A
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 2 to 5
Subregion (LRR or MLRA): LRR R **Lat:** 44.795933 **Long:** -67.904701 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes ____ No _✓_**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No _✓_	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DBV-19_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	80	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	15	Yes	FACU
2. *Quercus rubra*	5	Yes	FACU
3. *Picea rubens*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vaccinium angustifolium*	25	Yes	FACU
2. *Gaultheria procumbens*	5	No	FACU
3. *Parathelypteris noveboracensis*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals	140	(A)	555 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DBV-19_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 2/1	100					Sandy Loam	
4 - 6	10YR 6/1	100					Sandy Loam	
6 - 18	10YR 4/6	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2021-Nov-18
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DCC-01_PFO-1
Investigator(s): Duane Choquette , Randi Jackson, Dana Valleau **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.787984 **Long:** -67.874216 **Datum:** WGS84
Soil Map Unit Name: **NWI classification:** PFO
Are climatic/hydrologic conditions on the site typical for this time of year? Yes _✓_ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DCC-01

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	6

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DCC-01_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	65	Yes	FAC
2. *Picea rubens*	15	No	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Acer rubrum*	25	Yes	FAC
2. *Abies balsamea*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	20	Yes	FACW
2. *Kalmia angustifolia*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	130	x 3 =	390
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	165	(A)	490 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DCC-01_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/2	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
_✓_ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock
Depth (inches): 7

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2021-Feb-15
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DCC-01_UPL-1
Investigator(s): Duane Choquette , Randi Jackson, Dana Valleau **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.788175 **Long:** -67.874484 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DCC-01_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	60	Yes	FACU
2. *Populus tremuloides*	20	Yes	FACU
3. *Betula papyrifera*	20	Yes	FACU
4.			
5.			
6.			
7.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Maianthemum canadense*	20	Yes	FACU
2. *Cornus canadensis*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals	130 (A)		510 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DCC-01_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 3/3						Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock
Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2021-Feb-15
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DCC-02_PFO-1
Investigator(s): Duane Choquette , Randi Jackson, Dana Valleau **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.788253 **Long:** -67.872638 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DCC-02

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
_✓_ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
_✓_ Shallow Aquitard (D3)
_✓_ Microtopographic Relief (D4)
_✓_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	3

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DCC-02_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	70	Yes	FAC
2. *Populus tremuloides*	10	No	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	

Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	80	x 3 =	240
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals	130	(A)	360 (B)
Prevalence Index = B/A =	2.8		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DCC-02_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/2	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock
Depth (inches): 8

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2021-Feb-15
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DCC-02_UPL-1
Investigator(s): Duane Choquette , Randi Jackson, Dana Valleau **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.788329 **Long:** -67.872735 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No _✓_		
Hydric Soil Present?	Yes ____ No _✓_	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes ____ No _✓_	**If yes, optional Wetland Site ID:**	W-DCC-02

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ____	Depth (inches):	
Water Table Present?	Yes ____ No ____	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No _✓_
Saturation Present? (includes capillary fringe)	Yes ____ No ____	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DCC-02_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	50	Yes	FACU
2. *Abies balsamea*	40	Yes	FAC
3. *Betula papyrifera*	20	No	FACU
4.			
5.			
6.			
7.			
	110	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Hamamelis virginiana*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Cornus canadensis*	25	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals	150	(A)	535 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DCC-02_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 3/4	100					Fine Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock
Depth (inches): 9

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2021-Feb-15
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DCC-04_PFO-1
Investigator(s): Duane Choquette , Randi Jackson, Dana Valleau **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.787393 **Long:** -67.873765 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _✓_ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _✓_ No ____		
Hydric Soil Present?	Yes _✓_ No ____	**Is the Sampled Area within a Wetland?**	**Yes _✓_ No ____**
Wetland Hydrology Present?	Yes _✓_ No ____	**If yes, optional Wetland Site ID:**	W-DCC-04

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PFO.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
_✓_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
_✓_ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No _✓_	Depth (inches):	
Water Table Present?	Yes ____ No _✓_	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes _✓_ No ____	Depth (inches):	4

Wetland Hydrology Present? Yes _✓_ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DCC-04_PFO-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	60	Yes	FAC
2. *Picea rubens*	20	Yes	FACU
3. *Acer rubrum*	20	Yes	FAC
4.			
5.			
6.			
7.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Betula papyrifera*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Osmundastrum cinnamomeum*	35	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	60	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	80	x 3 =	240
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals	145	(A)	430 (B)
Prevalence Index = B/A =	3		

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

_✓_ 2 - Dominance Test is >50%

_✓_ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _✓_ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DCC-04_PFO-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 2/1	100					Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock
Depth (inches): 9

Hydric Soil Present? Yes _✓_ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Downeast Wind **City/County:** Columbia, Washington County **Sampling Date:** 2021-Feb-15
Applicant/Owner: Apex **State:** Maine **Sampling Point:** W-DCC-04_UPL-1
Investigator(s): Duane Choquette , Randi Jackson, Dana Valleau **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 3
Subregion (LRR or MLRA): LRR R **Lat:** 44.787545 **Long:** -67.874017 **Datum:** WGS84
Soil Map Unit Name: Skerry-Becket association, 0 to 15 percent slopes, very stony **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ____	Depth (inches):	
Water Table Present?	Yes ____ No ____	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ____	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-DCC-04_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	40	Yes	FAC
2. *Pinus strobus*	30	Yes	FACU
3. *Populus tremuloides*	20	Yes	FACU
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Maianthemum canadense*	30	Yes	FACU
2. *Kalmia angustifolia*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals	130	(A)	470 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-DCC-04_UPL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 3/3						Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: rock
Depth (inches): 10

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Charles Ferris	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Rise	Local Relief:	Convex
Slope (%):	1%	Latitude: 44.728094	Longitude: -67.910971 Datum: NAD83

Date:	11/02/16
County:	Washington
State:	Maine
Wetland ID:	01CF_G
Sample Point:	**Upland**
Community ID:	PSS

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth:	(in.)
Water Table Present?	☐ Yes ☑ No	Depth:	(in.)
Saturation Present?	☐ Yes ☐ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)	Matrix %	Mottles Color (Moist)	Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	2	1	2.5Y 3/1	100	--	--	--	--	fine sandy loam
2	8	2	2.5Y 4/4	100	--	--	--	--	fine sandy loam
8	20	3	2.5Y 5/6	100	--	--	--	--	fine sandy loam
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Depth:

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM

Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 01CF_G Sample Point **Upland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Pinus resinosa	15	Y	FACU
2.	--Betula populifolia	10	Y	FAC
3.	--Populus tremuloides	5	N	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	30		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Prunus serotina	5	Y	FACU
2.	--Vaccinium corymbosum	2	Y	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	7		

Herb Stratum (Plot size: 2 meter radius)

1.	--Kalmia angustifolia	80	Y	FAC
2.	--Pteridium aquilinum	2	N	FACU
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	82		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***60.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	2	x 2 =	4
FAC spp.	90	x 3 =	270
FACU spp.	27	x 4 =	108
UPL spp.	0	x 5 =	0
Total	119 (A)		382 (B)

Prevalence Index = B/A = ***3.210***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks:

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Charles Ferris	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Depression	Local Relief:	Concave
Slope (%):	1%	Latitude: 44.727990	Longitude: -67.911068 Datum: --

Date:	11/02/16
County:	Washington
State:	Maine
Wetland ID:	01CF_G
Sample Point:	**Wetland**
Community ID:	PSS

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Is This Sampling Point Within A Wetland? ☑ **Yes** ☐ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☑ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☑ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☑ Yes	☐ No	Depth: 0	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	36	1	--	--	--	--	--	--	--	--	peaty muck
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☑ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Depth:

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 01CF_G Sample Point **Wetland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Chamaedaphne calyculata--	80	Y	OBL
2.	--Rhododendron canadense	20	Y	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	100		

Herb Stratum (Plot size: 2 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	0		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***100.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	80	x 1 =	80
FACW spp.	20	x 2 =	40
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	100 (A)		120 (B)

Prevalence Index = B/A = ***1.200***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Remarks:

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Charles Ferris	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Depression	Local Relief:	Concave
Slope (%):		Latitude: 44.713141	Longitude: -67.909653
Datum:	--		

Date:	11/03/16
County:	Washington
State:	Maine
Wetland ID:	01CF_R
Sample Point:	**Upland**
Community ID:	PSS

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth:	(in.)
Water Table Present?	☐ Yes ☑ No	Depth:	(in.)
Saturation Present?	☐ Yes ☐ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)	Matrix %	Mottles Color (Moist)	Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
1	0	--	--	--	--	--	--	--	duff
0	2	1	10YR 4/1	100	--	--	--	--	fine sandy loam
2	20	2	2.5Y 5/6	100	--	--	--	--	sandy loam
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Depth:

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM

Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 01CF_R Sample Point **Upland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Quercus rubra	15	Y	FACU
2.	--Pinus strobus	10	Y	FACU
3.	--Acer rubrum	10	Y	FAC
4.	--Betula papyrifera	5	N	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	40		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Quercus rubra	15	Y	FACU
2.	--Pinus strobus	10	Y	FACU
3.	--Tsuga canadensis	10	Y	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	35		

Herb Stratum (Plot size: 2 meter radius)

1.	--Kalmia angustifolia	10	Y	FAC
2.	--Gaultheria procumbens	2	N	FACU
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	12		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***28.6%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	20	x 3 =	60
FACU spp.	67	x 4 =	268
UPL spp.	0	x 5 =	0
Total	87 (A)		328 (B)

Prevalence Index = B/A = ***3.770***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks:

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Charles Ferris	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Depression	Local Relief:	Concave
Slope (%):		Latitude: 44.713023	Longitude: -67.90964 Datum: --

Date:	11/03/16
County:	Washington
State:	Maine
Wetland ID:	01CF_R
Sample Point:	**Wetland**
Community ID:	PSS

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Is This Sampling Point Within A Wetland? ☑ **Yes** ☐ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☑ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☑ Yes	☐ No	Depth: 0	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	36	1	--	--	--	--	--	--	--	--	peaty muck
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☑ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Depth:

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 01CF_R Sample Point **Wetland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--*Picea mariana*	5	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	5		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--*Rhododendron groenlandicum*	30	Y	OBL
2.	--*Chamaedaphne calyculata*	20	Y	OBL
3.	--*Pinus strobus*	15	N	FACU
4.	--*Picea mariana*	10	N	FACW
5.	--*Larix laricina*	5	N	FACW
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	80		

Herb Stratum (Plot size: 2 meter radius)

1.	--*Kalmia angustifolia*	5	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	5		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***100.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	50	x 1 =	50
FACW spp.	20	x 2 =	40
FAC spp.	5	x 3 =	15
FACU spp.	15	x 4 =	60
UPL spp.	0	x 5 =	0
Total	90 (A)		165 (B)

Prevalence Index = B/A = ***1.833***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Remarks:

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Rise	Local Relief:	Convex
Slope (%):	3%	Latitude: 44.669405	Longitude: -67.806611 Datum: NAD83

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

Date:	04/25/17
County:	Washington
State:	Maine
Wetland ID:	01EB_S
Sample Point:	**Upland**
Community ID:	PSS

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☑ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth:	(in.)
Water Table Present?	☐ Yes ☑ No	Depth:	(in.)
Saturation Present?	☐ Yes ☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
2	0	--	--	--	--	--	--	--	--	--	duff
0	1	1	10YR	5/2	100	--	--	--	--	--	silt
1	4	2	10YR	4/4	100	--	--	--	--	--	fine sandy loam
4	10	3	10YR	4/3	100	--	--	--	--	--	fine sandy loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: hard pan Depth: 10"

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project | Wetland ID: 01EB_S | Sample Point **Upland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Comptonia peregrina	60	Y	NI
2.	--Ilex verticillata	20	Y	FACW
3.	--Picea rubens	5	N	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	85		

Herb Stratum (Plot size: 2 meter radius)

1.	--Vaccinium angustifolium	60	Y	FACU
2.	--Kalmia angustifolia	40	Y	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	100		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***50.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	20	x 2 =	40
FAC spp.	40	x 3 =	120
FACU spp.	65	x 4 =	260
UPL spp.	60	x 5 =	300
Total	185 (A)		720 (B)

Prevalence Index = B/A = ***3.892***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks:

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Depression	Local Relief:	Concave
Slope (%):	0%	Latitude: 44.669445	Longitude: -67.806736 Datum: NAD83

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

Date:	04/25/17
County:	Washington
State:	Maine
Wetland ID:	01EB_S
Sample Point:	**Wetland**
Community ID:	PSS

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Is This Sampling Point Within A Wetland? ☑ **Yes** ☐ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☑ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☑ Yes	☐ No	Depth: 0	(in.)
Saturation Present?	☑ Yes	☐ No	Depth: 0	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	20	1	--	--	--	--	--	--	--	--	mucky peat
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☑ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Depth:

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project | Wetland ID: 01EB_S | Sample Point: Wetland

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Rhododendron groenlandicum	50	Y	OBL
2.	--Ilex verticillata	10	N	FACW
3.	--Spiraea tomentosa	15	N	FACW
4.	--Picea rubens	5	N	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	80		

Herb Stratum (Plot size: 2 meter radius)

1.	--Glyceria canadensis	10	Y	OBL
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	10		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***100.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	60	x 1 =	60
FACW spp.	25	x 2 =	50
FAC spp.	0	x 3 =	0
FACU spp.	5	x 4 =	20
UPL spp.	0	x 5 =	0
Total	90 (A)		130 (B)

Prevalence Index = B/A = ***1.444***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Rise	Local Relief:	Convex
Slope (%):	5%	Latitude: 44.669344	Longitude: -67.821162 Datum: NAD83

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

Date:	04/25/17
County:	Washington
State:	Maine
Wetland ID:	01JL_K
Sample Point:	**Upland**
Community ID:	PSS

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth:	(in.)
Water Table Present?	☐ Yes ☑ No	Depth:	(in.)
Saturation Present?	☐ Yes ☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
1	0	--	--	--	--	--	--	--	--	--	--duff
0	2	1	10YR	3/2	100	--	--	--	--	--	loamy sand
2	4	2	2.5Y	6/2	100	--	--	--	--	--	loamy sand
4	8	3	10YR	4/6	100	--	--	--	--	--	loamy sand
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: hard pan Depth: 8

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project | Wetland ID: 01JL_K | Sample Point **Upland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Picea rubens	5	Y	FACU
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	5		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Comptonia peregrina	40	Y	NI
2.	--Ilex verticillata	15	Y	FACW
3.	--Picea rubens	5	N	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	60		

Herb Stratum (Plot size: 2 meter radius)

1.	--Pteridium aquilinum	50	Y	FACU
2.	--Gaultheria procumbens	40	Y	FACU
3.	--Kalmia angustifolia	40	Y	FAC
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	130		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***33.3%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	15	x 2 =	30
FAC spp.	40	x 3 =	120
FACU spp.	100	x 4 =	400
UPL spp.	40	x 5 =	200
Total	195 (A)		750 (B)

Prevalence Index = B/A = ***3.846***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks:

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Depression	Local Relief:	Concave
Slope (%):	0%	Latitude: 44.669287	Longitude: -67.821152 Datum: NAD83

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

Date:	04/25/17
County:	Washington
State:	Maine
Wetland ID:	01JL_K
Sample Point:	**Wetland**
Community ID:	PSS

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Is This Sampling Point Within A Wetland? ☑ **Yes** ☐ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☑ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☑ Yes	☐ No	Depth: 3	(in.)
Saturation Present?	☑ Yes	☐ No	Depth: 0	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	10	1	--	--	--	--	--	--	--	--	mucky peat
10	15	2	10YR	5/1	100	--	--	--	--	--	sand
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☑ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☑ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: hard pan Depth: 15

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM

Northeast and Northcentral Region

Project/Site: Downeast Wind Project | Wetland ID: 01JL_K | Sample Point **Wetland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Picea rubens	20	Y	FACU
2.	--Acer rubrum	25	Y	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	45		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Rhododendron groenlandicum	35	Y	OBL
2.	--Ilex verticillata	20	Y	FACW
3.	--Abies balsamea	10	N	FAC
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	65		

Herb Stratum (Plot size: 2 meter radius)

1.	--Glyceria striata	40	Y	OBL
2.	--Gaultheria procumbens	20	Y	FACU
3.	--Carex trisperma	10	N	OBL
4.	--Kalmia angustifolia	10	N	FAC
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	80		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***66.7%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	85	x 1 =	85
FACW spp.	20	x 2 =	40
FAC spp.	45	x 3 =	135
FACU spp.	40	x 4 =	160
UPL spp.	0	x 5 =	0
Total	190 (A)		420 (B)

Prevalence Index = B/A = ***2.211***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Remarks:

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Jeanna Leclerc	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Toeslope	Local Relief:	Concave
Slope (%):		Latitude: 44.668941	Longitude: -67.812316 Datum: NAD83

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

Date:	04/25/17
County:	Washington
State:	Maine
Wetland ID:	01JL_P
Sample Point:	**Upland**
Community ID:	PSS/PEM

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☐ No	Depth:	(in.)
Water Table Present?	☐ Yes ☐ No	Depth:	(in.)
Saturation Present?	☐ Yes ☐ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
2	0	--	--	--	--	--	--	--	--	--	duff
0	3	1	7.5YR	4/6	100	--	--	--	--	--	loam
3	11	2	7.5YR	4/6	75	--	--	--	--	--	loam
11	19	3	2.5Y	6/2	75	--	--	--	--	--	loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Depth:

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project | Wetland ID: 01JL_P | Sample Point **Upland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Abies balsamea	5	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	5		

Herb Stratum (Plot size: 2 meter radius)

1.	--Kalmia angustifolia	40	Y	FAC
2.	--Pteridium aquilinum	10	N	FACU
3.	--Vaccinium angustifolium	10	N	FACU
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	60		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***100.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	45	x 3 =	135
FACU spp.	20	x 4 =	80
UPL spp.	0	x 5 =	0
Total	65 (A)		215 (B)

Prevalence Index = B/A = ***3.308***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Jeanna Leclerc	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Toeslope	Local Relief:	Concave
Slope (%):		Latitude: 44.669060	Longitude: -67.812295 Datum: NAD83

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

Date:	04/25/17
County:	Washington
State:	Maine
Wetland ID:	01JL_P
Sample Point:	**Wetland**
Community ID:	PSS/PEM

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes ☐ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☑ Yes ☐ No	Is This Sampling Point Within A Wetland?	☑ **Yes** ☐ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☑ A1 - Surface Water
- ☑ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☑ Yes ☐ No	Depth:	2	(in.)
Water Table Present?	☑ Yes ☐ No	Depth:	0	(in.)
Saturation Present?	☑ Yes ☐ No	Depth:	0	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
4	0	--	--	--	--	--	--	--	--	--	mucky peat
0	7	1	2.5Y	3/1	100	--	--	--	--	--	mucky loam
7	15	2	5Y	5/1	100	10YR	4/6	2	C	M	sandy loam
15	21	3	5Y	5/1	100	10YR	4/6	15	C	M	sandy loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☑ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Depth:

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM

Northeast and Northcentral Region

Project/Site: Downeast Wind Project | Wetland ID: 01JL_P | Sample Point **Wetland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Alnus incana	5	N	FACW
2.	--Spiraea tomentosa	30	Y	FACW
3.	--Spiraea alba	20	Y	FACW
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	55		

Herb Stratum (Plot size: 2 meter radius)

1.	--Calamagrostis canadensis	60	Y	OBL
2.	--Carex crinita	20	Y	OBL
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	80		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***100.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	80	x 1 =	80
FACW spp.	55	x 2 =	110
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	135 (A)		190 (B)

Prevalence Index = B/A = ***1.407***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Remarks:

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Rise	Local Relief:	Convex
Slope (%):	1%	Latitude: 44.681076	Longitude: -67.859595 Datum: NAD83

Date:	04/25/17
County:	Washington
State:	Maine
Wetland ID:	02CF_H
Sample Point:	**Upland**
Community ID:	PFO

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
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- ☐ B3 - Drift Deposits
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- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
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- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth:	(in.)
Water Table Present?	☐ Yes ☑ No	Depth:	(in.)
Saturation Present?	☐ Yes ☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
1	0	--	--	--	--	--	--	--	--	--	duff
0	2	1	10YR	4/1	100	--	--	--	--	--	sandy loam
2	9	2	10YR	4/6	100	--	--	--	--	--	sandy loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: rocky till Depth: 9"

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM

Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 02CF_H Sample Point **Upland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Quercus rubra	50	Y	FACU
2.	--Acer rubrum	40	Y	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	90		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Quercus rubra	10	Y	FACU
2.	--Viburnum nudum	10	Y	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	20		

Herb Stratum (Plot size: 2 meter radius)

1.	--Kalmia angustifolia	20	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	20		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***60.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	10	x 2 =	20
FAC spp.	60	x 3 =	180
FACU spp.	60	x 4 =	240
UPL spp.	0	x 5 =	0
Total	130 (A)		440 (B)

Prevalence Index = B/A = ***3.385***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Remarks:

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Depression	Local Relief:	Concave
Slope (%):	0%	Latitude: 44.681097	Longitude: -67.859428 Datum: NAD83

Date:	04/25/17
County:	Washington
State:	Maine
Wetland ID:	02CF_H
Sample Point:	**Wetland**
Community ID:	PFO

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Is This Sampling Point Within A Wetland? ☑ **Yes** ☐ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☑ A1 - Surface Water
- ☑ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☑ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☑ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☑ Yes ☐ No	Depth:	6	(in.)
Water Table Present?	☑ Yes ☐ No	Depth:	0	(in.)
Saturation Present?	☑ Yes ☐ No	Depth:	0	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	2	1	--	--	--	--	--	--	--	--	mucky peat
2	6	2	10YR	4/2	100	--	--	--	--	--	loamy sand
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☑ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: rocky till Depth: 6"

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 02CF_H Sample Point **Wetland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Acer rubrum	50	Y	FAC
2.	--Betula populifolia	30	Y	FAC
3.	--Quercus rubens	15	N	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	95		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Ilex verticillata	45	Y	FACW
2.	--Betula populifolia	15	N	FAC
3.	--Viburnum nudum	15	N	FACW
4.	--Acer rubrum	10	N	FAC
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	85		

Herb Stratum (Plot size: 2 meter radius)

1.	--Kalmia angustifolia	5	Y	FAC
2.	--Carex trisperma	3	Y	OBL
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	8		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***100.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	3	x 1 =	3
FACW spp.	60	x 2 =	120
FAC spp.	110	x 3 =	330
FACU spp.	15	x 4 =	60
UPL spp.	0	x 5 =	0
Total	188 (A)		513 (B)

Prevalence Index = B/A = ***2.729***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Rise	Local Relief:	Convex
Slope (%):	2%	Latitude: 44.671092	Longitude: -67.787372 Datum: NAD83

Date:	04/25/17
County:	Washington
State:	Maine
Wetland ID:	02CF_Z
Sample Point:	**Upland**
Community ID:	PEM

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth:	(in.)
Water Table Present?	☐ Yes ☑ No	Depth:	(in.)
Saturation Present?	☐ Yes ☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
1	0	--	--	--	--	--	--	--	--	--	mucky peat
0	3	1	10YR	4/4	100	--	--	--	--	--	fine sandy loam
3	12	2	2.5Y	3/4	85	10YR	4/2	15	RM	M	fine sandy loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: hard pan Depth: 12"

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 02CF_Z Sample Point **Upland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Pinus strobus	5	Y	FACU
2.	--Comptonia peregrina	10	Y	NI
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	15		

Herb Stratum (Plot size: 2 meter radius)

1.	--Gaultheria procumbens	20	Y	FACU
2.	--Kalmia angustifolia	10	Y	FAC
3.	--Vaccinium angustifolium	10	Y	FACU
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	40		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***20.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	10	x 3 =	30
FACU spp.	35	x 4 =	140
UPL spp.	10	x 5 =	50
Total	55 (A)		220 (B)

Prevalence Index = B/A = ***4.000***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☑ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Depression	Local Relief:	Concave
Slope (%):	0%	Latitude: 44.671066	Longitude: -67.787425 Datum: NAD83

Date:	04/25/17
County:	Washington
State:	Maine
Wetland ID:	02CF_Z
Sample Point:	**Wetland**
Community ID:	PEM

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Is This Sampling Point Within A Wetland? ☑ **Yes** ☐ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☑ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☑ Yes	☐ No	Depth: 4	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)	Matrix %	Mottles Color (Moist)	Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
1	0	--	--	--	--	--	--	--	mucky peat
0	6	1	10YR 3/2	100	--	--	--	--	fine sandy loam
6	12	2	2.5Y 5/1	90	7.5YR 4/4	10	C	M	fine sandy loam
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☑ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Depth:

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 02CF_Z Sample Point **Wetland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Spiraea alba	20	Y	FACW
2.	--Spiraea tomentosa	20	Y	FACW
3.	--Abies balsamea	5	N	FAC
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	45		

Herb Stratum (Plot size: 2 meter radius)

1.	--Calamagrostis canadensis	80	Y	OBL
2.	--Solidago rugosa	5	N	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	85		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***100.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	80	x 1 =	80
FACW spp.	40	x 2 =	80
FAC spp.	10	x 3 =	30
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	130 (A)		190 (B)

Prevalence Index = B/A = ***1.462***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Rise	Local Relief:	Convex
Slope (%):	3%	Latitude: 44.679660	Longitude: -67.817254 Datum: NAD83

Date:	04/24/17
County:	Washington
State:	Maine
Wetland ID:	04TT_B
Sample Point:	**Upland**
Community ID:	PFO

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☐ No	Depth:	(in.)
Water Table Present?	☐ Yes ☐ No	Depth:	(in.)
Saturation Present?	☐ Yes ☐ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)	Matrix %	Mottles Color (Moist)	Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
2	0	--	--	--	--	--	--	--	--duff
0	4	1	10YR	4/6	100	--	--	--	loamy sand
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: rock/boulders Depth: 4"

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM

Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 04TT_B Sample Point **Upland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Quercus rubra	40	Y	FACU
2.	--Thuja occidentalis	30	Y	FACW
3.	--Abies balsamea	15	N	FAC
4.	--Betula papyrifera	15	N	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	100		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Abies balsamea	30	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	30		

Herb Stratum (Plot size: 2 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	0		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***66.7%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	30	x 2 =	60
FAC spp.	45	x 3 =	135
FACU spp.	55	x 4 =	220
UPL spp.	0	x 5 =	0
Total	130 (A)		415 (B)

Prevalence Index = B/A = ***3.192***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Remarks:

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Depression	Local Relief:	Concave
Slope (%):	0%	Latitude: 44.679542	Longitude: -67.817327 Datum: NAD83

Date:	04/24/17
County:	Washington
State:	Maine
Wetland ID:	04TT_B
Sample Point:	**Wetland**
Community ID:	PFO

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Is This Sampling Point Within A Wetland? ☑ **Yes** ☐ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☑ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☑ Yes	☐ No	Depth: 3	(in.)
Saturation Present?	☑ Yes	☐ No	Depth: 0	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	36	1	--	--	--	--	--	--	--	--	mucky peat
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☑ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Depth:

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 04TT_B Sample Point **Wetland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Thuja occidentalis	90	Y	FACW
2.	--Betula alleghaniensis	10	N	FACW
3.	--Abies balsamea	15	N	FAC
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	115		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Abies balsamea	15	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	15		

Herb Stratum (Plot size: 2 meter radius)

1.	--Carex trisperma	10	Y	OBL
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	10		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***100.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	10	x 1 =	10
FACW spp.	100	x 2 =	200
FAC spp.	30	x 3 =	90
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	140 (A)		300 (B)

Prevalence Index = B/A = ***2.143***

Hydrophytic Vegetation Indicators:

☐	Yes	☐ No	Rapid Test for Hydrophytic Vegetation
☑	Yes	☐ No	Dominance Test is > 50%
☑	Yes	☐ No	Prevalence Index is ≤ 3.0 *
☐	Yes	☐ No	Morphological Adaptations (Explain) *
☐	Yes	☐ No	Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Rise	Local Relief:	Convex
Slope (%):	3%	Latitude: 44.710449	Longitude: -67.888271 Datum: NAD83

Date:	04/26/17
County:	Washington
State:	Maine
Wetland ID:	04TT_C
Sample Point:	**Upland**
Community ID:	PFO

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth:	(in.)
Water Table Present?	☐ Yes ☑ No	Depth:	(in.)
Saturation Present?	☐ Yes ☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
1	0	--	--	--	--	--	--	--	--	--	--duff
0	1	1	10YR	3/2	100	--	--	--	--	--	fine sandy loam
1	6	2	7.5YR	4/4	100	--	--	--	--	--	fine sandy loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: rocky till Depth: 6"

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 04TT_C Sample Point **Upland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Quercus rubra	40	Y	FACU
2.	--Betula populifolia	15	Y	FAC
3.	--Fraxinus pennsylvanica	5	N	FACW
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	60		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Quercus rubra	30	Y	FACU
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	30		

Herb Stratum (Plot size: 2 meter radius)

1.	--Gaultheria procumbens	20	Y	FACU
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	20		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***25.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	5	x 2 =	10
FAC spp.	15	x 3 =	45
FACU spp.	90	x 4 =	360
UPL spp.	0	x 5 =	0
Total	110 (A)		415 (B)

Prevalence Index = B/A = ***3.773***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Depression	Local Relief:	Concave
Slope (%):	0%	Latitude: 44.710449	Longitude: -67.888271 Datum: NAD83

Date:	04/26/17
County:	Washington
State:	Maine
Wetland ID:	04TT_C
Sample Point:	**Wetland**
Community ID:	PFO

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Is This Sampling Point Within A Wetland? ☑ **Yes** ☐ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☑ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☑ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☑ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☑ Yes	☐ No	Depth: 0	(in.)
Saturation Present?	☑ Yes	☐ No	Depth: 0	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	4	1	--	--	--	--	--	--	--	--	mucky peat
4	10	2	10YR	3/2	100	--	--	--	--	--	fine sandy loam
10	16	3	10YR	4/2	80	10YR	4/4	20	C	M	fine sandy loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☑ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Depth:

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM

Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 04TT_C Sample Point **Wetland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Acer rubrum	25	Y	FAC
2.	--Fraxinus pennsylvanica	25	Y	FACW
3.	--Betula populifolia	15	Y	FAC
4.	--Quercus rubra	5	N	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	70		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Ilex verticillata	10	Y	FACW
2.	--Fraxinus pennsylvanica	5	Y	FACW
3.	--Spiraea alba	5	Y	FACW
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	20		

Herb Stratum (Plot size: 2 meter radius)

1.	--Glyceria melicaria	40	Y	OBL
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	40		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***100.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	40	x 1 =	40
FACW spp.	45	x 2 =	90
FAC spp.	40	x 3 =	120
FACU spp.	5	x 4 =	20
UPL spp.	0	x 5 =	0
Total	130 (A)		270 (B)

Prevalence Index = B/A = ***2.077***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Remarks:

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Side slope	Local Relief:	Convex
Slope (%):	25%	Latitude: 44.688791	Longitude: -67.863813 Datum: NAD83

Date:	04/26/17
County:	Washington
State:	Maine
Wetland ID:	04TT_J
Sample Point:	**Upland**
Community ID:	PSS

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth:	(in.)
Water Table Present?	☐ Yes ☑ No	Depth:	(in.)
Saturation Present?	☐ Yes ☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
1	0	--	--	--	--	--	--	--	--	--	--duff
0	1	1	10YR	4/1	100	--	--	--	--	--	fine sandy loam
1	8	2	10YR	4/4	100	--	--	--	--	--	fine sandy loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: rocky till Depth: 8"

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM

Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 04TT_J Sample Point **Upland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Quercus rubra	35	Y	FACU
2.	--Betula populifolia	25	Y	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	60		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Betula populifolia	35	Y	FAC
2.	--Quercus rubra	15	Y	FACU
3.	--Ilex verticillata	10	N	FACW
4.	--Hamamelis virginiana	10	N	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	70		

Herb Stratum (Plot size: 2 meter radius)

1.	--Kalmia angustifolia	5	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	5		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***60.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	10	x 2 =	20
FAC spp.	65	x 3 =	195
FACU spp.	60	x 4 =	240
UPL spp.	0	x 5 =	0
Total	135 (A)		455 (B)

Prevalence Index = B/A = ***3.370***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site:	Downeast Wind Project/	Stantec Project #:	195601142
Applicant:	Apex Clean Energy, Inc.		
Investigator #1:	Tom Tetreau	Investigator #2:	
Soil Unit:		NWI/WWI Classification:	
Landform:	Depression	Local Relief:	Concave
Slope (%):	0%	Latitude: 44.688696	Longitude: -67.863803 Datum: NAD83

Date:	04/26/17
County:	Washington
State:	Maine
Wetland ID:	04TT_J
Sample Point:	**Wetland**
Community ID:	PSS

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Is This Sampling Point Within A Wetland? ☑ **Yes** ☐ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☑ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☑ Yes	☐ No	Depth: 8	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A

Remarks:

SOILS

Map Unit Name: 0 Series Drainage Class: [E.g. moderately well, poorly, etc]

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	36	1	--	--	--	--	--	--	--	--	mucky peat
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)
- ☑ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: Depth:

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northeast and Northcentral Region

Project/Site: Downeast Wind Project/ Wetland ID: 04TT_J Sample Point **Wetland**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--Quercus rubra	15	Y	FACU
2.	--Betula populifolia	15	Y	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	30		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--Vaccinium coryumbosum	85	Y	FACW
2.	--Rhododendron canadense	30	Y	FACW
3.	--Ilex verticillata	15	N	FACW
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	130		

Herb Stratum (Plot size: 2 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	0		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***75.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	130	x 2 =	260
FAC spp.	15	x 3 =	45
FACU spp.	15	x 4 =	60
UPL spp.	0	x 5 =	0
Total	160 (A)		365 (B)

Prevalence Index = B/A = ***2.281***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☐ No Morphological Adaptations (Explain) *
- ☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

ATTACHMENT C

Wetland and Stream Photographs

Attachment C: Wetland and Stream Photographic Log

Wetland Photos

Wetland and Stream Survey Report – Downeast Wind Project	
Photo: #1 **Date**: 9/09/2019 **ID**: W-CWF-1 **Comments**: View west of PFO wetland	
Photo: #2 **Date**: 9/10/2019 **ID**: W-CWF-2 **Comments**: View of PFO wetland looking east.	

Wetland Survey Report – Downeast Wind Project	
Photo: #3 **Date**: 9/10/2019 **ID**: W-CWF-3 **Comments**: View of PFO wetland looking north	
Photo: #4 **Date**: 9/10/2019 **ID**: W-CWF-4 **Comments**: View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #5 **Date**: 9/10/2019 **ID**: W-CWF-5 **Comments**: View of PFO wetland looking east	
Photo: #6 **Date**: 9/10/2019 **ID**: W-CWF-7 **Comments**: View of PFO wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #7 **Date**: 9/10/2019 **ID**: W-CWF-8 **Comments**: View of PFO wetland looking south	
Photo: #8 **Date**: 9/11/2019 **ID**: W-CWF-9 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #9 **Date**: 9/11/2019 **ID**: W-CWF-10 **Comments**: View of PFO wetland looking north	
Photo: #10 **Date**: 9/11/2019 **ID**: W-CWF-10 **Comments**: View of PSS wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #11 **Date**: 9/11/2019 **ID**: W-CWF-11 **Comments**: View of PFO wetland looking north	
Photo: #12 **Date**: 9/12/2019 **ID**: W-CWF-12 **Comments:** View of PSS wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #13 **Date**: 9/12/2019 **ID**: W-CWF-13 **Comments**: View of PFO wetland looking north	
Photo: #14 **Date**: 9/12/2019 **ID**: W-CWF-14 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #15 **Date**: 9/12/2019 **ID**: W-CWF-15 **Comments**: View of PEM wetland looking east	
Photo: #16 **Date**: 9/12/2019 **ID**: W-CWF-16 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #17 **Date**: 9/12/2019 **ID**: W-CWF-17 **Comments**: View of PFO wetland looking south	
Photo: #18 **Date**: 9/12/2019 **ID**: W-CWF-18 **Comments**: View of PFO wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #19 **Date**: 9/12/2019 **ID**: W-CWF-19 **Comments**: View of PUB wetland looking south	
Photo: #20 **Date**: 9/12/2019 **ID**: W-CWF-20 **Comments**: View of PEM wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #21 **Date**: 10/13/2019 **ID**: W-CWF-21 **Comments**: View of PFO wetland looking north	
Photo: #22 **Date**: 9/13/2019 **ID**: W-CWF-22 **Comments**: View of PEM wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #23 **Date**: 9/13/2019 **ID**: W-CWF-23 **Comments**: View of PEM wetland looking north	
Photo: #24 **Date**: 9/13/2019 **ID**: W-CWF-24 **Comments**: View of PFO wetland looking east; PUB portion of wetland excaved	

Wetland Survey Report – Downeast Wind Project	
Photo: #25 **Date**: 9/16/2019 **ID**: W-CWF-25 **Comments**: View of PEM wetland looking east	
Photo: #26 **Date**: 9/16/2019 **ID**: W-CWF-26 **Comments**: View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #27 **Date**: 9/17/2019 **ID**: W-CWF-27 **Comments**: View of PFO wetland looking south	
Photo: #28 **Date**: 9/17/2019 **ID**: W-CWF-28 **Comments:** View of PFO wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #29 **Date**: 11/19/2019 **ID**: W-CWF-28 **Comments**: View of PFO wetland looking south	
Photo: #30 **Date**: 9/17/2019 **ID**: W-CWF-28 **Comments**: View of PSS wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #31 **Date**: 9/17/2019 **ID**: W-CWF-29 **Comments**: View of PSS wetland looking east	
Photo: #32 **Date**: 9/17/2019 **ID**: W-CWF-30 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #33 **Date**: 9/17/2019 **ID**: W-CWF-31 **Comments**: View of PFO wetland looking south	
Photo: #34 **Date**: 9/18/2019 **ID**: W-CWF-32 **Comments**: View of PEM wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #35 **Date**: 9/18/2019 **ID**: W-CWF-33 **Comments**: View of PFO wetland looking north	
Photo: #36 **Date**: 9/18/2019 **ID**: W-CWF-34 **Comments**: View of PFO wetland looking north	

Apex – Wetland Survey Report – Downeast Wind Project	
Photo: #37 **Date**: 9/18/2019 **ID**: W-CWF-35 **Comments**: View of PFO wetland looking north	
Photo: #38 **Date**: 9/18/2019 **ID**: W-CWF-36 **Comments**: View of PSS wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #39 **Date**: 9/18/2019 **ID**: W-CWF-37 **Comments**: View of PFO wetland looking east	
Photo: #40 **Date**: 9/19/2019 **ID**: W-CWF-38 **Comments**: View of PSS wetland looking west; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #41 **Date**: 9/19/2019 **ID**: W-CWF-39 **Comments**: View of PFO wetland looking west; Area is wetland, all three wetland parameters are present	
Photo: #42 **Date**: 9/19/2019 **ID**: W-CWF-40 **Comments:** View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #43 **Date**: 9/19/2019 **ID**: W-CWF-41 **Comments**: View of PUB wetland looking west	
Photo: #44 **Date**: 9/20/2019 **ID**: W-CWF-42 **Comments**: View of PUB wetland looking west	

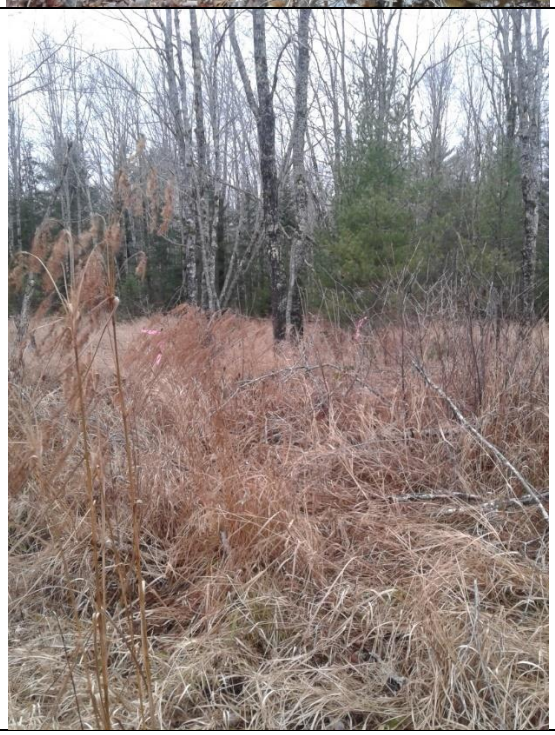
Wetland Survey Report – Downeast Wind Project	
Photo: #45 **Date**: 11/18/2019 **ID**: W-CWF-43 **Comments**: View of PFO wetland looking south	
Photo: #46 **Date**: 11/19/2019 **ID**: W-CWF-44 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #47 **Date**: 11/19/2019 **ID**: W-CWF-45 **Comments**: View of PFO wetland looking south	
Photo: #48 **Date**: 11/19/2019 **ID**: W-CWF-46 **Comments**: View of PSS wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #49 **Date**: 11/19/2019 **ID**: W-CWF-47 **Comments**: View of PFO wetland looking west	
Photo: #50 **Date**: 11/19/2019 **ID**: W-CWF-48 **Comments** View of PFO wetland looking	

Wetland Survey Report – Downeast Wind Project	
Photo: #51 **Date**: 11/19/2019 **ID**: W-CWF-50 **Comments**: View of PFO wetland looking north	
Photo: #52 **Date**: 11/20/2019 **ID**: W-CWF-54 **Comments**: View of PFO wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #53 **Date**: 11/20/2019 **ID**: W-CWF-55 **Comments**: View of PFO wetland looking north	
Photo: #54 **Date**: 11/20/2019 **ID**: W-CWF-56 **Comments**: View of PFO wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #55 **Date**: 11/20/2019 **ID**: W-CWF-57 **Comments**: View of PFO wetland looking west	
Photo: #56 **Date**: 11/20/2019 **ID**: W-CWF-58 **Comments**: View of PFO wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #57 **Date**: 11/20/2019 **ID**: W-CWF-58 **Comments**: View of PEM wetland looking north	
Photo: #58 **Date**: 11/21/2019 **ID**: W-CWF-59 **Comments**: View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #59 **Date**: 11/21/2019 **ID**: W-CWF-60 **Comments**: View of PFO wetland looking south	
Photo: #60 **Date**: 11/21/2019 **ID**: W-CWF-61 **Comments**: View of PSS wetland looking west; Bog WoSS	

Wetland Survey Report – Downeast Wind Project	
Photo: #61 **Date**: 11/21/2019 **ID**: W-CWF-63 **Comments**: View of PEM wetland looking north	
Photo: #62 **Date**: 11/22/2019 **ID**: W-CWF-67 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #63 **Date**: 11/22/2019 **ID**: W-CWF-71 **Comments**: View of PEM wetland looking east	
Photo: #64 **Date**: 11/22/2019 **ID**: W-CWF-72 **Comments**: View of PFO wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #65 **Date**: 9/11/2019 **ID**: W-DMC-01 **Comments**: View of PFO wetland looking west	
Photo: #66 **Date**: 9/11/2019 **ID**: W-DMC-02 **Comments**: View of PFO wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #67 **Date**: 9/12/2019 **ID**: W-DMC-03 **Comments**: View of PFO wetland looking west	
Photo: #68 **Date**: 10/16/2019 **ID**: W-DMC-20 **Comments**: View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #69 **Date**: 10/16/2019 **ID**: W-DMC-21 **Comments**: View of PFO wetland looking north	
Photo: #70 **Date**: 9/18/2019 **ID**: W-GAR-01 **Comments**: View of PFO wetland looking north; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #71 **Date**: 9/18/2019 **ID**: W-GAR-02 **Comments**: View of PFO wetland looking east; Area is wetland, all three wetland parameters are present	
Photo: #72 **Date**: 9/18/2019 **ID**: W-GAR-03 **Comments:** View of PFO wetland looking west; Area is wetland, all three wetland parameters are present	

Aetland Survey Report – Downeast Wind Project	
Photo: #73 **Date**: 9/18/2019 **ID**: W-GAR-04 **Comments**: View of PFO wetland looking west; Area is wetland, all three wetland parameters are present	
Photo: #74 **Date**: 9/18/2019 **ID**: W-GAR-05 **Comments**: View of PFO wetland looking west; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #75 **Date**: 9/18/2019 **ID**: W-GAR-06 **Comments**: View of PFO wetland looking west; Area is wetland, all three wetland parameters are present	
Photo: #76 **Date**: 9/19/2019 **ID**: W-GAR-07 **Comments**: View of PEM wetland looking east; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #77 **Date**: 9/19/2019 **ID**: W-GAR-07 **Comments**: View of PFO wetland looking south; Area is wetland, all three wetland parameters are present	
Photo: #78 **Date**: 9/19/2019 **ID**: W-GAR-07 **Comments**: View of PSS wetland looking west; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #79 **Date**: 9/19/2019 **ID**: W-GAR-08 **Comments**: View of PSS wetland looking west; Area is wetland, all three wetland parameters are present	
Photo: #80 **Date**: 9/19/2019 **ID**: W-GAR-09 **Comments**: View of PEM wetland looking east; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #81 **Date**: 9/19/2019 **ID**: W-GAR-10 **Comments**: View of PEM wetland looking east; Area is wetland, all three wetland parameters are present	
Photo: #82 **Date**: 9/19/2019 **ID**: W-GAR-11 **Comments**: View of PEM wetland looking west; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #83 **Date**: 9/19/2019 **ID**: W-GAR-12 **Comments**: View of PFO wetland looking west; Area is wetland, all three wetland parameters are present	
Photo: #84 **Date**: 9/19/2019 **ID**: W-GAR-13 **Comments**: View of PFO wetland looking west; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #85 **Date**: 9/10/2019 **ID**: W-JMR-1 **Comments**: View of PSS wetland looking; Area is wetland, all three wetland parameters are present	
Photo: #86 **Date**: 9/10/2019 **ID**: W-JMR-2 **Comments**: View of PEM wetland looking north; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #87 **Date**: 9/16/2019 **ID**: W-JMR-3 **Comments**: View of PEM wetland looking east; Area is wetland, all three wetland parameters are present	
Photo: #88 **Date**: 9/10/2019 **ID**: W-JMR-3 **Comments:** View of PFO wetland looking north; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #89 **Date**: 9/16/2019 **ID**: W-JMR-3 **Comments**: View of PFO wetland looking south; Area is wetland, all three wetland parameters are present	
Photo: #90 **Date**: 9/11/2019 **ID**: W-JMR-4 **Comments**: View of PFO wetland looking north; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #91 **Date**: 9/11/2019 **ID**: W-JMR-4 **Comments**: View of PSS wetland looking west	
Photo: #92 **Date**: 9/11/2019 **ID**: W-JMR-5 **Comments**: View of PEM wetland looking south; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #93 **Date**: 9/12/2019 **ID**: W-JMR-6 **Comments**: View of PEM wetland looking west; Area is wetland, all three wetland parameters are present	
Photo: #94 **Date**: 9/12/2019 **ID**: W-JMR-6 **Comments**: View of PFO wetland looking east; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #95 **Date**: 9/12/2019 **ID**: W-JMR-7 **Comments**: View of PFO wetland looking west; Area is wetland, all three wetland parameters are present	
Photo: #96 **Date**: 9/13/2019 **ID**: W-JMR-8 **Comments**: View of PFO wetland looking south; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #97 **Date**: 9/16/2019 **ID**: W-JMR-9 **Comments**: View of PFO wetland looking north; Water impounded by road. Poor drainage with culvert. Water overflow across road as non-jurisdictional drainage	
Photo: #98 **Date**: 9/16/2019 **ID**: W-JMR-9 **Comments**: View of PEM wetland looking east; Ditches/drain tiles observed. Roadside wetland, water impounded by road and semi effective culvert.	

Wetland Survey Report – Downeast Wind Project	
Photo: #99 **Date**: 9/17/2019 **ID**: W-JMR-10 **Comments**: View of PFO wetland looking west; Potential WOSS within 25' of perennial stream	
Photo: #100 **Date**: 9/17/2019 **ID**: W-JMR-11 **Comments**: View of PEM wetland looking south; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #101 **Date**: 9/17/2019 **ID**: W-JMR-11 **Comments**: View of PFO wetland looking east	
Photo: #102 **Date**: 9/17/2019 **ID**: W-JMR-12 **Comments:** View of PEM wetland looking south; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #103 **Date**: 9/17/2019 **ID**: W-JMR-12 **Comments**: View of PSS wetland looking south	
Photo: #104 **Date**: 9/17/2019 **ID**: W-JMR-13 **Comments**: View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #105 **Date**: 9/17/2019 **ID**: W-JMR-13 **Comments**: View of PSS wetland looking north; Area is wetland, all three wetland parameters are present	
Photo: #106 **Date**: 9/18/2019 **ID**: W-JMR-14 **Comments**: View of PFO wetland looking east; Area is wetland, all three wetland parameters are present	

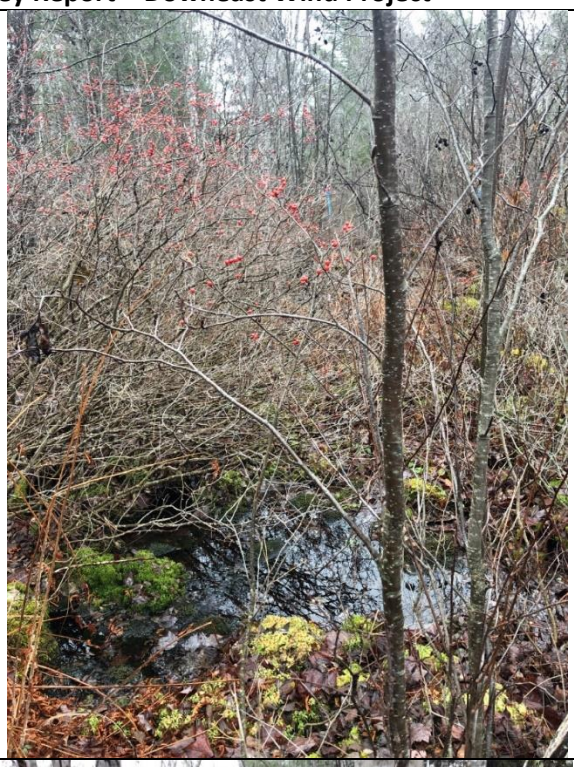
Wetland Survey Report – Downeast Wind Project	
Photo: #107 **Date**: 9/18/2019 **ID**: W-JMR-14 **Comments**: View of PSS wetland looking north; Area is wetland, all three wetland parameters are present	
Photo: #108 **Date**: 9/19/2019 **ID**: W-JMR-15 **Comments**: View of PSS wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #109 **Date**: 9/20/2019 **ID**: W-JMR-16 **Comments**: View of PEM wetland looking west; Area is wetland, all three wetland parameters are present	
Photo: #110 **Date**: 9/18/2019 **ID**: W-JMR-17 **Comments** View of PEM wetland looking north; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #111 **Date**: 9/18/2019 **ID**: W-JMR-17 **Comments**: View of PFO wetland looking north; Area is wetland, all three wetland parameters are present	
Photo: #112 **Date**: 9/18/2019 **ID**: W-JMR-18 **Comments**: View of PFO wetland looking west; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project		
Photo: #113 **Date**: 9/19/2019 **ID**: W-JMR-19 **Comments**: View of PEM wetland looking east; Area is wetland, all three wetland parameters are present		
Photo: #114 **Date**: 9/19/2019 **ID**: W-JMR-20 **Comments**: View of PSS wetland looking south; Area is wetland, all three wetland parameters are present		

Wetland Survey Report – Downeast Wind Project	
Photo: #115 **Date**: 9/19/2019 **ID**: W-JMR-21 **Comments**: View of PSS wetland looking west; Area is wetland, all three wetland parameters are present	
Photo: #116 **Date**: 9/19/2019 **ID**: W-JMR-22 **Comments**: View of PSS wetland looking west; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #117 **Date**: 9/20/2019 **ID**: W-JMR-23 **Comments**: View of PSS wetland looking east; Area is wetland, all three wetland parameters are present	
Photo: #118 **Date**: 9/20/2019 **ID**: W-JMR-24 **Comments**: View of PFO wetland looking north; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #119 **Date**: 9/20/2019 **ID**: W-JMR-25 **Comments**: View of PSS wetland looking west; Area is wetland, all three wetland parameters are present	
Photo: #120 **Date**: 9/21/2019 **ID**: W-JMR-26 **Comments**: View of PFO wetland looking south; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #121 **Date**: 9/21/2019 **ID**: W-JMR-27 **Comments**: View of PFO wetland looking north; Area is wetland, all three wetland parameters are present	
Photo: #122 **Date**: 9/21/2019 **ID**: W-JMR-28 **Comments**: View of PSS wetland looking north; Area is wetland, all three wetland parameters are present	

Wetland Survey Report – Downeast Wind Project	
Photo: #123 **Date**: 9/21/2019 **ID**: W-JMR-29 **Comments**: View of PEM wetland looking south; Area is wetland, all three wetland parameters are present	
Photo: #124 **Date**: 9/21/2019 **ID**: W-JMR-30 **Comments**: View of PFO wetland looking north; Area is wetland, all three wetland parameters are present	

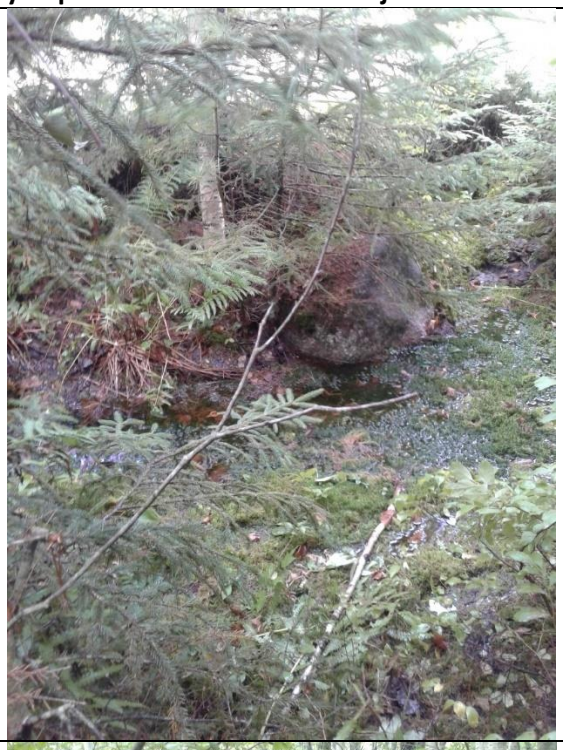
Wetland Survey Report – Downeast Wind Project	
Photo: #125 **Date**: 9/09/2019 **ID**: W-MJR-1 **Comments**: View of PFO wetland looking east	
Photo: #126 **Date**: 9/09/2019 **ID**: W-MJR-2 **Comments**: View of PFO wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #127 **Date**: 9/10/2019 **ID**: W-MJR-3 **Comments**: View of PFO wetland looking west	
Photo: #128 **Date**: 9/10/2019 **ID**: W-MJR-3 **Comments**: View of PSS wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #129 **Date**: 9/10/2019 **ID**: W-MJR-4 **Comments**: View of PFO wetland looking west	
Photo: #130 **Date**: 9/10/2019 **ID**: W-MJR-5 **Comments**: View of PSS wetland looking south	

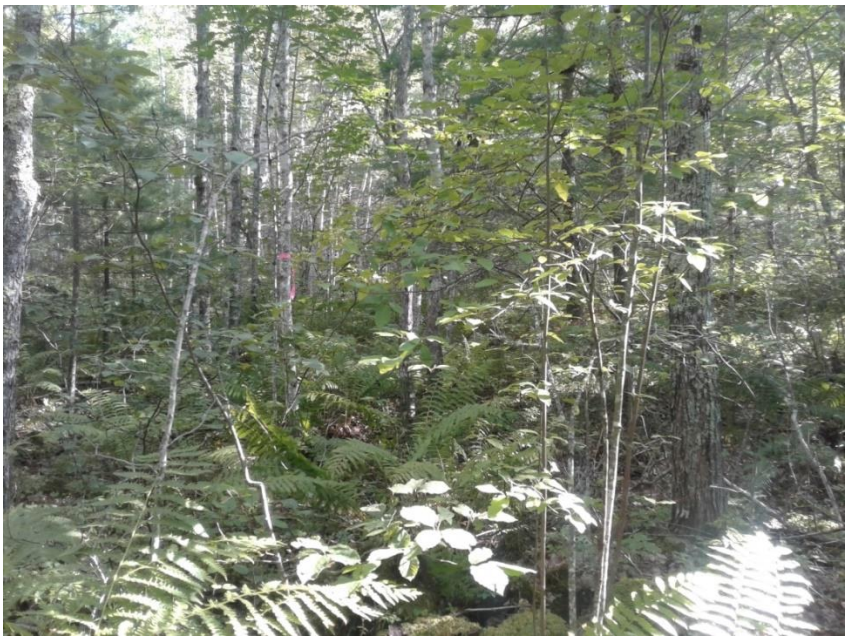
Wetland Survey Report – Downeast Wind Project	
Photo: #131 **Date**: 9/10/2019 **ID**: W-MJR-6 **Comments**: View of PSS wetland looking north	
Photo: #132 **Date**: 9/10/2019 **ID**: W-MJR-7 **Comments:** View of PEM wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #133 **Date**: 9/11/2019 **ID**: W-MJR-8 **Comments**: View of PSS wetland looking west	
Photo: #134 **Date**: 9/11/2019 **ID**: W-MJR-9 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #135 **Date**: 9/11/2019 **ID**: W-MJR-10 **Comments**: View of PSS wetland looking east	
Photo: #136 **Date**: 9/11/2019 **ID**: W-MJR-11 **Comments**: View of PSS wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #137 **Date**: 9/12/2019 **ID**: W-MJR-12 **Comments**: View of PFO wetland looking south	
Photo: #138 **Date**: 9/12/2019 **ID**: W-MJR-13 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #139 **Date**: 9/12/2019 **ID**: W-MJR-14 **Comments**: View of PFO wetland looking north	
Photo: #140 **Date**: 9/12/2019 **ID**: W-MJR-15 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #141 **Date**: 9/12/2019 **ID**: W-MJR-16 **Comments**: View of PSS wetland looking south	
Photo: #142 **Date**: 9/13/2019 **ID**: W-MJR-17 **Comments**: View of PEM wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #143 **Date**: 9/13/2019 **ID**: W-MJR-18 **Comments**: View of PSS wetland looking north	
Photo: #144 **Date**: 9/16/2019 **ID**: W-MJR-19 **Comments**: View of PSS wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #145 **Date**: 9/16/2019 **ID**: W-MJR-20 **Comments**: View of PSS wetland looking south	
Photo: #146 **Date**: 9/16/2019 **ID**: W-MJR-21 **Comments**: View of PSS wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #147 **Date**: 9/17/2019 **ID**: W-MJR-22 **Comments**: View of PFO wetland looking south	
Photo: #148 **Date**: 9/16/2019 **ID**: W-MJR-22 **Comments:** View of PSS wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #149 **Date**: 9/17/2019 **ID**: W-MJR-23 **Comments:** View of PFO wetland looking east	
Photo: #150 **Date**: 9/17/2019 **ID**: W-MJR-24 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #151 **Date**: 9/18/2019 **ID**: W-MJR-25 **Comments**: View of PSS wetland looking north	
Photo: #152 **Date**: 9/18/2019 **ID**: W-MJR-26 **Comments**: View of PFO wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #153 **Date**: 11/18/2019 **ID**: W-MJR-27 **Comments**: View of PSS wetland looking east	
Photo: #154 **Date**: 11/18/2019 **ID**: W-MJR-28 **Comments**: View of PFO wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #155 **Date**: 11/18/2019 **ID**: W-MJR-29 **Comments**: View of PFO wetland looking south	
Photo: #156 **Date**: 11/18/2019 **ID**: W-MJR-30 **Comments**: View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #157 **Date**: 11/19/2019 **ID**: W-MJR-31 **Comments**: View of PSS wetland looking east	
Photo: #158 **Date**: 11/20/2019 **ID**: W-MJR-32 **Comments**: View of PEM wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #159 **Date**: 11/20/2019 **ID**: W-MJR-32 **Comments**: View of PFO wetland looking east	
Photo: #160 **Date**: 11/20/2019 **ID**: W-MJR-32 **Comments**: View of PUB wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #161 **Date**: 11/19/2019 **ID**: W-MJR-33 **Comments**: View of PSS wetland looking north	
Photo: #162 **Date**: 11/19/2019 **ID**: W-MJR-34 **Comments**: View of PFO wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #163 **Date**: 11/22/2019 **ID**: W-MJR-35 **Comments:** View of PSS wetland looking north	
Photo: #164 **Date**: 11/22/2019 **ID**: W-MJR-36 **Comments**: View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #165 **Date**: 11/22/2019 **ID**: W-MJR-37 **Comments**: View of PUB wetland looking north	
Photo: #166 **Date**: 11/22/2019 **ID**: W-MJR-38 **Comments**: View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #167 **Date**: 11/18/2019 **ID**: W-NSD-1 **Comments**: View of PFO wetland looking north	
Photo: #168 **Date**: 11/18/2019 **ID**: W-NSD-1 **Comments**: View of PUB wetland looking east; Beaver activity	

Wetland Survey Report – Downeast Wind Project	
Photo: #169 **Date**: 11/18/2019 **ID**: W-NSD-2 **Comments**: View of PFO wetland looking north	
Photo: #170 **Date**: 11/18/2019 **ID**: W-NSD-3 **Comments** View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #171 **Date**: 11/18/2019 **ID**: W-NSD-4 **Comments**: View of PSS wetland looking west	
Photo: #172 **Date**: 11/20/2019 **ID**: W-NSD-5 **Comments**: View of PFO wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #173	
Date: 11/20/2019	
ID: W-NSD-6 **Comments**: View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #174 **Date**: 11/20/2019 **ID**: W-NSD-8 **Comments**: View of PFO wetland looking west	
Photo: #175 **Date**: 11/20/2019 **ID**: W-NSD-9 **Comments**: View of PFO wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #176 **Date**: 11/21/2019 **ID**: W-NSD-10 **Comments**: View of PFO wetland looking north; Recent snow	
Photo: #177 **Date**: 11/21/2019 **ID**: W-NSD-11 **Comments**: View of PFO wetland looking east; Recent snow	

Wetland Survey Report – Downeast Wind Project	
Photo: #178 **Date**: 11/21/2019 **ID**: W-NSD-12 **Comments**: View of PFO wetland looking south; Recent snow	
Photo: #179 **Date**: 11/21/2019 **ID**: W-NSD-13 **Comments**: View of PFO wetland looking east; Recent snow	

Wetland Survey Report – Downeast Wind Project	
Photo: #180 **Date**: 11/21/2019 **ID**: W-NSD-14 **Comments**: View of PFO wetland looking east; Recent snow	
Photo: #181 **Date**: 11/22/2019 **ID**: W-NSD-15 **Comments**: View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #182 **Date**: 11/22/2019 **ID**: W-NSD-16 **Comments**: View of PUB wetland looking north	
Photo: #183 **Date**: 11/22/2019 **ID**: W-NSD-17 **Comments**: View of PEM wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #184 **Date**: 11/22/2019 **ID**: W-NSD-18 **Comments**: View of PUB wetland looking north	
Photo: #185 **Date**: 9/09/2019 **ID**: W-THE-1 **Comments**: View of PEM wetland looking north; Recently cleared	

Wetland Survey Report – Downeast Wind Project	
Photo: #186 **Date**: 9/10/2019 **ID**: W-THE-2 **Comments**: View of PFO wetland looking south	
Photo: #187 **Date**: 9/10/2019 **ID**: W-THE-3 **Comments**: View of PFO wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #188 **Date**: 9/10/2019 **ID**: W-THE-4 **Comments**: View of PFO wetland looking east	
Photo: #189 **Date**: 9/10/2019 **ID**: W-THE-5 **Comments**: View of PFO wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #190 **Date**: 9/10/2019 **ID**: W-THE-6 **Comments**: View of PFO wetland looking east	
Photo: #191 **Date**: 9/10/2019 **ID**: W-THE-7 **Comments:** View of PFO wetland looking south; Potential WoSS with streams and hydrologic connection to larger wetland system to the north	

Wetland Survey Report – Downeast Wind Project	
Photo: #192 **Date**: 9/11/2019 **ID**: W-THE-8 **Comments**: View of PSS wetland looking south; Better access to the east. All upland to blueberry field	
Photo: #193 **Date**: 9/11/2019 **ID**: W-THE-9 **Comments**: View of PEM wetland looking south; Located in active blueberry agriculture field	

Wetland Survey Report – Downeast Wind Project	
Photo: #194 **Date**: 9/11/2019 **ID**: W-THE-9 **Comments**: View of PFO wetland looking east	
Photo: #195 **Date**: 9/11/2019 **ID**: W-THE-9 **Comments**: View of PSS wetland looking south; Rutting	

Wetland Survey Report – Downeast Wind Project	
Photo: #196 **Date**: 9/11/2019 **ID**: W-THE-10 **Comments**: View of PFO wetland looking west	
Photo: #197 **Date**: 9/11/2019 **ID**: W-THE-11 **Comments**: View of PFO wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #198 **Date**: 9/11/2019 **ID**: W-THE-12 **Comments**: View of PFO wetland looking north	
Photo: #199 **Date**: 9/13/2019 **ID**: W-THE-13 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #200 **Date**: 9/16/2019 **ID**: W-THE-14 **Comments**: View of PFO wetland looking north	
Photo: #201 **Date**: 9/16/2019 **ID**: W-THE-15 **Comments**: View of PEM wetland looking south; Abuts main access road in active blueberry field with rutting present	

Wetland Survey Report – Downeast Wind Project	
Photo: #202 **Date**: 9/18/2019 **ID**: W-THE-16 **Comments**: View of PFO wetland looking west	
Photo: #203 **Date**: 9/18/2019 **ID**: W-THE-17 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #204 **Date**: 9/18/2019 **ID**: W-THE-18 **Comments**: View of PEM wetland looking	
Photo: #205 **Date**: 9/18/2019 **ID**: W-THE-18 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #206 **Date**: 9/18/2019 **ID**: W-THE-18 **Comments**: View of PSS wetland looking west	
Photo: #207 **Date**: 9/19/2019 **ID**: W-THE-19 **Comments:** View of PEM wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #208 **Date**: 9/18/2019 **ID**: W-THE-19 **Comments**: View of PFO wetland looking east; Water drains east through wetland swale. Bouldery with no defined bed, bank, or channel	
Photo: #209 **Date**: 9/19/2019 **ID**: W-THE-20 **Comments**: View of PSS wetland looking west; Potential disturbance with old skid trail	

Wetland Survey Report – Downeast Wind Project	
Photo: #210 **Date**: 9/19/2019 **ID**: W-THE-21 **Comments**: View of PSS wetland looking west	
Photo: #211 **Date**: 9/19/2019 **ID**: W-THE-22 **Comments**: View of PFO wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #212 **Date**: 9/19/2019 **ID**: W-THE-23 **Comments**: View of PSS wetland looking west	
Photo: #213 **Date**: 9/20/2019 **ID**: W-THE-24 **Comments**: View of PSS wetland looking north	

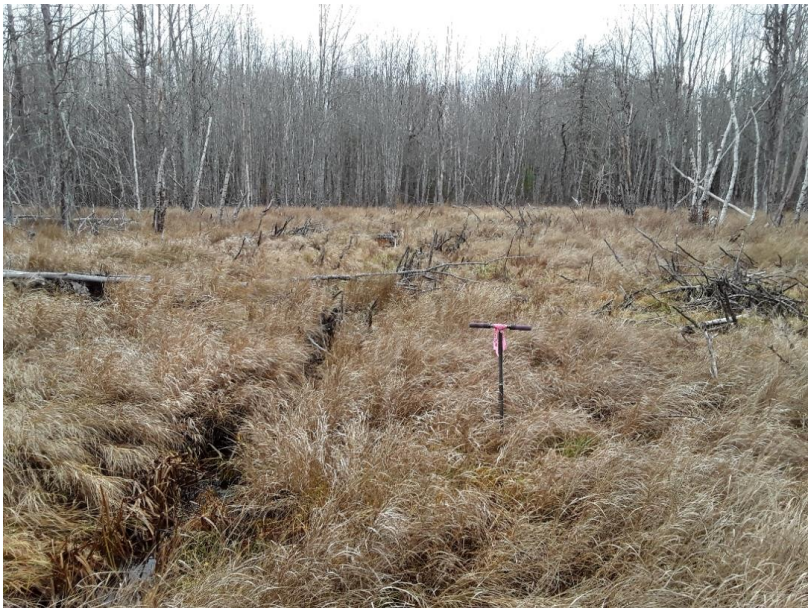
Wetland Survey Report – Downeast Wind Project	
Photo: #214 **Date**: 9/20/2019 **ID**: W-THE-25 **Comments**: View of PFO wetland looking east	
Photo: #215 **Date**: 9/20/2019 **ID**: W-THE-25 **Comments**: View of PSS wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #216 **Date**: 9/20/2019 **ID**: W-THE-25 **Comments**: View of PSS wetland looking west	
Wetland Survey Report – Downeast Wind Project	
Photo: #217 **Date**: 11/04/2020 **ID**: W-SLG-01 **Comments**: View of PSS wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #218 **Date**: 11/05/2020 **ID**: W-SLG-03 **Comments**: View of PSS wetland looking east	
Wetland Survey Report – Downeast Wind Project	
Photo: #219 **Date**: 11/05/2020 **ID**: W-SLG-04 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #220 **Date**: 11/09/2020 **ID**: W-SLG-05 **Comments**: View of PFO wetland looking east	
Wetland Survey Report – Downeast Wind Project	
Photo: #221 **Date**: 11/10/2020 **ID**: W-SLG-06 **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #222 **Date**: 11/10/2020 **ID**: W-SLG-07 **Comments**: View of PFO wetland looking west	
Wetland Survey Report – Downeast Wind Project	
Photo: #223 **Date**: 11/10/2020 **ID**: W-SLG-08 **Comments**: View of PFO wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #224 **Date**: 11/11/2020 **ID**: W-SLG-09 **Comments**: View of PSS wetland looking north	
Wetland Survey Report – Downeast Wind Project	
Photo: #225 **Date**: 11/12/2020 **ID**: W-SLG-10 **Comments**: View of PEM wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #226 **Date**: 11/12/2020 **ID**: W-SLG-10 **Comments**: View of PFO wetland looking south	
Wetland Survey Report – Downeast Wind Project	
Photo: #227 **Date**: 11/11/2020 **ID**: W-SLG-11 **Comments**: View of PSS wetland looking west	

Wetland Survey Report – Downeast Wind Project	
Photo: #228 **Date**: 11/11/2020 **ID**: W-SLG-12 **Comments**: View of PSS wetland looking east	
Wetland Survey Report – Downeast Wind Project	
Photo: #229 **Date**: 11/12/2020 **ID**: W-SLG-12 **Comments**: View of PEM wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #230 **Date**: 11/02/2016 **ID**: 01-CF-G **Comments**: View of PSS wetland looking north	
Wetland Survey Report – Downeast Wind Project	
Photo: #231 **Date**: 11/03/2016 **ID**: 01-CF-R **Comments**: View of PSS wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #232 **Date**: 4/25/2017 **ID**: 01-EB-S **Comments**: View of PSS wetland looking west	
Wetland Survey Report – Downeast Wind Project	
Photo: #233 **Date**: 4/25/2017 **ID**: 01-JL-K **Comments**: View of PSS wetland looking south	

Wetland Survey Report – Downeast Wind Project	
Photo: #234 **Date**: 4/25/2017 **ID**: 01-JL-P **Comments**: View of PSS/PEM wetland looking west	
Wetland Survey Report – Downeast Wind Project	
Photo: #235 **Date**: 4/25/2017 **ID**: 01-CF-H **Comments**: View of PFO wetland looking east	

Wetland Survey Report – Downeast Wind Project	
Photo: #236 **Date**: 4/25/2017 **ID**: 01-CF-Z **Comments**: View of PEM wetland looking west	
Wetland Survey Report – Downeast Wind Project	
Photo: #237 **Date**: 4/25/2017 **ID**: 04-TT-B **Comments**: View of PFO wetland looking north	

Wetland Survey Report – Downeast Wind Project	
Photo: #238 **Date**: 4/26/2017 **ID**: 04-TT-C **Comments**: View of PFO wetland looking south	
Wetland Survey Report – Downeast Wind Project	
Photo: #239 **Date**: 4/26/2017 **ID**: 04-TT-J **Comments**: View of PSS wetland looking west	

Attachment C: Wetland and Stream Photographic Log

Stream Photos

Wetland and Stream Survey Report – Downeast Wind Project	
Photo: #1 **Date**: 9/10/2019 **ID**: S-CWF-1 **Comments**: Downstream view looking west	
Photo: #2 **Date**: 9/11/2019 **ID**: S-CWF-2 **Comments**: Downstream view looking north	

Stream Survey Report – Downeast Wind Project	
Photo: #3 **Date**: 9/11/2019 **ID**: S-CWF-2 **Comments**: Upstream view looking south	
Photo: #4 **Date**: 9/11/2019 **ID**: S-CWF-3 **Comments**: Upstream view looking southeast	

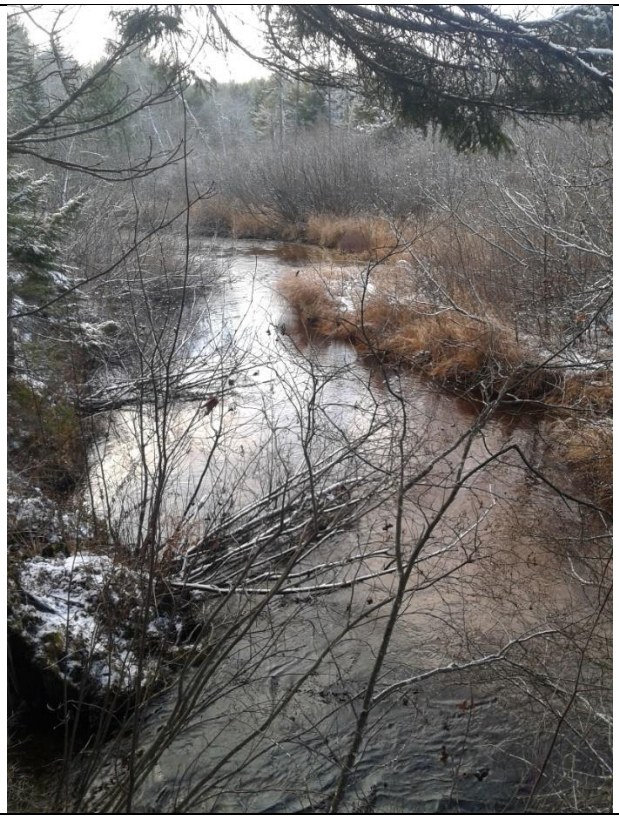
Stream Survey Report – Downeast Wind Project	
Photo: #5 **Date**: 9/12/2019 **ID**: S-CWF-4 **Comments**: Upstream view looking northwest	
Photo: #6 **Date**: 9/13/2019 **ID**: S-CWF-5 **Comments**: Upstream view looking east	

Stream Survey Report – Downeast Wind Project	
Photo: #7 **Date**: 9/18/2019 **ID**: S-CWF-6 **Comments**: View across the stream looking west	
Photo: #8 **Date**: 9/19/2019 **ID**: S-CWF-7 **Comments**: Downstream view looking east	

Stream Survey Report – Downeast Wind Project	
Photo: #9 **Date**: 9/19/2019 **ID**: S-CWF-8 **Comments**: Downstream view looking south	
Photo: #10 **Date**: 9/19/2019 **ID**: S-CWF-9 **Comments**: Downstream view looking south	

Stream Survey Report – Downeast Wind Project	
Photo: #11 **Date**: 9/19/2019 **ID**: S-CWF-10 **Comments**: Upstream view looking north	
Photo: #12 **Date**: 9/19/2019 **ID**: S-CWF-11 **Comments:** View across the stream looking east	

Stream Survey Report – Downeast Wind Project	
Photo: #13 **Date**: 11/20/2019 **ID**: S-CWF-12 **Comments**: Upstream view looking north	
Photo: #14 **Date**: 11/20/2019 **ID**: S-CWF-12 **Comments**: Downstream view looking south	

Stream Survey Report – Downeast Wind Project	
Photo: #15 **Date**: 11/20/2019 **ID**: S-CWF-15 **Comments**: View across the stream looking south	
Photo: #16 **Date**: 11/21/2019 **ID**: S-CWF-16 **Comments**: Downstream view looking southwest	

Stream Survey Report – Downeast Wind Project	
Photo: #17 **Date**: 10/16/2019 **ID**: S-GAR-1 **Comments**: Downstream view looking southeast	
Photo: #18 **Date**: 9/19/2019 **ID**: S-GAR-2 **Comments**: Downstream view looking west	

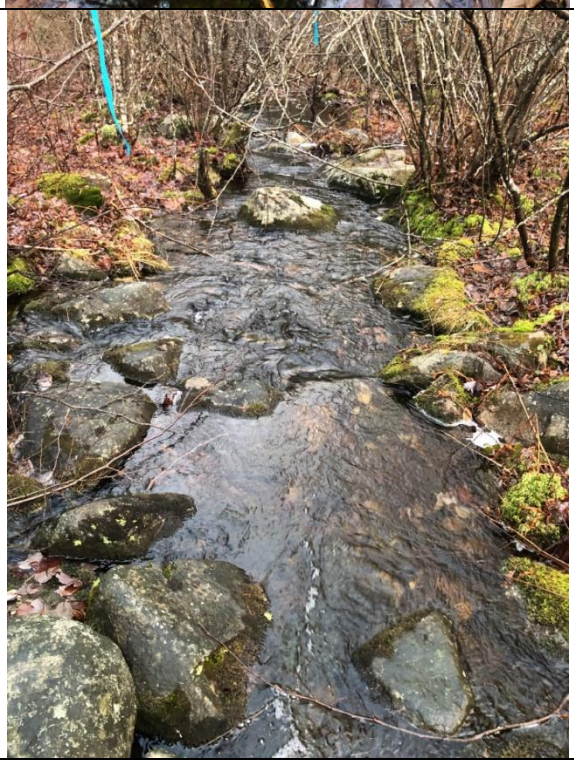
Stream Survey Report – Downeast Wind Project	
Photo: #19 **Date**: 9/12/2019 **ID**: S-JMR-1 **Comments**: View across the stream looking north	
Photo: #20 **Date**: 9/16/2019 **ID**: S-JMR-2 **Comments**: Downstream view looking south	

Stream Survey Report – Downeast Wind Project	
Photo: #21 **Date**: 10/16/2019 **ID**: S-JMR-3 **Comments**: Downstream view looking south	
Photo: #22 **Date**: 9/16/2019 **ID**: S-JMR-4 **Comments**: Downstream view looking south	

Stream Survey Report – Downeast Wind Project	
Photo: #23 **Date**: 9/16/2019 **ID**: S-JMR-5 **Comments**: Upstream view looking north	
Photo: #24 **Date**: 9/17/2019 **ID**: S-JMR-6 **Comments**: Upstream view looking northwest	

Stream Survey Report – Downeast Wind Project	
Photo: #25 **Date**: 9/18/2019 **ID**: S-JMR-7 **Comments**: Upstream view looking west	
Photo: #26 **Date**: 9/18/2019 **ID**: S-JMR-8 **Comments**: Downstream view looking southeast	

Stream Survey Report – Downeast Wind Project	
Photo: #27 **Date**: 9/18/2019 **ID**: S-JMR-9 **Comments**: Upstream view looking northwest	
Photo: #28 **Date**: 9/17/2019 **ID**: S-JMR-10 **Comments:** Downstream view looking southeast	

Stream Survey Report – Downeast Wind Project	
Photo: #29 **Date**: 11/18/2019 **ID**: S-JMR-20 **Comments**: Upstream view looking north	
Photo: #30 **Date**: 11/19/2019 **ID**: S-JMR-21 **Comments**: Downstream view looking southeast	

Stream Survey Report – Downeast Wind Project	
Photo: #31 **Date**: 11/20/2019 **ID**: S-JMR-22 **Comments**: Downstream view looking south	
Photo: #32 **Date**: 11/20/2019 **ID**: S-JMR-23 **Comments**: Downstream view looking southwest	

Stream Survey Report – Downeast Wind Project	
Photo: #33 **Date**: 11/21/2019 **ID**: S-JMR-24 **Comments**: Upstream view looking north	
Photo: #34 **Date**: 11/21/2019 **ID**: S-MJR-1 **Comments**: Downstream view looking southeast	

Stream Survey Report – Downeast Wind Project	
Photo: #33 **Date**: 9/11/2019 **ID**: S-MJR-2 **Comments**: Upstream view looking west	
Photo: #34 **Date**: 9/11/2019 **ID**: S-MJR-3 **Comments**: Upstream view looking northwest	

Stream Survey Report – Downeast Wind Project	
Photo: #35 **Date**: 11/19/2019 **ID**: S-MJR-4 **Comments**: Upstream view looking southwest	
Photo: #36 **Date**: 11/20/2019 **ID**: S-MJR-5 **Comments**: Upstream view looking northwest	

Stream Survey Report – Downeast Wind Project	
Photo: #37 **Date**: 11/20/2019 **ID**: S-MJR-6 **Comments**: Upstream view looking west	
Photo: #38 **Date**: 11/20/2019 **ID**: S-MJR-7 **Comments**: Upstream view looking north	

Stream Survey Report – Downeast Wind Project	
Photo: #39 **Date**: 11/21/2019 **ID**: S-MJR-8 **Comments**: Downstream view looking south	
Photo: #40 **Date**: 11/21/2019 **ID**: S-MJR-9 **Comments:** Downstream view looking south	

Stream Survey Report – Downeast Wind Project	
Photo: #41 **Date**: 11/21/2019 **ID**: S-MJR-10 **Comments**: Downstream view looking southeast	
Photo: #42 **Date**: 11/18/2019 **ID**: S-NSD-1 **Comments**: Downstream view looking east	

Stream Survey Report – Downeast Wind Project	
Photo: #43 **Date**: 11/18/2019 **ID**: S-NSD-2 **Comments**: Upstream view looking north	
Photo: #44 **Date**: 11/18/2019 **ID**: S-NSD-3 **Comments**: Upstream view looking east	

Stream Survey Report – Downeast Wind Project	
Photo: #45 **Date**: 11/19/2019 **ID**: S-NSD-4 **Comments**: Downstream view looking southwest	
Photo: #46 **Date**: 11/19/2019 **ID**: S-NSD-5 **Comments**: Upstream view looking northwest	

Stream Survey Report – Downeast Wind Project	
Photo: #47 **Date**: 11/20/2019 **ID**: S-NSD-6 **Comments**: Upstream view looking southeast	
Photo: #48 **Date**: 11/20/2019 **ID**: S-NSD-7 **Comments** Upstream view looking northwest	

Stream Survey Report – Downeast Wind Project	
Photo: #49 **Date**: 09/11/2019 **ID**: S-THE-1 **Comments**: Upstream view looking east	
Photo: #50 **Date**: 09/12/2019 **ID**: S-THE-2 **Comments**: Upstream view looking north	

Stream Survey Report – Downeast Wind Project	
Photo: #51 **Date**: 09/12/2019 **ID**: S-THE-3 **Comments**: Downstream view looking south	
Photo: #52 **Date**: 09/12/2019 **ID**: S-THE-4 **Comments**: Upstream view looking north	

Stream Survey Report – Downeast Wind Project	
Photo: #53 **Date**: 09/12/2019 **ID**: S-THE-5 **Comments**: Upstream view looking north	
Photo: #54 **Date**: 09/12/2019 **ID**: S-THE-6 **Comments**: View across the stream looking south	

Stream Survey Report – Downeast Wind Project	
Photo: #53 **Date**: 09/13/2019 **ID**: S-THE-7 **Comments**: Downstream view looking northeast	
Photo: #54 **Date**: 09/17/2019 **ID**: S-THE-8 **Comments**: Upstream view looking northwest	

Stream Survey Report – Downeast Wind Project	
Photo: #55 **Date**: 09/18/2019 **ID**: S-THE-9 **Comments**: Upstream view looking north	
Photo: #56 **Date**: 09/18/2019 **ID**: S-THE-9 **Comments**: Downstream view looking south	

Stream Survey Report – Downeast Wind Project	
Photo: #57 **Date**: 09/19/2019 **ID**: S-THE-10 **Comments**: Downstream view looking southeast	
Photo: #58 **Date**: 09/12/2019 **ID**: WB-THE-1 **Comments**: Looking across large waterbody feature	

EXHIBIT 7-2: VERNAL POOL DELINEATION REPORT

Vernal Pool Delineation Report
Proposed Downeast Wind Project

Washington County,
Maine

Prepared for:
Downeast Wind, LLC
366 US Hwy 1
PO Box 219
Columbia, ME 04623

Prepared by:
TRC
14 Gabriel Drive
Augusta, ME 04330

April 9, 2021

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ACRONYMS

CTH	Critical Terrestrial Habitat
CWA	Clean Water Act
GIS	Geographical Information System
GNSS	Global Navigation Satellite Systems
GPS	Global positioning system
MDEP	Maine Department of Environmental Protection
MDIFW	Maine Department of Inland Fisheries and Wildlife
MEGIS	Maine Office of Geographic Information Systems
MW	Megawatt
NRPA	Natural Resources Protection Act
PBR	Permit by Rule
PSVP	Potentially Significant Vernal Pool
RTE	Rare, threatened or endangered species
Survey Area	Project Survey Area
Project	Downeast Wind Project
Stantec	Stantec Inc.
SVP	Significant Vernal Pool
SWH	Significant Wildlife Habitat
TRC	TRC Companies, Inc.
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOSS	Wetland of Special Significance (Maine)

1.0 INTRODUCTION

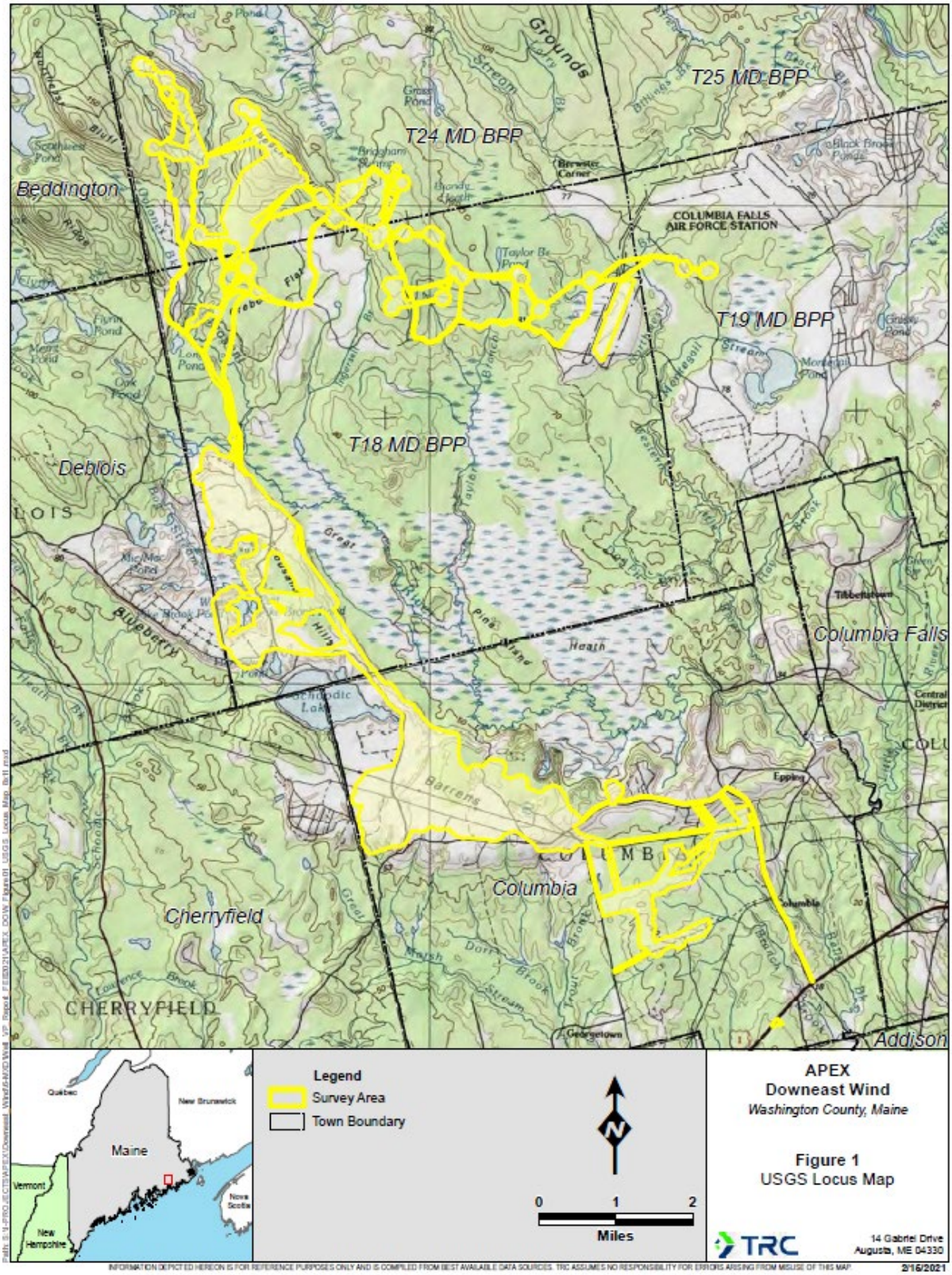
Downeast Wind, LLC is proposing to construct and operate Downeast Wind (Project), an approximately 126-megawatt (MW) grid-scale wind energy facility located in the town of Columbia, and the unorganized territories, T18 MD BPP and T24 MD BPP, in Washington County. The Project is located in an area identified as appropriate for grid-scale wind energy development (i.e., an expedited permitting area) as defined under 35-A M.R.S. § 3451 and is sited to maximize energy production while minimizing impacts to ecological resources.

The proposed facility consists of 30 wind turbines generating 126 MW of electricity. Seven (7) turbines are located in the town of Columbia along the northern edges of the blueberry barrens and to the north of Baseline Road. Six (6) turbines are sited in the Thousand Hills area of T18 MD BPP. Seven (7) turbines, including one spare turbine location, are arrayed in the northern portion of T18 MD BPP around Crebo Flat and Hawk Hill Rd. Thirteen (13) turbines, including two spare turbine locations, are sited in T24 MD BPP.

Downeast Wind contracted TRC Environmental, Inc. (TRC) and Stantec Inc. (Stantec) to conduct surveys in April and May of 2017 and 2019 to identify, delineate, map and characterize vernal pool (VP) and / or Critical Terrestrial Habitat (CTH) habitat within the Project Survey Area (Survey Area) following the guidance of the Maine Department of Inland Fisheries & Wildlife (MDIFW; see Section 4.0 Methodologies). The Survey Area includes all areas outlined in Figure 1 and encompasses areas that were being considered for development. The findings of these surveys were used during Project design to avoid and minimize adverse impacts to VPs. This report includes a general description of the Survey Area, the regulatory context of VPs in Maine, a description of the survey methodology, a summary of findings, and / or CTH, and a brief statement of conclusions.

Figure 1 is a general map of the Survey Area, while Attachment A includes resource maps, Attachment B includes data forms, and Attachment C includes a photographic log.

Figure 1. USGS Locus Map Overlaid with Proposed Downeast Wind Survey Area



2.0 REGULATORY BACKGROUND

A VP is a temporarily/seasonally flooded depression or wetland that provides the primary breeding habitat for VP indicator species, and a host of secondary faunal species. The Clean Water Act (CWA) regulates VPs in the State of Maine pursuant to Federal regulations 33 CFR 323. In addition, a subset of VPs that are of higher productivity may be designated as Significant Vernal Pools (SVPs) and are afforded protection under the Natural Resources Protection Act (NRPA; see Section 2.2).

2.1 CLEAN WATER ACT

In Maine, activities subject to USACE jurisdiction in waters of the United States, including VPs that meet the USACE definition, are regulated under the Maine General Permit. Section IX of the Maine General Permit provides the following definition of a VP:

"VPs are depressional wetland basins that typically go dry in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending upon landscape position and parent material(s). In most years, VPs support one or more of the following obligate indicator species: wood frogs, spotted salamanders, blue-spotted salamanders, and fairy shrimp. However, they should preclude sustainable populations of predatory fish" (USACE 2020). For impacts to vernal pools the USACE Maine General Permit states that "[a] PCN is required if a discharge of dredged or fill material is proposed within a vernal pool depression located within waters of the U.S.". A PCN is a Pre-Construction Notification.

2.2 STATE OF MAINE

Significant vernal pools are protected at the state level in accordance with Maine's NRPA (MRSA §§ 480-A to 480- FF) and the Site Location of Development Act (38 MRSA §§ 481-490). To be considered a SVP, the pool must be natural in origin and meet indicator species abundance levels and/or be used by a rare, threatened, or endangered (RTE) species as outlined in Chapter 335, Significant Wildlife Habitat (SWH), of the NRPA. For those pools that meet the SVP designation, the adjacent surrounding habitat within 250 feet of the extent of the pool is classified as CTH. Critical Terrestrial Habitat is also classified as SWH per Chapter 335 of the NRPA. Chapter 310, Wetlands and Waterbodies Protection, of NRPA states freshwater wetlands that contain SWH are also considered Wetlands of Special Significance (WOSS). Therefore, wetlands that contain SVPs are considered WOSS. The following criteria need to be met for a pool to be designated as an SVP:

1. Indicator species abundance levels of the following species:
    a. Fairy shrimp – presence in any life stage
    b. Blue-spotted salamanders – presence of 10 or more egg masses
    c. Spotted salamanders – presence of 20 or more egg masses

   d. Wood frogs – presence of 40 or more egg masses

2. Use of the pool by a listed RTE species that commonly requires a VP to complete a critical portion of its life-history also classifies the pool as an SVP and examples of these species include:
   a. Blanding's turtles;
   b. Spotted turtles;
   c. Ringed boghaunter dragonflies;
   d. Ribbon snakes;
   e. Wood turtles;
   f. Swamp darner dragonflies; and
   g. Comet darner dragonflies.

3. Identification period – egg masses must be counted just past the peak breeding period of pool-breeding amphibians.

3.0 GENERAL SITE DESCRIPTION

The Survey Area is approximately 6,267 acres and is situated across a landscape that has been developed primarily for commercial agriculture, specifically the production of blueberries, with adjacent second-growth and early successional forests (Figure 1). Within the Survey Area, approximately 49% is field/non-forested and 51% is forested.

The Project is located within the Pleasant River-Frontal Atlantic Ocean, Lower Machias River, and Narragaugus River-Frontal Atlantic Ocean watersheds. The water draining across the landscape and through the Survey Area generally flows south to southeast into the Pleasant River and Atlantic Ocean. Topgraphy across the Survey Area varies from flat, gentle slopes to moderate and steeper slopes. Wetlands and streams have been delineated in the Survey Area and are included in a separate Wetlands and Waterbodies Delineation Report.

Forest cover in the Survey Area features species typical of spruce-fir and northern hardwood forests. The dominant tree and sapling species included red spruce (*Picea rubens*), balsam fir (*Abies balsamea*), Eastern white pine (*Pinus strobus*), red oak (*Quercus rubra*), red maple (*Acer rubrum*), American beech (*Fagus grandifolia*), aspen species (*Populus spp.*), and birch species (*Betula spp.*). Common shrub species included wild raisin (*Viburnum nudum*), blackberry (*Rubus allegheniensis*), and raspberry (*Rubus idaeus*). Common herbaceous species included lowbush blueberry (*Vaccinium angustifolium*), Eastern teaberry (*Gaultheria procumbens*), bunchberry (*Cornus canadensis*), bracken fern (*Pteridium aquilinum*), and wild sarsaparilla (*Aralia nudicaulis*).

4.0 METHODOLOGIES

Prior to field investigations, a desktop review was conducted in order to gain a preliminary understanding of the landscape and if previously mapped VPs might be encountered during field surveys. According to State of Maine Office of Geographic Information Systems' (MEGIS) publicly available data, no previously mapped SVPs occurred in the Survey Area prior to field surveys (MEGIS, 2021).

Vernal pool surveys for the Project were completed in April and May of 2017 and 2019. Surveyed and delineated VPs are depicted on resource mapping in Attachment A. A systematic survey for VPs was conducted between April 24th and 27th, 2017 with second visits performed on May 10th and 11th, 2017. As the Project area expanded, additional VP surveys were conducted over the Survey Area between April 29th and May 3rd, 2019 and second visits were performed between May 21st and 24th, 2019. Vernal pool breeding season surveys were conducted following the MDIFW's *Recommended Periods for Vernal Pool Egg Mass Survey by Geographic Region*:

"Optimal times for counting egg masses of pool-breeding amphibians vary according to geography, elevation and weather. Egg mass counts are generally best conducted just past the peak breeding period. For wood frogs, this occurs approximately 1 to 2 weeks after full chorus. Salamanders have a more extended breeding period and their eggs do not hatch as quickly as wood frogs. Therefore, surveys to count salamander eggs should be conducted slightly later in the breeding season, generally 2-3 weeks following wood frog egg counts."

During surveys, each potential VP was surveyed for amphibian breeding activity, including the presence of egg masses; other VP-dependent species were noted if observed. Surveys were conducted by visual search and egg masses for each indicator species were counted and recorded; the presence of other life stages were also noted. In addition, shallow basins of anthropogenic or natural origin were identified during surveys and the physical and biological characteristics of the pool were recorded, including presence/absence of a permanent flowing inlet or outlet and the presence/absence of fish.

Once identified, potential VP boundaries were geo-located using a sub-meter Global Navigation Satellite Systems (GNSS) receiver connected to the ESRI Collector application on Android tablets. Potential VP boundaries were flagged in the field. Data was collected in real time, and then converted to geographic information system (GIS) shapefiles at a later time for depiction on resource maps (Attachment A).

A Maine State Vernal Pool Assessment Form (Attachment B) was filled out for each potential VP, and representative photographs were collected (Attachment C). Review of field data determined whether the pool was a SVP, VP, or should be removed from the data set based on findings. If the potential VP did not exhibit use by indicator species after two visits during the breeding season, then the pool was determined to not be a VP and was removed from the data set. Subsequently, additional potential VPs were added to the data set during wetland and waterbody surveys. Potential VP identified outside of the optimal survey window (as identified by MDIFW) are considered potentially significant vernal pools (PSVPs) as

recommended by MDIFW until a seasonally valid survey is conducted and the true value is determined. During the surveys, VP boundaries were flagged in the field and were geo-located using GNSS receivers.

5.0 RESULTS

The results of VP surveys are provided below in Table 1. Sixty-four (64) VP and potential VPs were documented. Subsequently, fifty-four (54) were identified as VP in the field and ten (10) were considered potential due to surveys being completed outside of the survey season. Of the 54 confirmed VPs, twenty-two (22) within the Survey Area met the criteria to be considered SVPs. Nineteen (19) of these SVPs and seven (7) PSVPs are within wetlands and are WOSS under the NRPA. There were no VP-dependent RTE or federally listed Endangered Species Act species identified in the field.

6.0 DISCUSSION AND CONCLUSIONS

For the purposes of this delineation, VPs and / or SVPs were delineated and are assumed as either jurisdictional under the CWA and / or NRPA. Officially determining and verifying the locations and boundaries of VPs, along with their jurisdictional status under Section 404 of the CWA, can only be done by the USACE. Officially determining if a pool is a SVP is done by MDIFW. The delineation of VPs and SVPs presented in this report is based on TRC and Stantec's professional training, judgment, and experience, along with guidance from various agencies and regulatory sources, and applicable State and USACE methodologies (USACE 1987, 2012).

VPs and / or SVPs were delineated to inform the Project design such that potential impacts to these protected features are avoided or minimized. Based on the extent and location of VPs and / or SVPs within the Survey Area, some level of impact to these jurisdictional CWA and / or NRPA features will be required to construct the proposed Project.

Section 404 of the CWA authorizes the USACE to regulate the discharge of dredged or fill material into waters of the US. Due to impacts to VPs impacted by constructing the proposed Project, a CWA Section 404 permit administered by the USACE will be required.

The twenty-two (22) documented SVPs are considered SWH and require a 250-foot CTH buffer. The remaining thirty-two (32) VPs are not SVPs and do not require a 250-foot CTH buffer. The Project is currently assuming a 250-ft buffer for the ten (10) PSVPs identified outside of the survey season per MDIFW recommendations (2019). These areas may be surveyed during the VP season of 2021 SVP status.

In Maine, impacts to SVPs will generally require the issuance of a NRPA permit. The Project design has avoided and minimized impacts to SVPs to the greatest extent practicable; however, some impacts will likely be unavoidable based on the extent and location of SVPs and associated CTHs within the Survey Area. One SVP depression is found directly abutting an existing road that will be utilized for Project access. This pool is considered a "natural-modified" pool as it has been previously impacted by roadside ditching.

Proposed Project impacts will be limited to the area that was previously ditched. Project specific SVP impacts will be detailed in the Maine NRPA permit application.

Table 1. Vernal Pools Delineated within the Survey Area

Vernal Pool ID	Descriptor	Hydrology	Identification Period		Indicator Species[1]		State Designation	Potentially Jurisdictional CWA VP
			1st Survey Date	2nd Survey Date	1st Visit	2nd Visit		
V-DC-190430-02	Natural-Modified	Semi-permanent	4/30/2019	n/a – SVP	101 wood frog egg masses	n/a	SVP – WOSS (W-CWF-22)	Yes
V-DC-190502-01	Natural	Semi-permanent	5/2/2019	n/a – SVP	21 spotted salamander egg masses	n/a	SVP – WOSS (W-CWF-28)	Yes
V-DC-190503-01	Natural	Seasonal	5/3/2019	5/23/2019	5 wood frog egg masses 1 spotted salamander egg mass	5,000 wood frog tadpoles	Non-SVP	Yes
V-DC-190503-02	Natural	Seasonal	5/3/2019	5/23/2019	19 wood frog egg masses 7 spotted salamander egg masses	13 wood frog egg masses 200 wood frog tadpoles 7 spotted salamander egg masses	Non-SVP	Yes
V-DC-190523-01	Natural	Semi-permanent	5/2/2019	5/23/2019	0 egg masses	5 spotted salamander egg masses	Non-SVP	Yes
V-JB-190503-01	Natural	Semi-permanent	5/3/2019	5/24/2019	8 wood frog egg masses 8 spotted salamander egg masses	3 spotted salamander egg masses	Non-SVP	Yes
V-JB-190503-02	Natural	Semi-permanent	5/3/2019	5/23/2019	36 wood frog egg masses 8 spotted salamander egg masses	1,000 wood frog tadpoles 9 spotted salamander egg masses	SVP – WOSS (W-CWF-56)	Yes
V-JB-190503-03	Natural	Semi-permanent	5/3/2019	5/24/2019	2 spotted salamander egg masses	0 egg masses	Non-SVP	Yes
V-JR-190502-01	Natural	Seasonal	5/2/2019	5/23/2019	18 spotted salamander egg masses	13 spotted salamander egg masses	Non-SVP	Yes
V-JR-190503-01	Natural	Semi-permanent	5/3/2019	n/a – SVP	102 wood frog egg masses 14 spotted salamander egg masses 14 spotted salamander tadpoles	n/a	SVP – WOSS (W-CWF-54)	Yes
V-JR-190523-02	Natural	Seasonal	5/3/2019	5/24/2019	0 egg masses	500 wood frog tadpoles	Non-SVP	Yes
V-JR-190524-03	Natural	Seasonal	5/3/2019	5/24/2019	0 egg masses	2,000 spotted salamander larvae	Non-SVP	Yes
V-RJ-190430-06	Natural	Semi-permanent	4/30/2019	5/24/2019	0 egg masses	0 egg masses	Non-SVP	Yes
V-RJ-190430-08	Natural-Modified	Semi-permanent	4/30/2019	n/a – SVP	4 wood frog egg masses 31 spotted salamander egg masses	n/a	SVP	Yes
V-RJ-190501-01	Natural	Semi-permanent	5/1/2019	5/22/2019	1 wood frog egg mass 5 spotted salamander egg masses	3 spotted salamander egg masses	Non-SVP	Yes
V-RJ-190501-02	Natural-Modified	Semi-permanent	5/1/2019	5/22/2019	5 wood frog egg masses 7 spotted salamander egg masses	0 egg masses	Non-SVP	Yes
V-RJ-190501-03	Natural	Semi-permanent	5/1/2019	5/22/2019	1 spotted salamander egg masse	0 egg masses	Non-SVP	Yes
V-RJ-190501-04	Natural	Semi-permanent	5/1/2019	5/22/2019	15 wood frog egg masses 5 spotted salamander egg masses	1 wood frog egg mass 6 spotted salamander egg masses	Non-SVP	Yes
V-RJ-190501-05	Natural	Semi-permanent	5/1/2019	5/22/2019	4 spotted salamander egg masses	2 spotted salamander egg masses	Non-SVP	Yes
V-RJ-190501-06	Natural	Semi-permanent	5/1/2019	5/22/2019	10 spotted salamander egg masses	4 spotted salamander egg masses	Non-SVP	Yes
V-RJ-190502-01	Natural-Modified	Semi-permanent	5/2/2019	5/22/2019	17 wood frog egg masses 3 spotted salamander egg masses 1 blue spotted salamander egg mass	4 spotted salamander egg masses 3 blue spotted salamander egg masses	Non-SVP	Yes
V-RP-190430-02	Natural	Seasonal	4/30/2019	5/22/2019	0 egg masses	200 tadpoles	Non-SVP	Yes
V-RP-190430-08	Natural-Modified	Semi-permanent	4/30/2019	5/22/2019	3 spotted salamander egg masses	1 spotted salamander egg mass 100 spotted salamander larvae	Non-SVP	Yes
V-RP-190502-01	Natural	Seasonal	5/2/2019	5/23/2019	7 spotted salamander egg masses	1 spotted salamander egg mass	Non-SVP	Yes
V-RP-190503-02	Natural	Seasonal	5/3/2019	5/24/2019	3 spotted salamander egg masses	0 egg masses	Non-SVP	Yes
V-RP-190503-03	Natural	Semi-permanent	5/3/2019	5/24/2019	7 spotted salamander egg masses	0 egg masses	Non-SVP	Yes
V-RP-190503-04	Natural	Semi-permanent	5/3/2019	5/24/2019	62 wood frog egg masses 40 spotted salamander egg masses	0 egg masses	SVP	Yes
15cf	Natural	Ephemeral	4/25/2017	5/10/2017	2 wood frog egg masses	25 spotted salamander egg masses	SVP – WOSS (02CFR)	Yes
13jl	Natural	Ephemeral	4/24/2017	5/10/2017	19 spotted salamander egg masses	22 spotted salamander egg masses	SVP – WOSS (02JLI)	Yes

[1] Other indicator species including fairy shrimp and RTE species listed in Chapter 335.9.B. were not observed during these surveys.

Vernal Pool ID	Descriptor	Hydrology	Identification Period		Indicator Species[1]		State Designation	Potentially Jurisdictional CWA VP
			1st Survey Date	2nd Survey Date	1st Visit	2nd Visit		
14jl	Natural	Semi-permanent	4/25/2017	5/10/2017	7 spotted salamander egg masses	13 spotted salamander egg masses	Non-SVP	Yes
18jl	Natural	Ephemeral	4/25/2017	5/10/2017	8 spotted salamander egg masses	1 wood frog egg mass 21 spotted salamander egg masses	SVP – WOSS (02JLL)	Yes
19jl	Natural	Ephemeral	4/25/2017	5/10/2017	0 egg masses	34 wood frog egg masses 20 spotted salamander egg masses	SVP – WOSS (W-MJR-38)	Yes
20jl	Natural	Ephemeral	4/25/2017	5/10/2017	3 spotted salamander egg masses	2 spotted salamander egg masses	Non-SVP	Yes
21jl	Natural	Ephemeral	4/26/2017	5/10/2017	10 wood frog egg masses	7 wood frog egg masses	Non-SVP	Yes
22tt	Natural	Ephemeral	4/24/2017	5/10/2017	5 wood frog egg masses	14 wood frog egg masses 28 spotted salamander egg masses	SVP – WOSS (01TTG)	Yes
23tt	Natural-Modified	Ephemeral	4/24/2017	n/a – SVP	43 wood frog egg masses 23 spotted salamander egg masses 30 blue spotted salamander egg masses	n/a	SVP – WOSS (01TTT)	Yes
24tt	Natural	Ephemeral	4/24/2017	n/a – SVP	65 wood frog egg masses	n/a	SVP – WOSS (01TTU)	Yes
25tt	Natural-Modified	Semi-permanent	4/25/2017	n/a – SVP	1 wood frog egg mass 21 spotted salamander egg masses	n/a	SVP – WOSS (01JLL)	Yes
27tt	Natural	Semi-permanent	4/25/2017	5/10/2017	5 spotted salamander egg masses	10 spotted salamander egg masses	Non-SVP	Yes
32tt	Natural-Modified	Ephemeral	4/25/2017	5/11/2017	3 spotted salamander egg masses	4 spotted salamander egg masses	Non-SVP	Yes
45tt	Natural	Ephemeral	4/25/2017	5/11/2017	15 wood frog egg masses 1 spotted salamander egg mass 1 blue spotted salamander egg mass	63 spotted salamander egg masses	SVP – WOSS (02CFQ/06TTJ)	Yes
46tt	Natural	Ephemeral	4/25/2017	n/a – SVP	32 spotted salamander egg masses 6 spotted salamander egg masses	n/a	SVP – WOSS (01JLB-02CFH)	Yes
47tt	Natural	Semi-permanent	4/25/2017	5/10/2017	7 spotted salamander egg masses	21 spotted salamander egg masses	SVP – WOSS (01TTF)	Yes
48tt	Natural	Semi-permanent	4/25/2017	5/10/2017	3 spotted salamander egg masses	3 spotted salamander egg masses	Non-SVP	Yes
49tt	Natural	Ephemeral	4/25/2017	n/a – SVP	134 wood frog egg masses 195 spotted salamander egg masses	n/a	SVP – WOSS (06TTG)	Yes
50tt	Natural	Ephemeral	4/25/2017	5/10/2017	2 spotted salamander egg masses	10 spotted salamander egg masses	Non-SVP	Yes
51tt	Natural	Ephemeral	4/25/2017	n/a – SVP	111 wood frog egg masses 2 spotted salamander egg masses	n/a	SVP – WOSS (01CFP)	Yes
52tt	Natural	Ephemeral	4/25/2017	5/10/2017	18 wood frog egg masses	0 egg masses	Non-SVP	Yes
53tt	Natural	Ephemeral	4/26/2017	n/a – SVP	152 wood frog egg masses 17 spotted salamander egg masses 92 blue spotted salamander egg masses	n/a	SVP	Yes
55tt	Natural	Ephemeral	4/25/2017	5/11/2017	0 egg masses	4 spotted salamander egg masses	Non-SVP	Yes
58tt	Natural	Ephemeral	6/28/2017	n/a – outside season	57 egg masses	n/a	SVP – WOSS (01TTS/02CFJ/01JLC)	Yes
59tt	Natural	Ephemeral	6/28/2017	n/a – outside season	8 spotted salamander egg masses	n/a	Non-SVP	Yes
60tt	Natural	Ephemeral	6/28/2017	n/a – SVP	35 spotted salamander egg masses	n/a	SVP – WOSS (04TTS/06TTH)	Yes
61tt	Natural	Ephemeral	6/28/2017	n/a – outside season	n/a – outside season	n/a – outside season	Non-SVP	Yes
PSVP-DBV-01	PSVP	n/a – outside season	12/09/2020	n/a – outside season	n/a – outside season	n/a – outside season	PSVP	Indeterminate
PSVP-DBV-02	PSVP	n/a – outside season	12/09/2020	n/a – outside season	n/a – outside season	n/a – outside season	PSVP	Indeterminate
PSVP-MJT-001	PSVP	n/a – outside season	11/12/2020	n/a – outside season	n/a – outside season	n/a – outside season	PSVP – WOSS (W-MJT-8)	Indeterminate
PSVP-MJT-01	PSVP	n/a – outside season	12/09/2020	n/a – outside season	n/a – outside season	n/a – outside season	PSVP – WOSS (W-SLG-8)	Indeterminate
PSVP-MPA-01	PSVP	n/a – outside season	10/08/2020	n/a – outside season	n/a – outside season	n/a – outside season	PSVP – WOSS (W-MJR-12)	Indeterminate
PSVP-SLG-02	PSVP	n/a – outside season	11/06/2020	n/a – outside season	n/a – outside season	n/a – outside season	PSVP	Indeterminate
PSVP-SLG-03	PSVP	n/a – outside season	11/06/2020	n/a – outside season	n/a – outside season	n/a – outside season	PSVP – WOSS (W-CWF-58)	Indeterminate
PSVP-SLG-04	PSVP	n/a – outside season	11/10/2020	n/a – outside season	n/a – outside season	n/a – outside season	PSVP – WOSS (W-SLG-6)	Indeterminate

Vernal Pool ID	Descriptor	Hydrology	Identification Period		Indicator Species[1]		State Designation	Potentially Jurisdictional CWA VP
			1st Survey Date	2nd Survey Date	1st Visit	2nd Visit		
PSVP-SLG-05	PSVP	n/a – outside season	11/10/2020	n/a – outside season	n/a – outside season	n/a – outside season	PSVP - WOSS (W-SLG-7)	Indeterminate
PSVP-SLG-08	PSVP	n/a – outside season	11/11/2020	n/a – outside season	n/a – outside season	n/a – outside season	PSVP - WOSS (W-SLG-8)	Indeterminate

7.0 REFERENCES

Calhoun, A.J.K. and M.W. Klemens. 2002. Best Development Practices: Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

Cowardin, L.M., V. Carter, F. Golet and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service.

Maine Association of Wetland Scientists Vernal Pool Technical Committee. 2014. Vernal Pool Survey Protocol.

Maine Department of Inland Fisheries and Wildlife (MDIFW). Response to information request as attachment to email from Bob Stratton provided on June 28, 2019.

Maine Department of Inland Fisheries and Wildlife (MDIFW). Recommended Period for Vernal Pool Egg Mass Survey by Geographic Region. Accessed on January 20, 2021. Web: https://www.maine.gov/dep/land/nrpa/vernalpools/timing.pdf.

Maine Office of GIS (MEGIS). Significant Vernal Pools. Accessed on January 20, 2021. Web: https://www.maine.gov/geolib/catalog.html.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/.

United States Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. Waterways Experiment Station, Vicksburg MS.

USACE. 1995. The Highway Methodology Workbook Supplement. Wetland Functions and Values: A Descriptive Approach. U.S. Army Corps of Engineers, New England Division. NENEP-360-1-30a. 32 pp.

USACE. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USACE. 2016. New England District Compensatory Mitigation Guidance. US Army Corps of Engineers, New England District, Regulatory Division. 9-7-16.

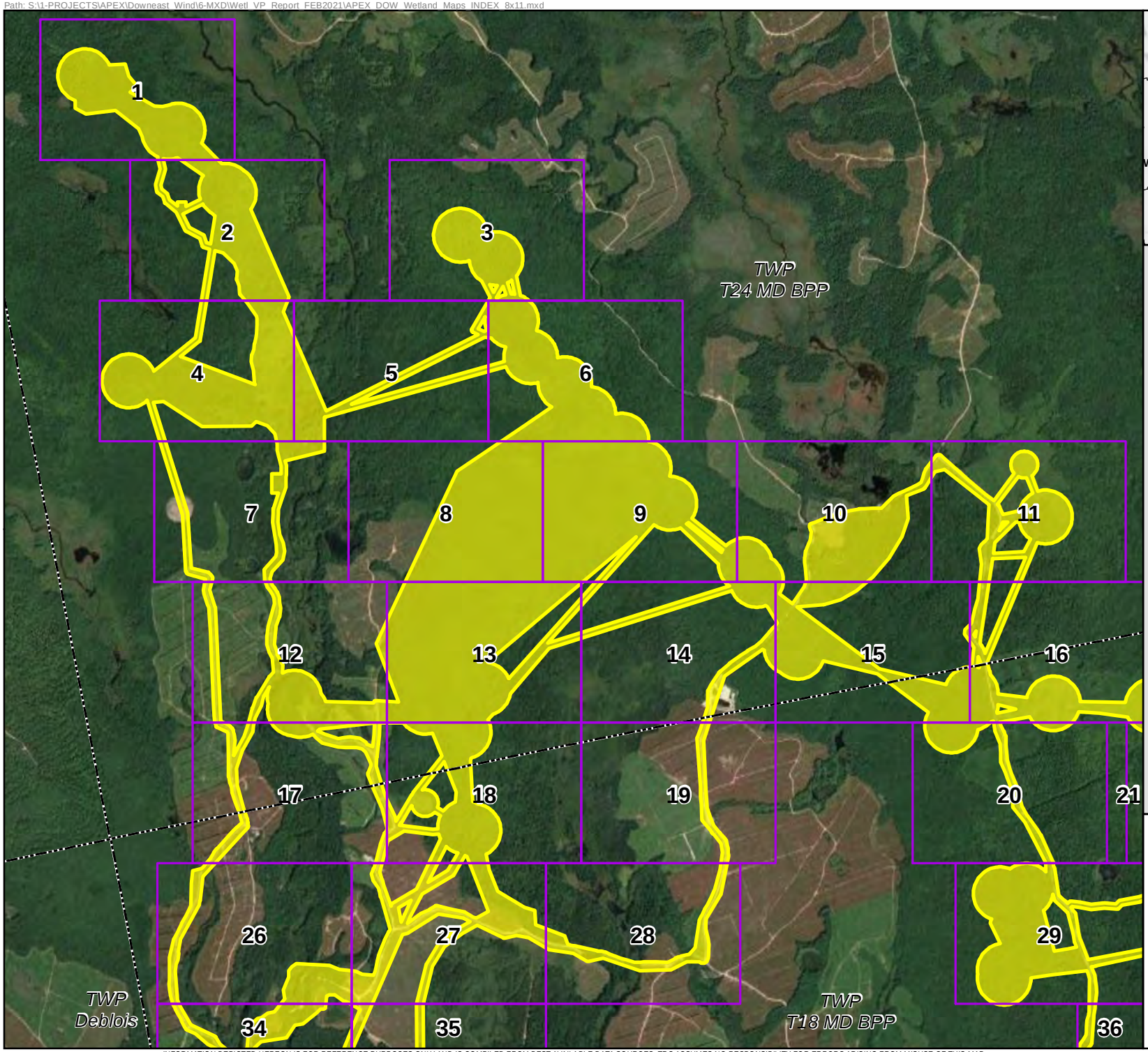
USACE. 2020. Department of the Army General Permits for the State of Maine. US Army Corps of Engineers, New England District. 10-14-2020.

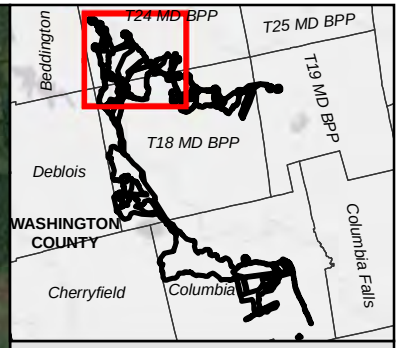
United States Department of Agriculture, Natural Resources Conservation Service. 2010. Field Indicators of Hydric Soils in the United States, Version 7.0. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

Attachment A

Resource Mapset – Delineated Vernal Pools

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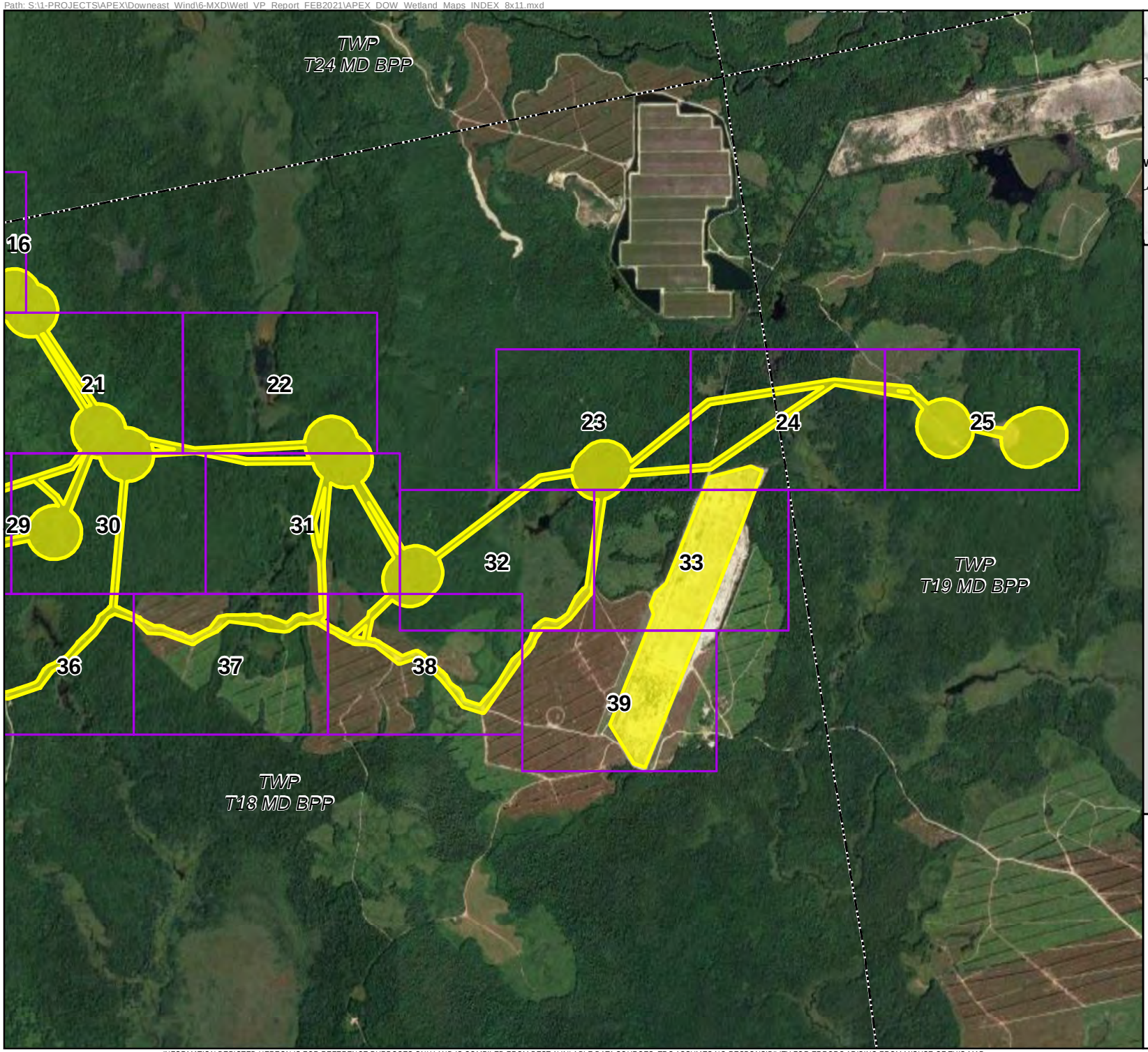
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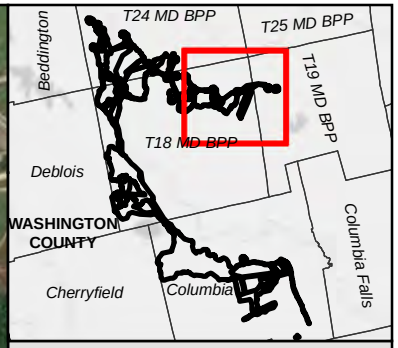
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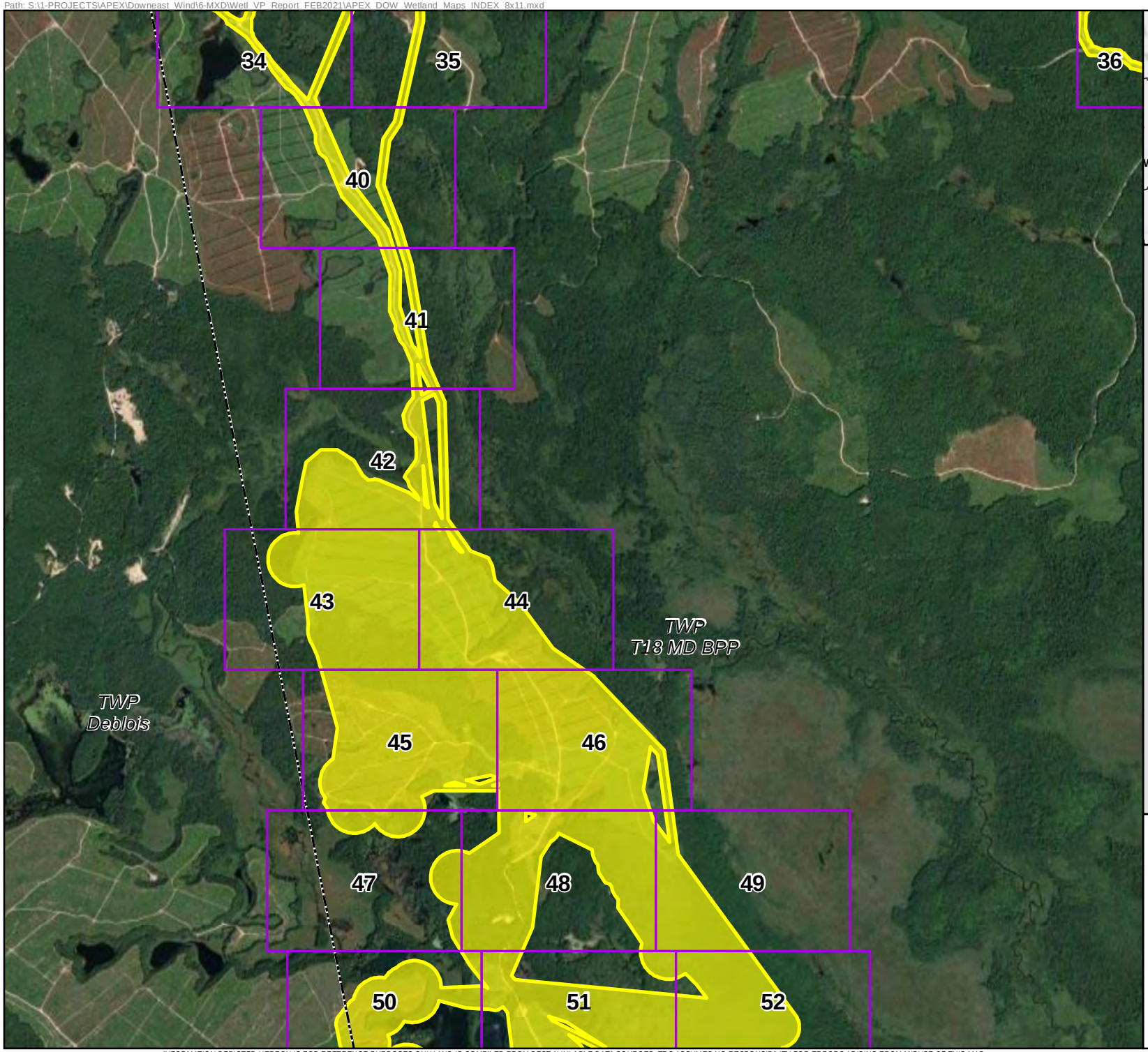
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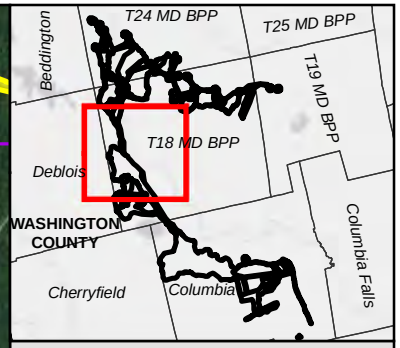
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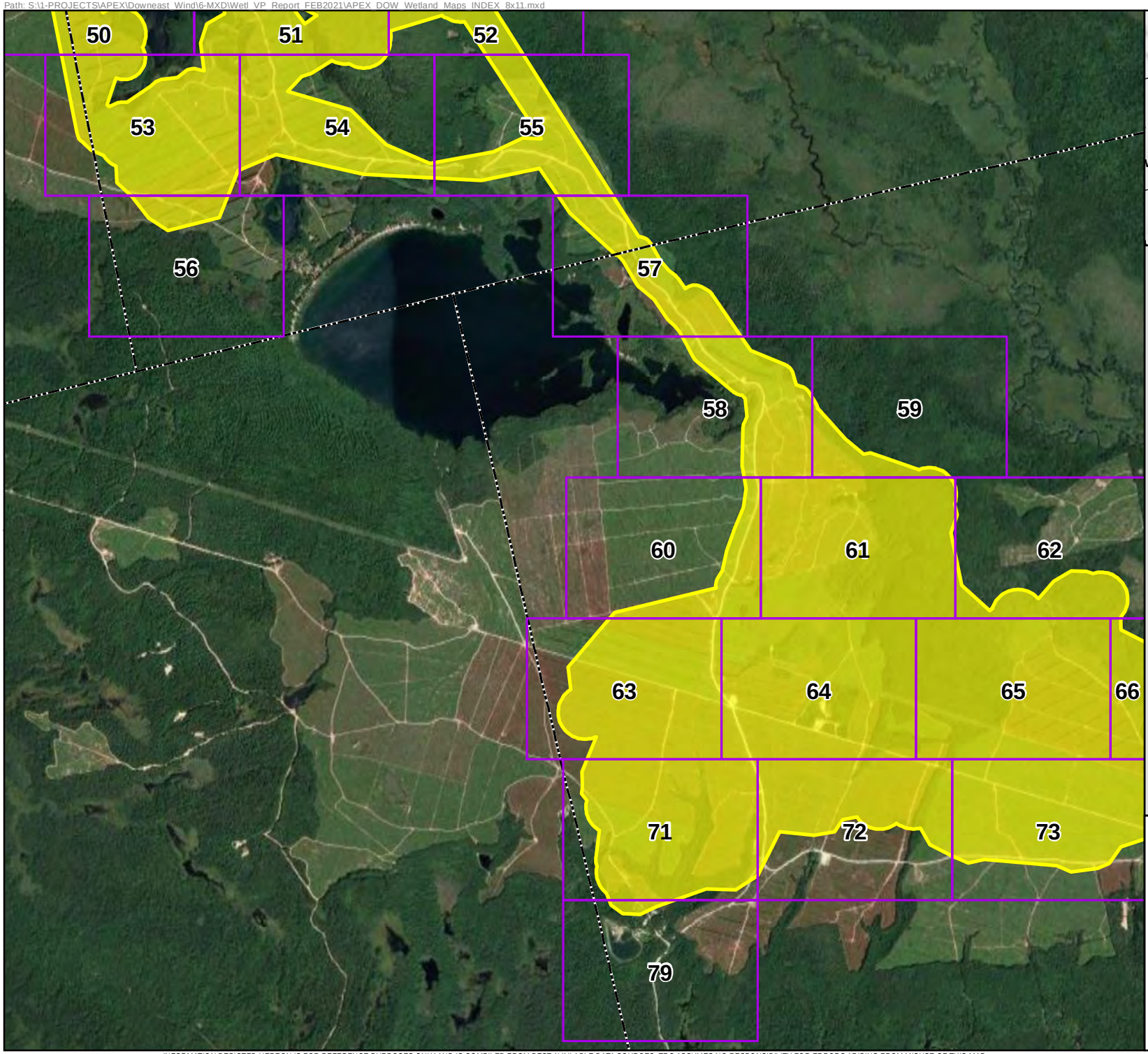
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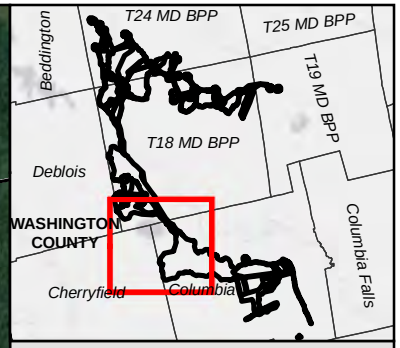
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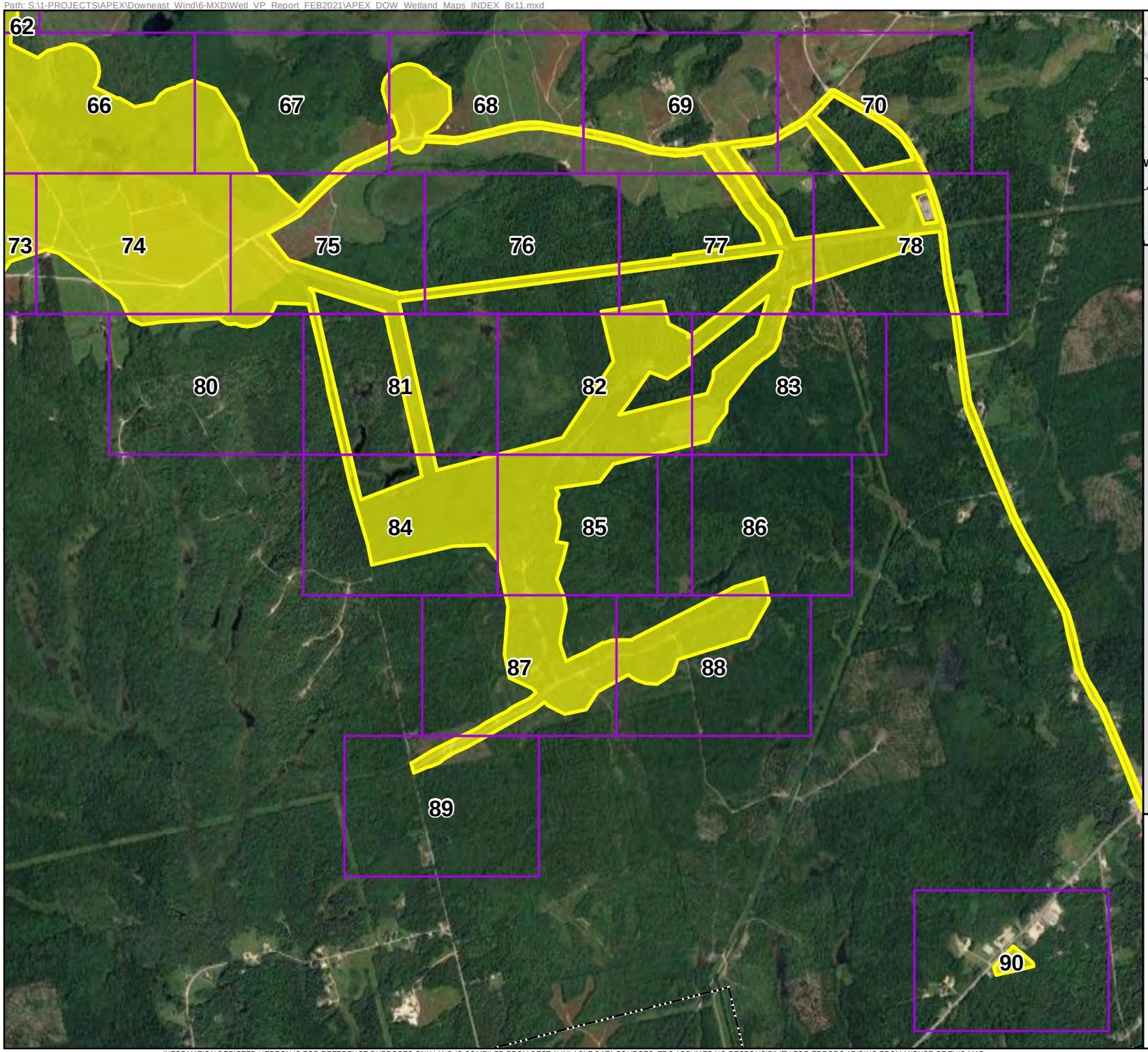
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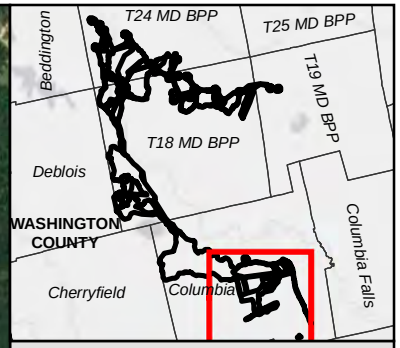
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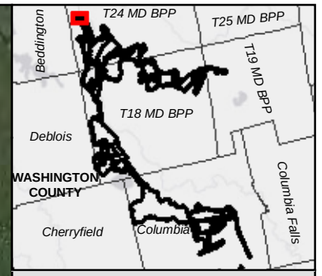
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- Collection Corridor
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Surface Water
- PFO Wetland
- PSS Wetland
- PEM Wetland
- PUB Wetland
- Significant Vernal Pool
- Potential Significant Vernal Pool
- Vernal Pool

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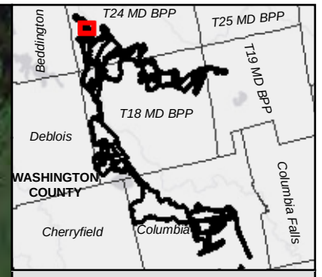
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W-GAR-03
V-JR-190503-01
W-CWF-55
W-GAR-02



Survey Area
Turbine Location
Facility and Access Way
Collection Corridor
Perennial Stream
Intermittent Stream
Ephemeral Stream
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PSS Wetland
PEM Wetland
PUB Wetland
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Vernal Pool

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Downeast Wind
Washington County, Maine

Wetlands

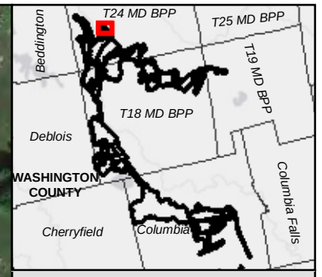
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Washington County, Maine

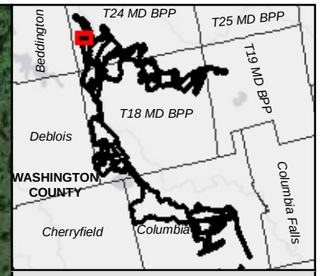
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- Significant Vernal Pool
- Potential Significant Vernal Pool
- Vernal Pool

N

0 250
Feet

APEX
Downeast Wind
Washington County, Maine

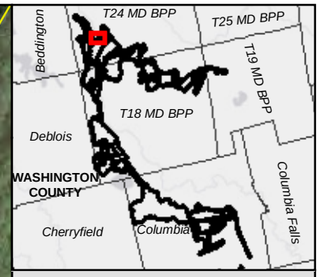
Wetlands

TRC
14 Gabriel Drive
Augusta, ME 04330

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2/16/2021





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N

0 250
Feet

APEX
Downeast Wind
Washington County, Maine

Wetlands

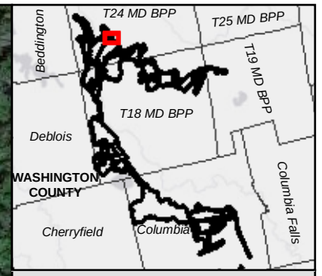
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APEX
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Washington County, Maine

Wetlands

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2/16/2021

W-THE-19

W-THE-19

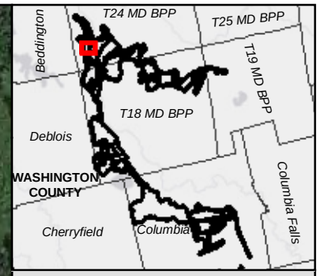
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W-CWF-58

W-CWF-59

V-JB-190503-03

W-CWF-60



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Washington County, Maine

Wetlands

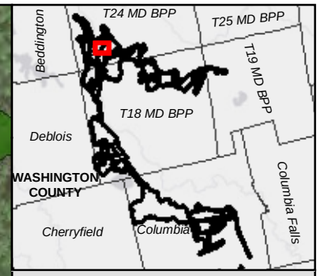
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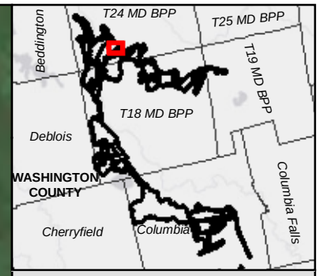
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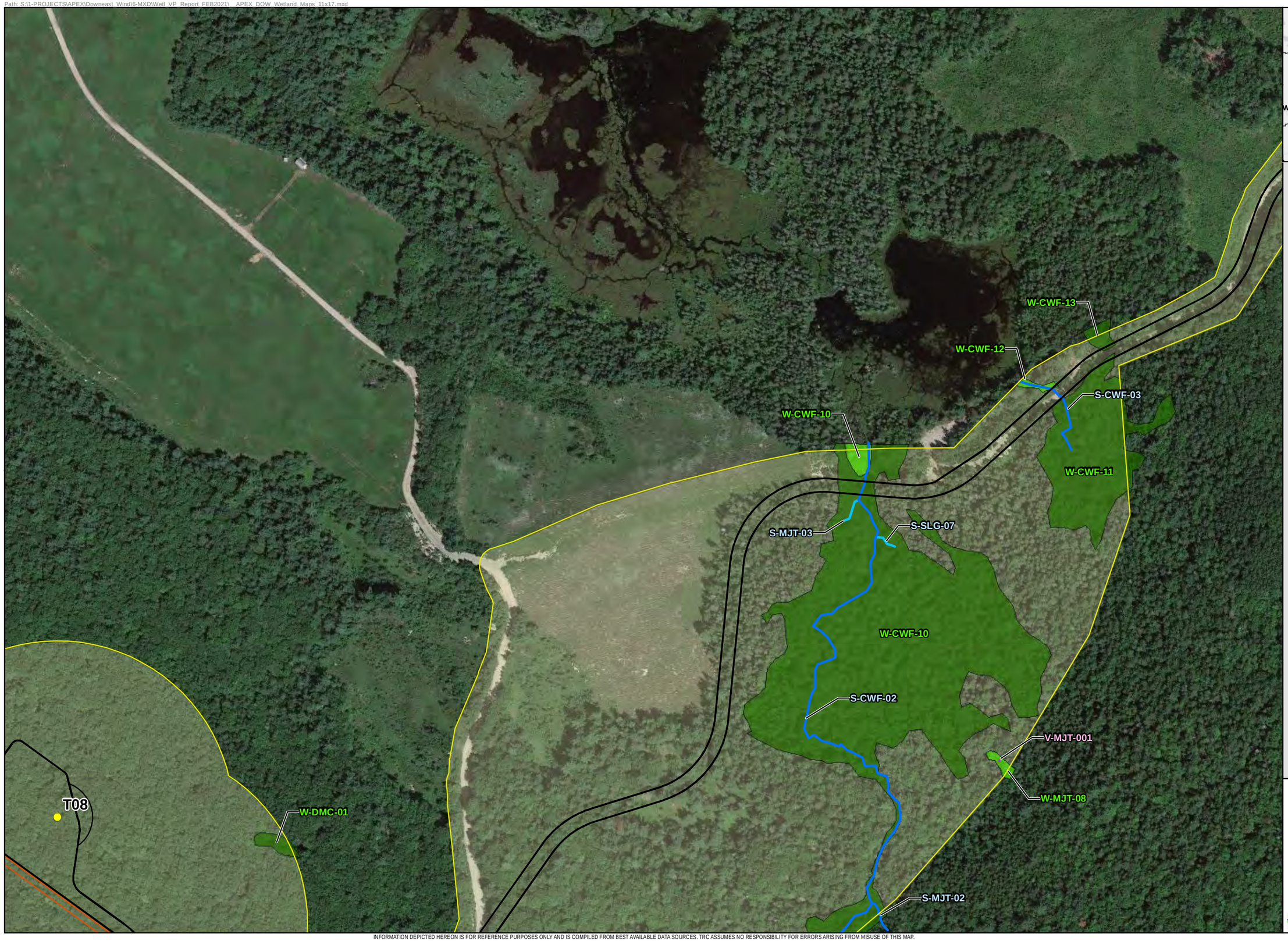
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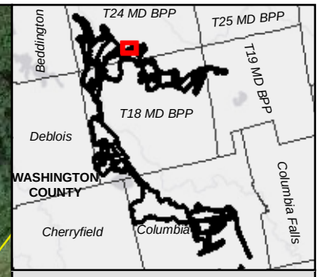
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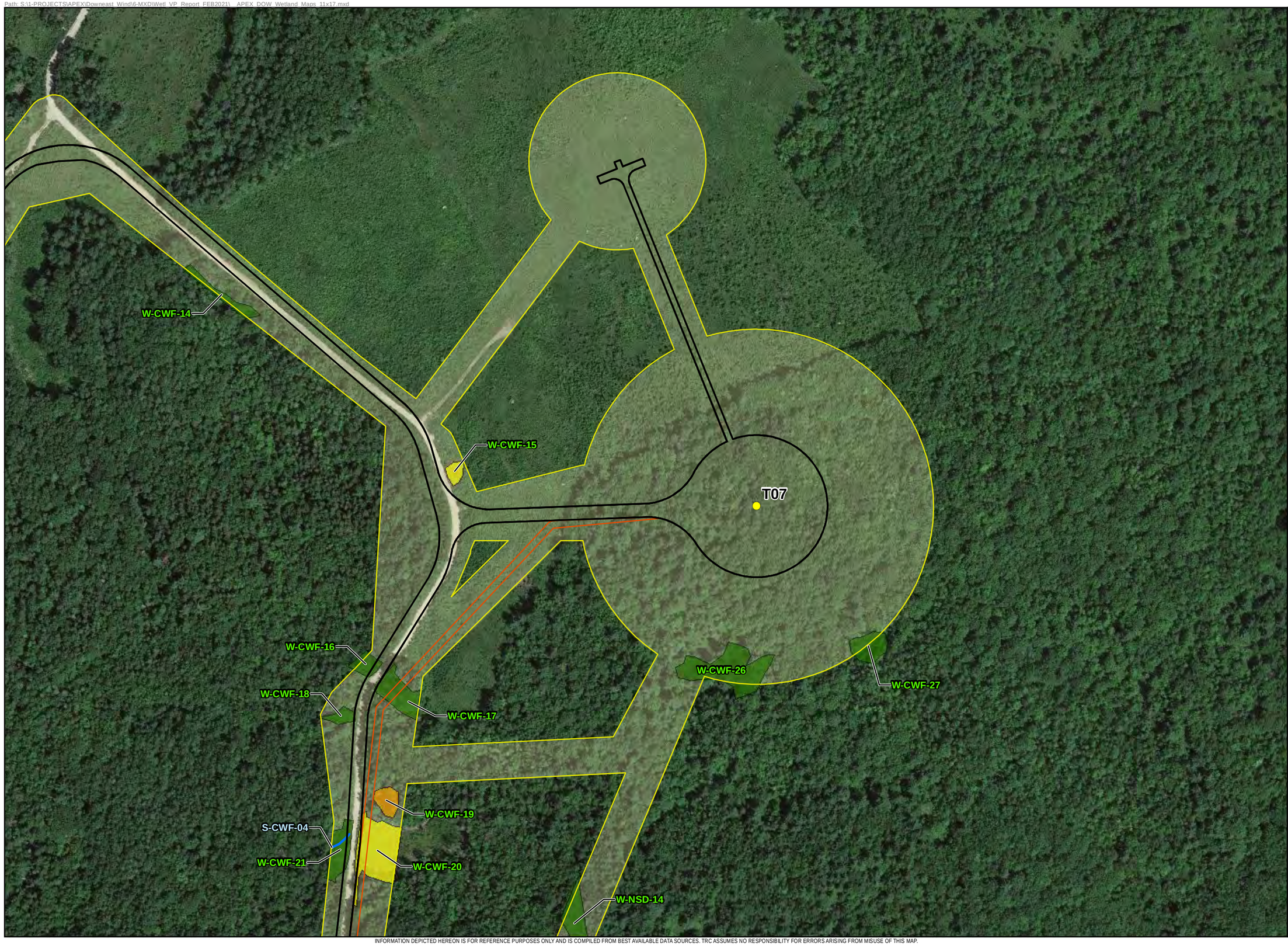
Washington County, Maine

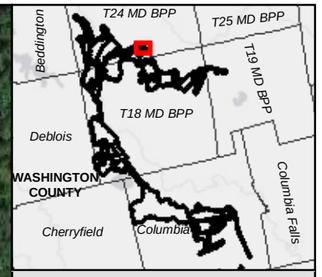
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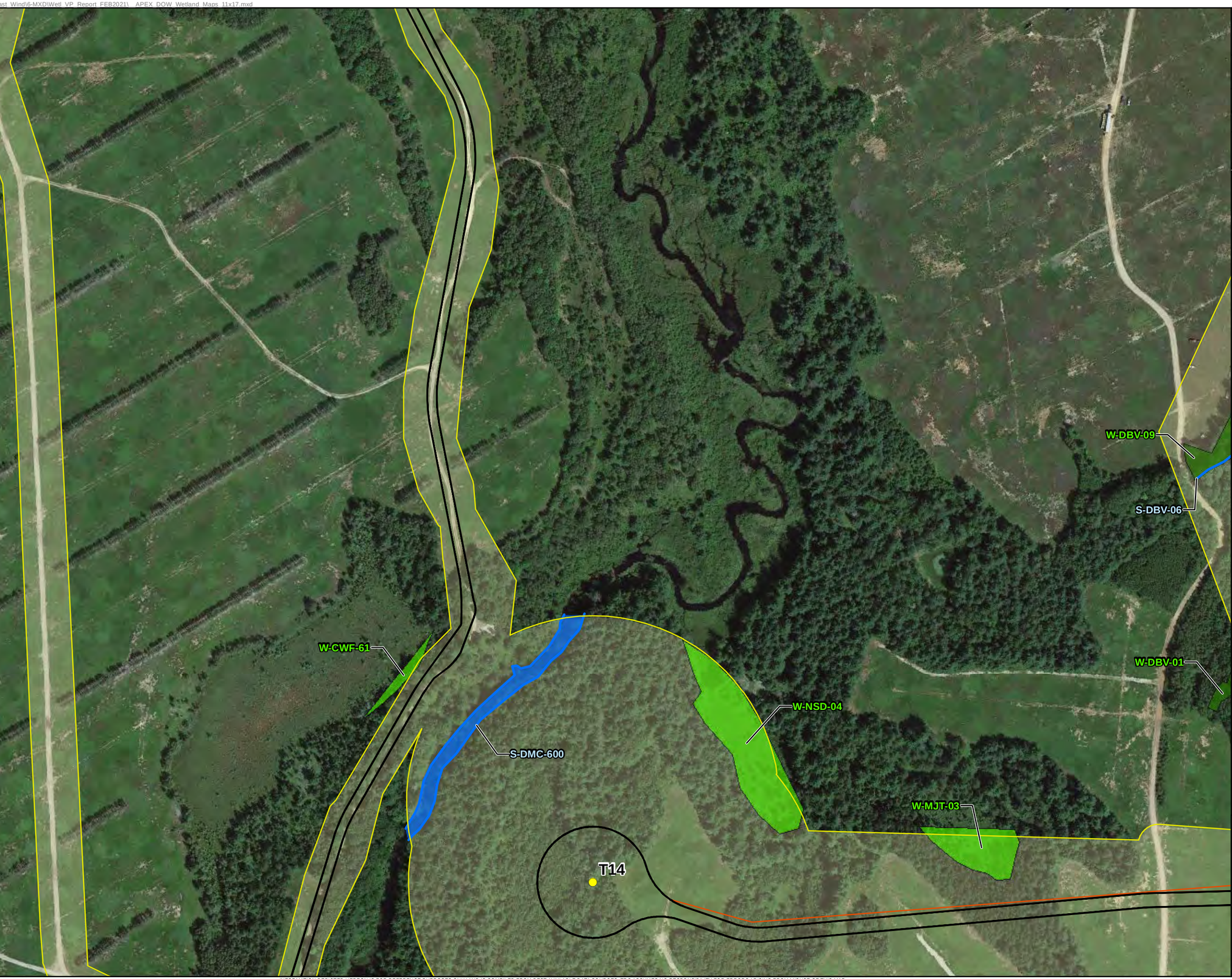
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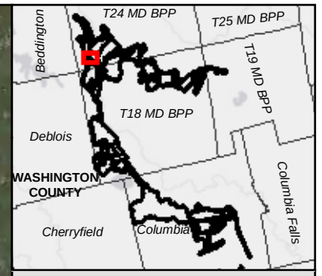
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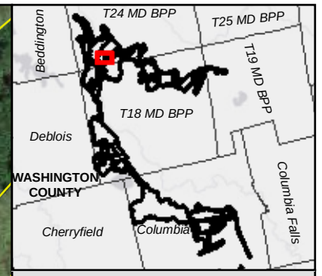
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2/16/2021

W-DBV-06
W-DBV-09
W-DBV-11
W-DBV-02
S-NSD-04
W-MJT-07
W-MJT-04
S-MJT-01
W-CWF-31
W-CWF-35
W-CWF-36
W-MJT-04
W-CWF-30
W-DMC-60
T13
W-DMC-60
W-CWF-29



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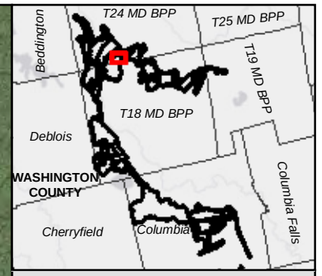
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N

0 250

Feet

APEX
Downeast Wind

Washington County, Maine

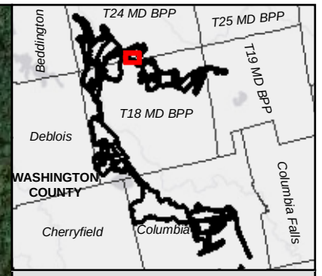
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0 250
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APEX
Downeast Wind
Washington County, Maine

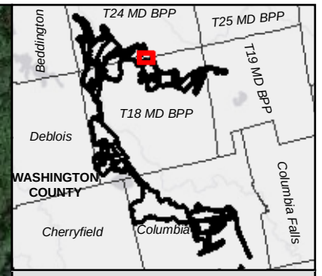
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2/16/2021

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W-NSD-13
V-DC-190430-02
W-CWF-23
W-NSD-12
S-CWF-05
W-DC-01
W-DC-05
W-DC-02
W-DC-04
W-DC-03
W-NSD-11
W-CWF-24
W-CWF-25
W-MJR-20
W-NSD-15
W-MJR-23
T10a
T11
T12
W-MJR-18
W-DMC-202
W-CWF-02
W-MJR-19
W-MJR-21
W-MJR-24



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APEX
Downeast Wind
Washington County, Maine

Wetlands

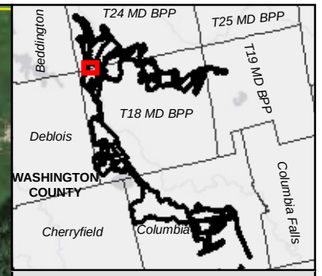
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APEX
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Washington County, Maine

Wetlands

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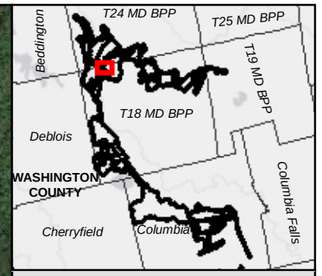
2/16/2021

V-DC-190502-01

W-CWF-28

V-JR-190502-01

T15



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APEX
Downeast Wind

Washington County, Maine

Wetlands

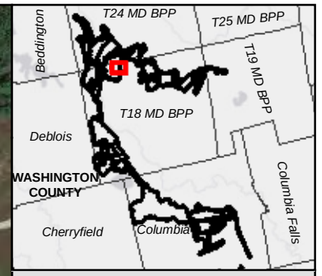
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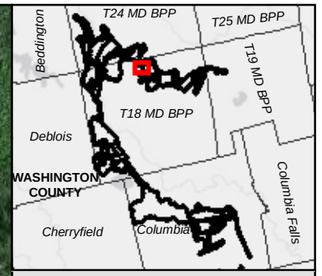
2/16/2021

W-CWF-03

W-CWF-07

W-MJR-22

V-RJ-190430-08



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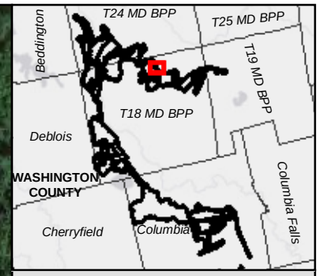
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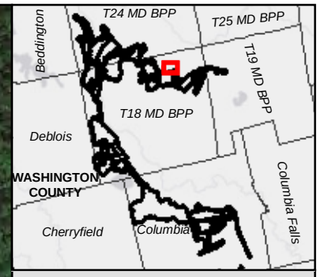
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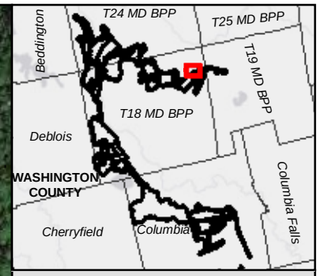
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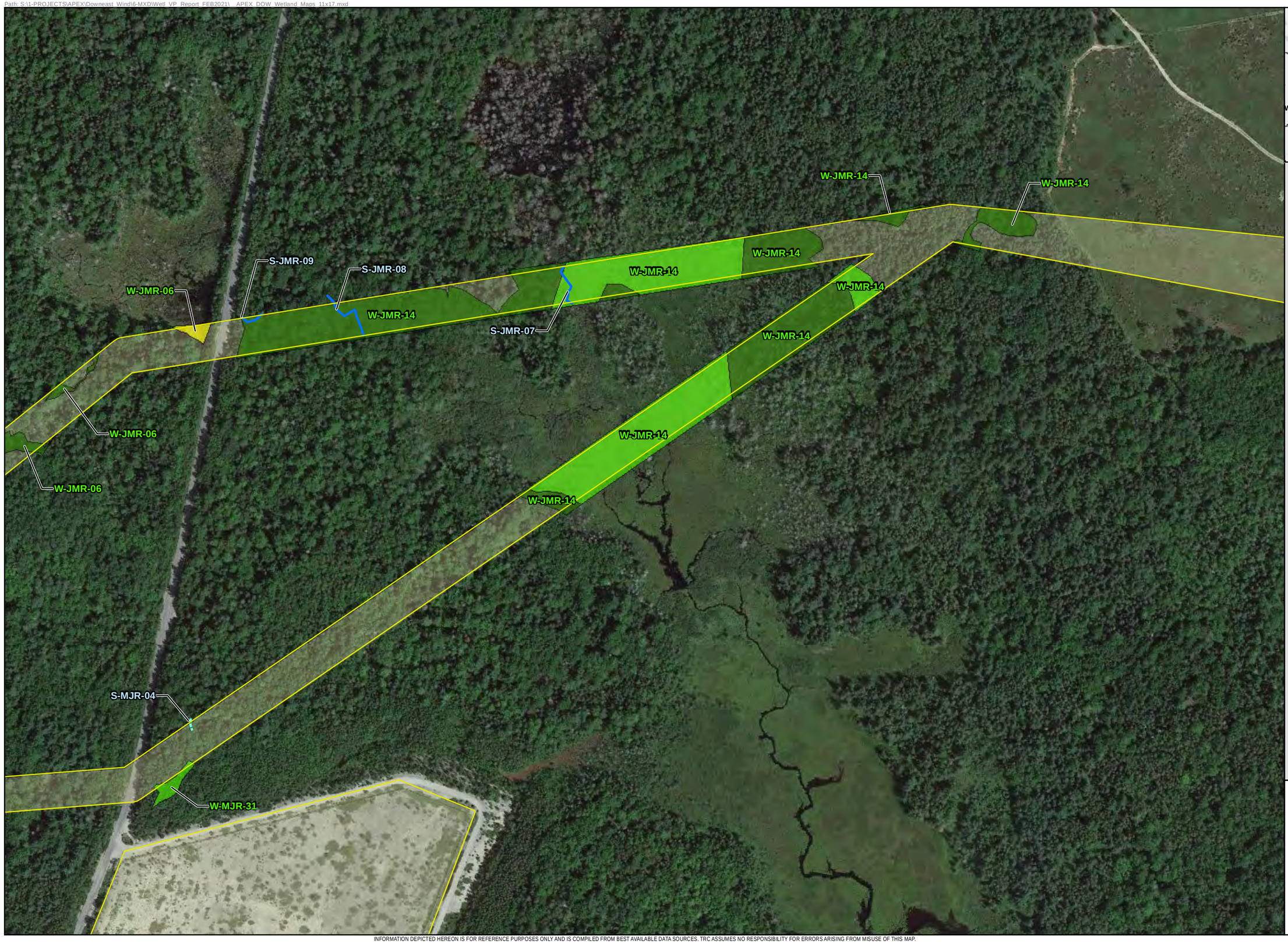
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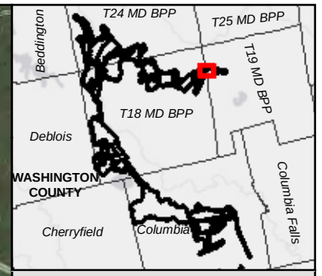
Wetlands

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14 Gabriel Drive
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2/16/2021





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- Potential Significant Vernal Pool
- Vernal Pool

N

0 250

Feet

APEX
Downeast Wind

Washington County, Maine

Wetlands

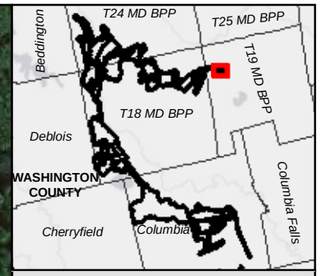
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N

0 250
Feet

APEX
Downeast Wind
Washington County, Maine

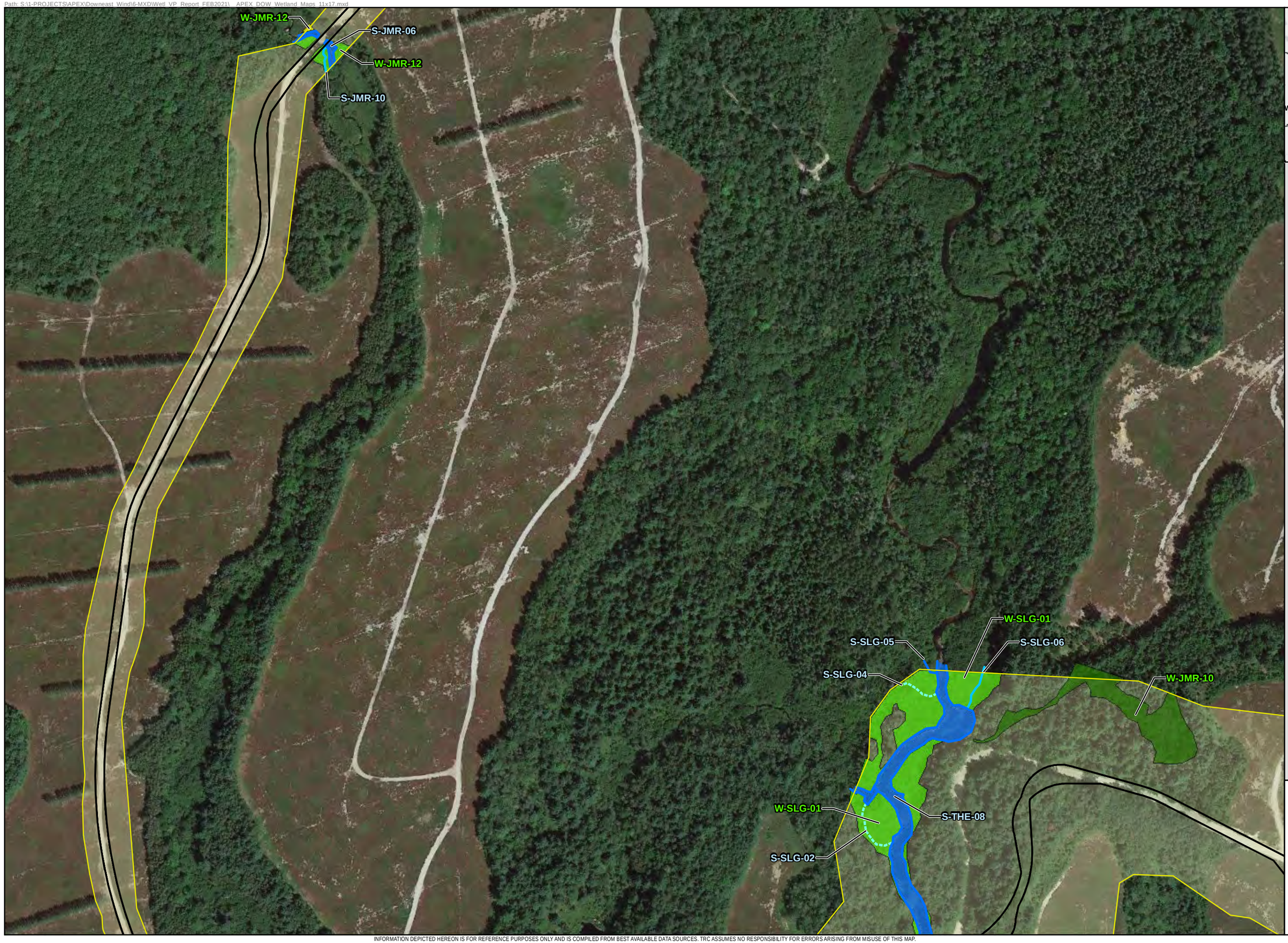
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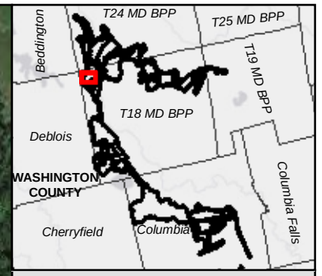
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Washington County, Maine

Wetlands

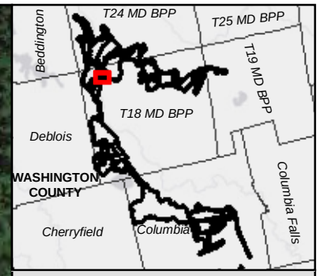
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Feet

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Downeast Wind
Washington County, Maine

Wetlands

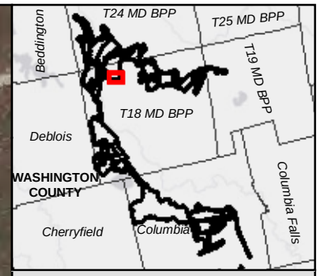
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Feet

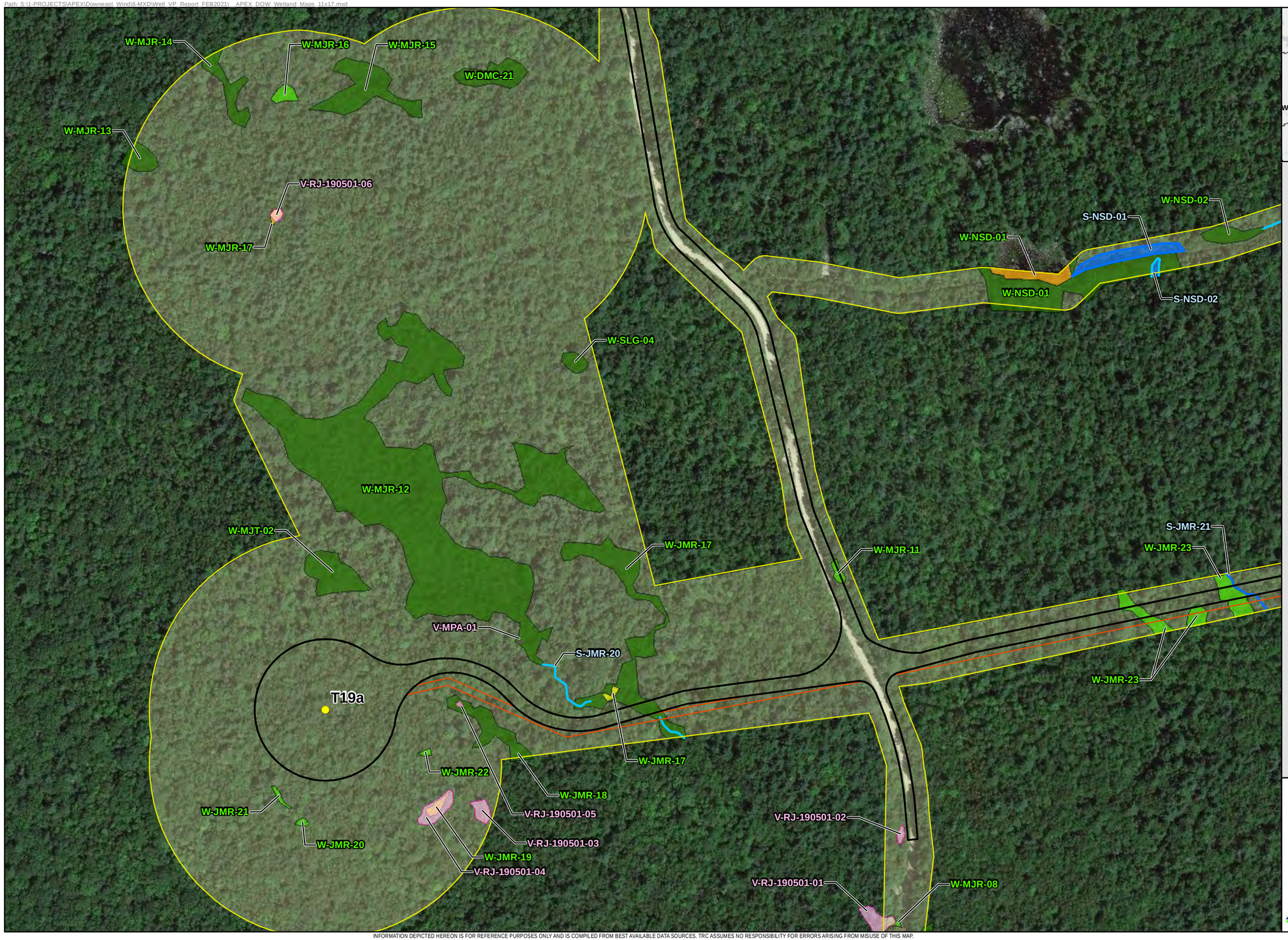
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Washington County, Maine

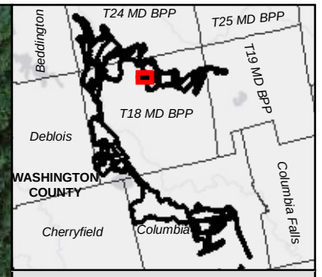
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Washington County, Maine

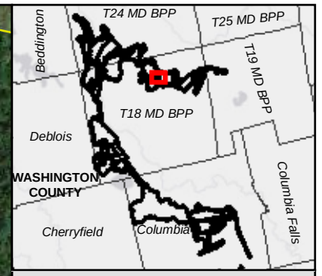
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2/16/2021

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S-NSD-03
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S-JMR-22
T18
W-JMR-26
S-JMR-23
W-JMR-24
S-JMR-24
W-JMR-26
W-JMR-28
W-JMR-29



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N

0 250
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APEX
Downeast Wind
Washington County, Maine

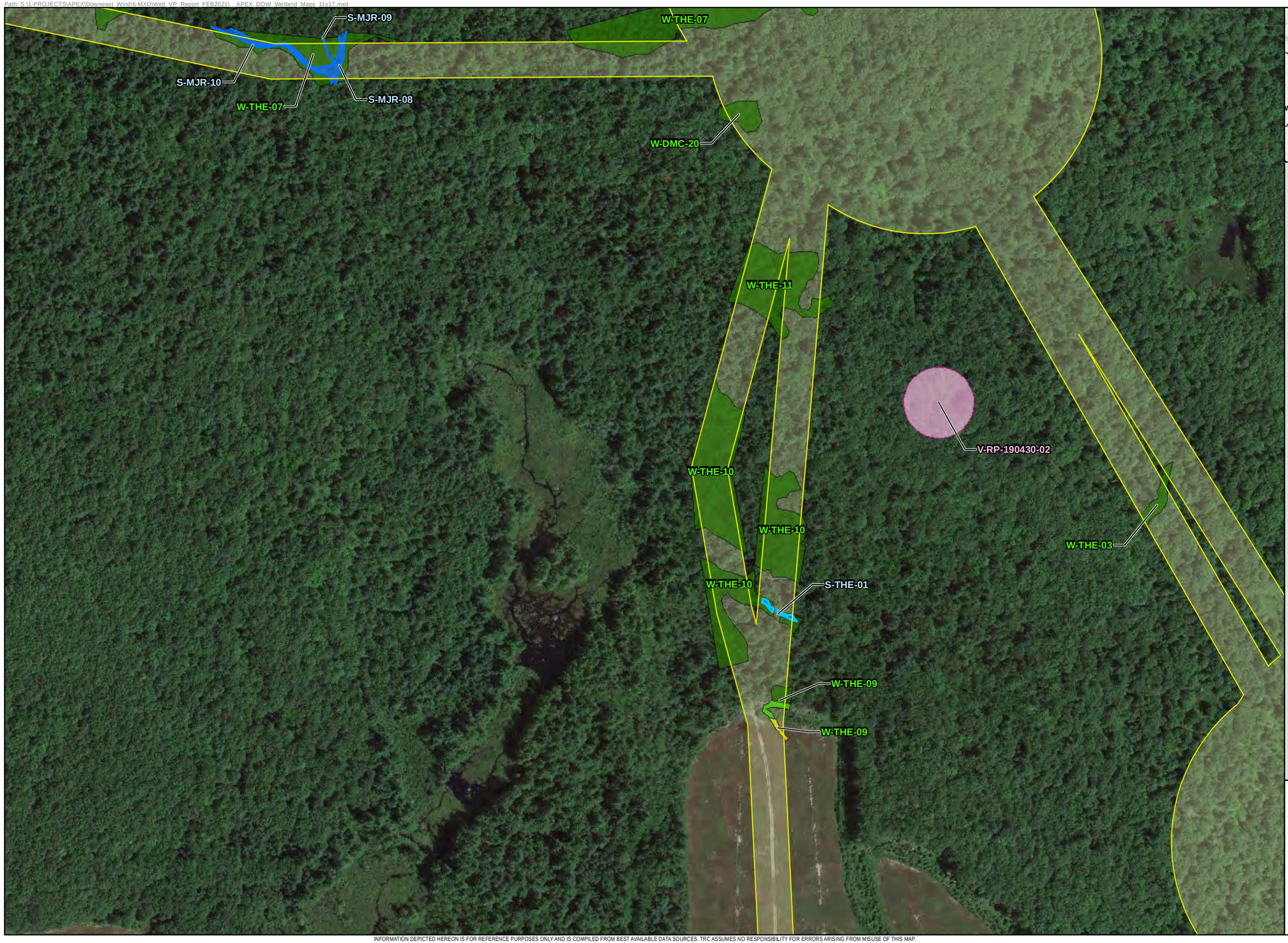
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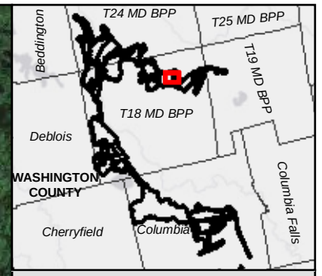
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N

0 250
Feet

APEX
Downeast Wind
Washington County, Maine

Wetlands

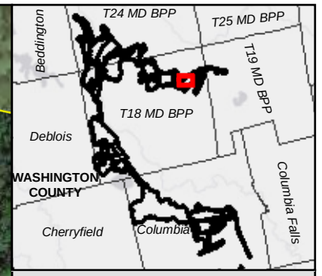
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N

0 250

Feet

APEX
Downeast Wind
Washington County, Maine

Wetlands

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14 Gabriel Drive
Augusta, ME 04330

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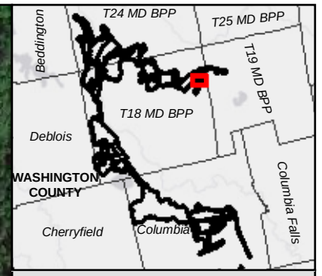
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W-JMR-08

S-JMR-02

W-JMR-03



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N

0 250
Feet

APEX
Downeast Wind
Washington County, Maine

Wetlands

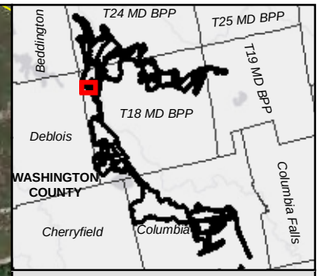
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N

0 250

Feet

APEX
Downeast Wind

Washington County, Maine

Wetlands

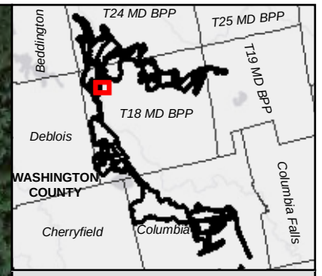
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N

0 250

Feet

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Downeast Wind
Washington County, Maine

Wetlands

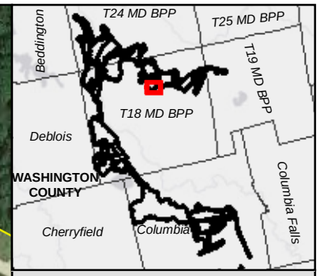
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N

0 250
Feet

APEX
Downeast Wind
Washington County, Maine

Wetlands

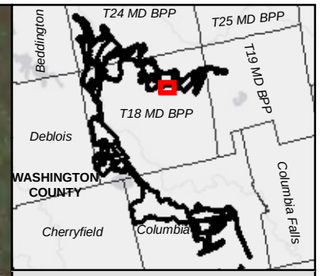
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APEX
Downeast Wind

Washington County, Maine

Wetlands

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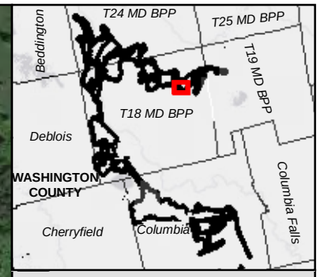
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W-JMR-05

W-JMR-04

W-JMR-04

W-JMR-04



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Wetlands

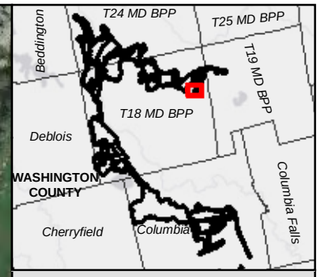
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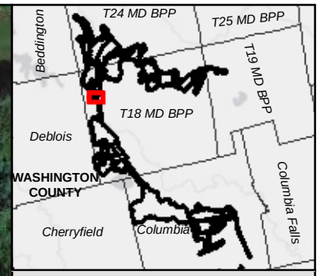
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Washington County, Maine

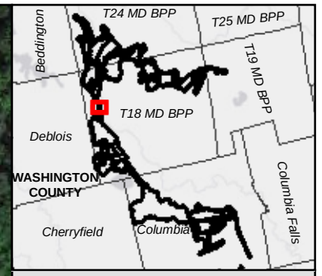
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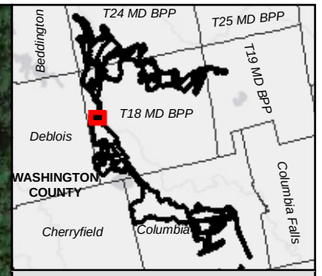
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2/16/2021

W-GAR-11
W-GAR-10
W-CWF-71
W-GAR-09
W-CWF-72
W-GAR-08
W-GAR-07
W-GAR-07
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W-GAR-07
W-SLG-09
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Feet

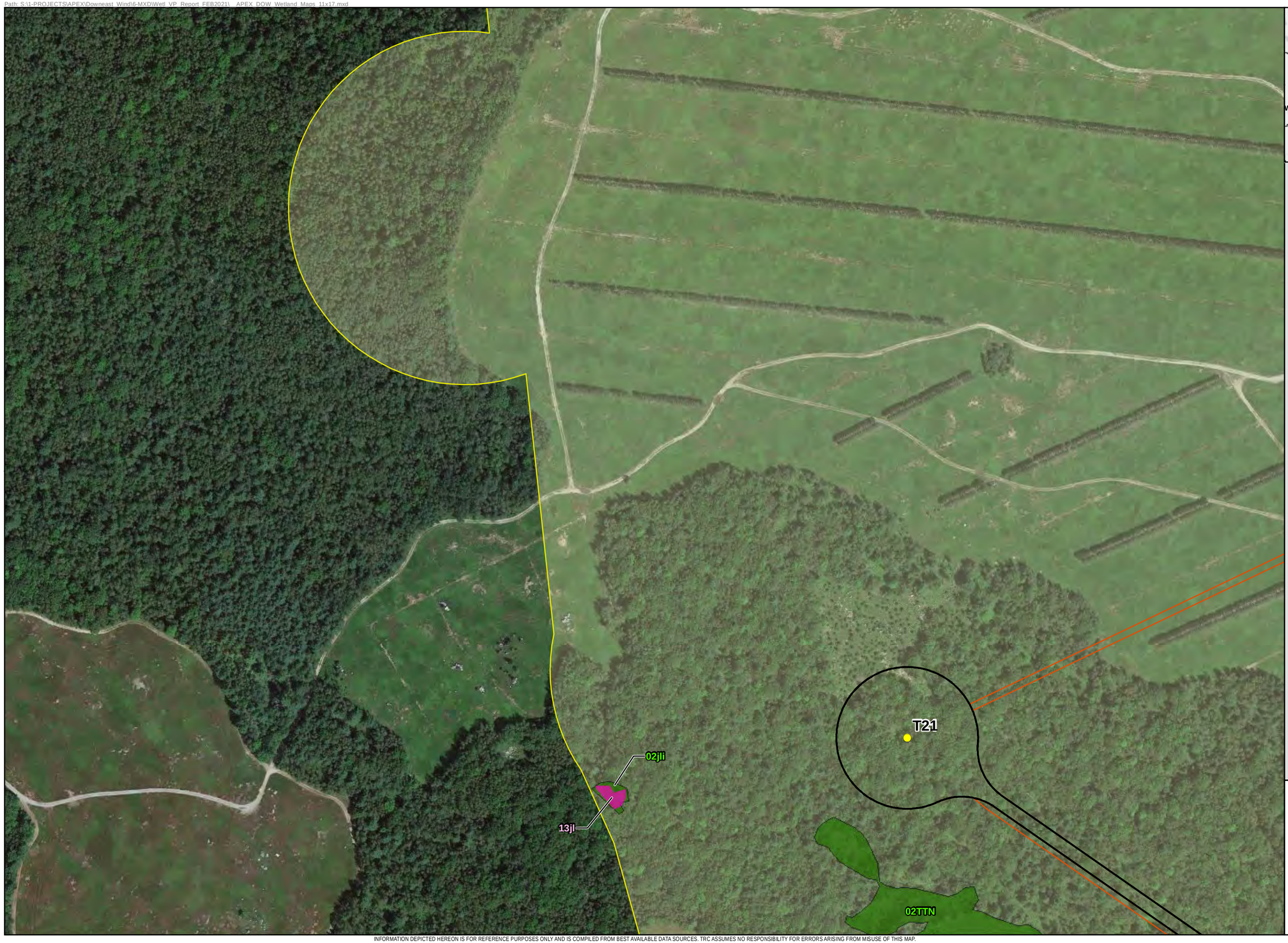
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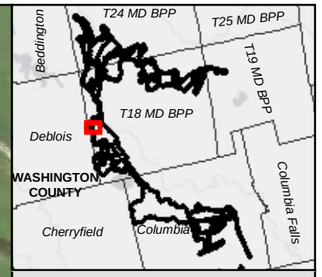
Wetlands

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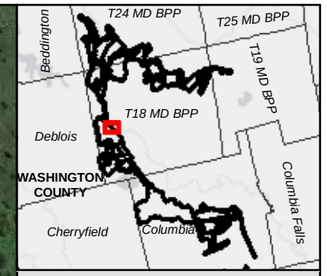
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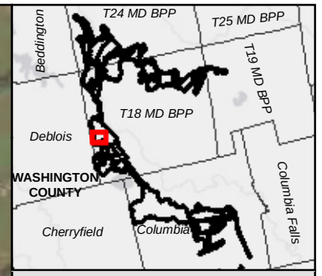
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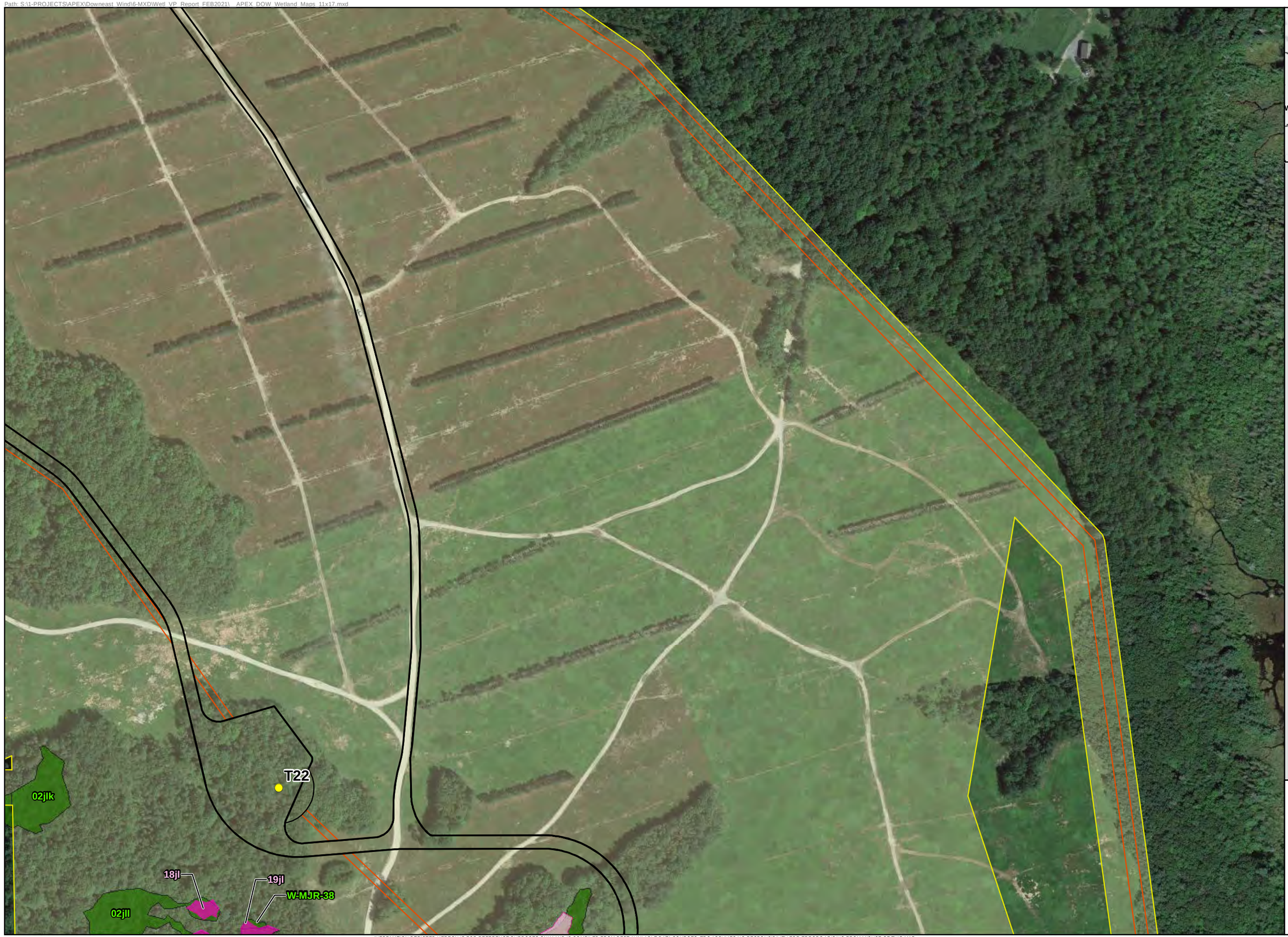
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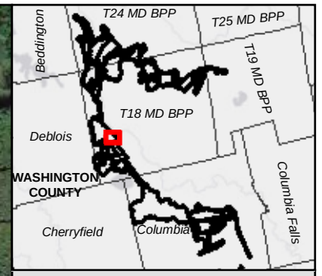
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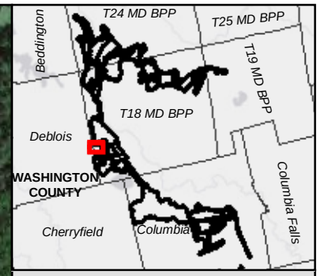
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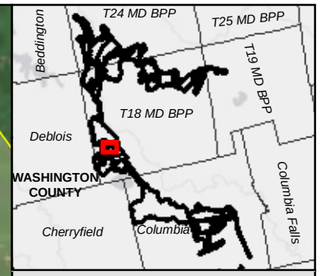
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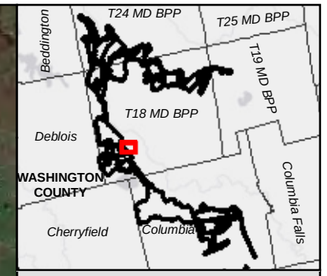
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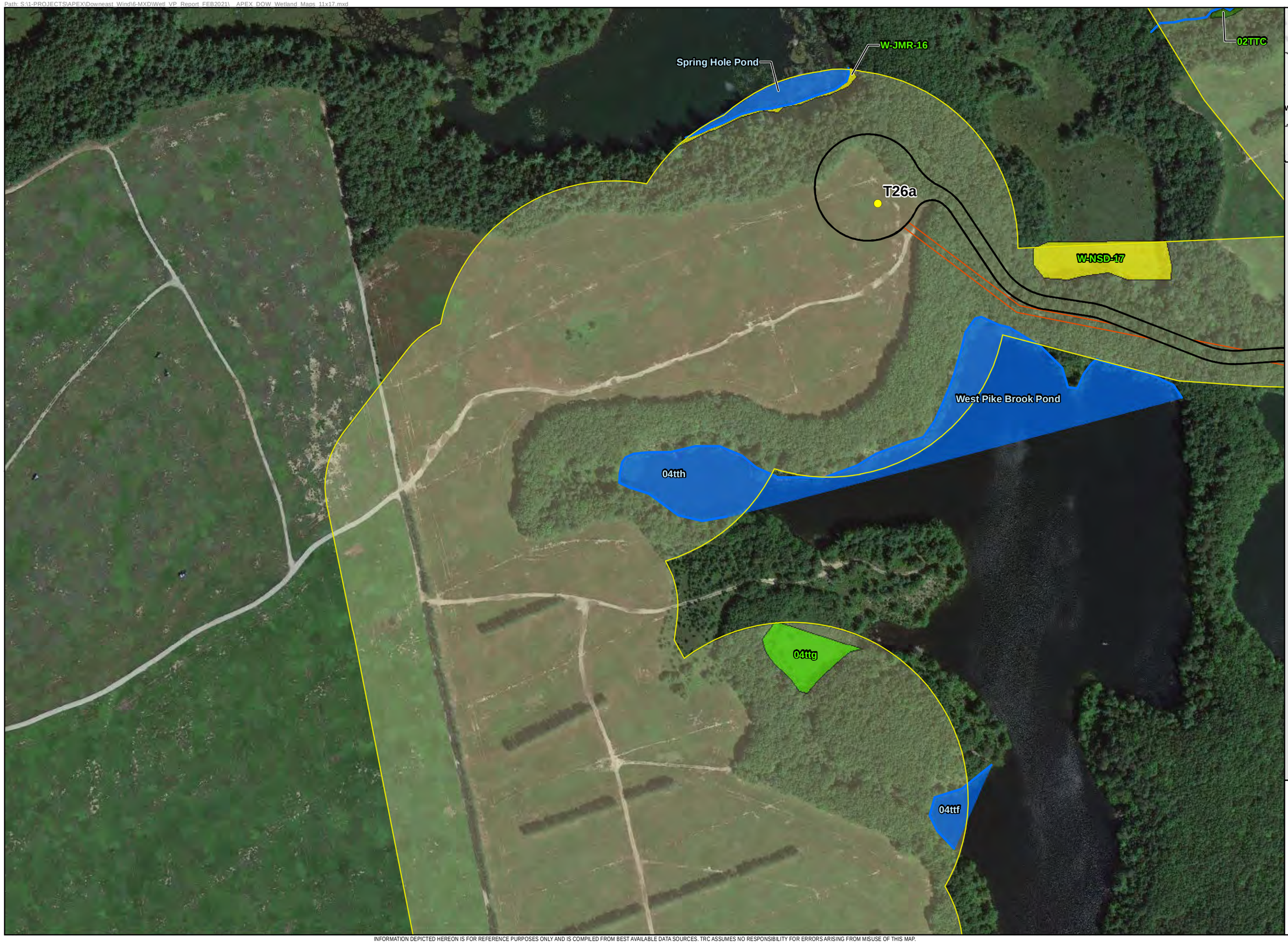
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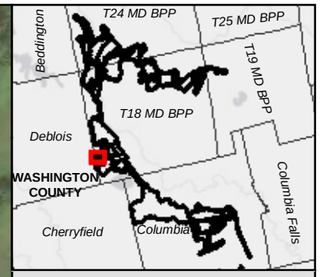
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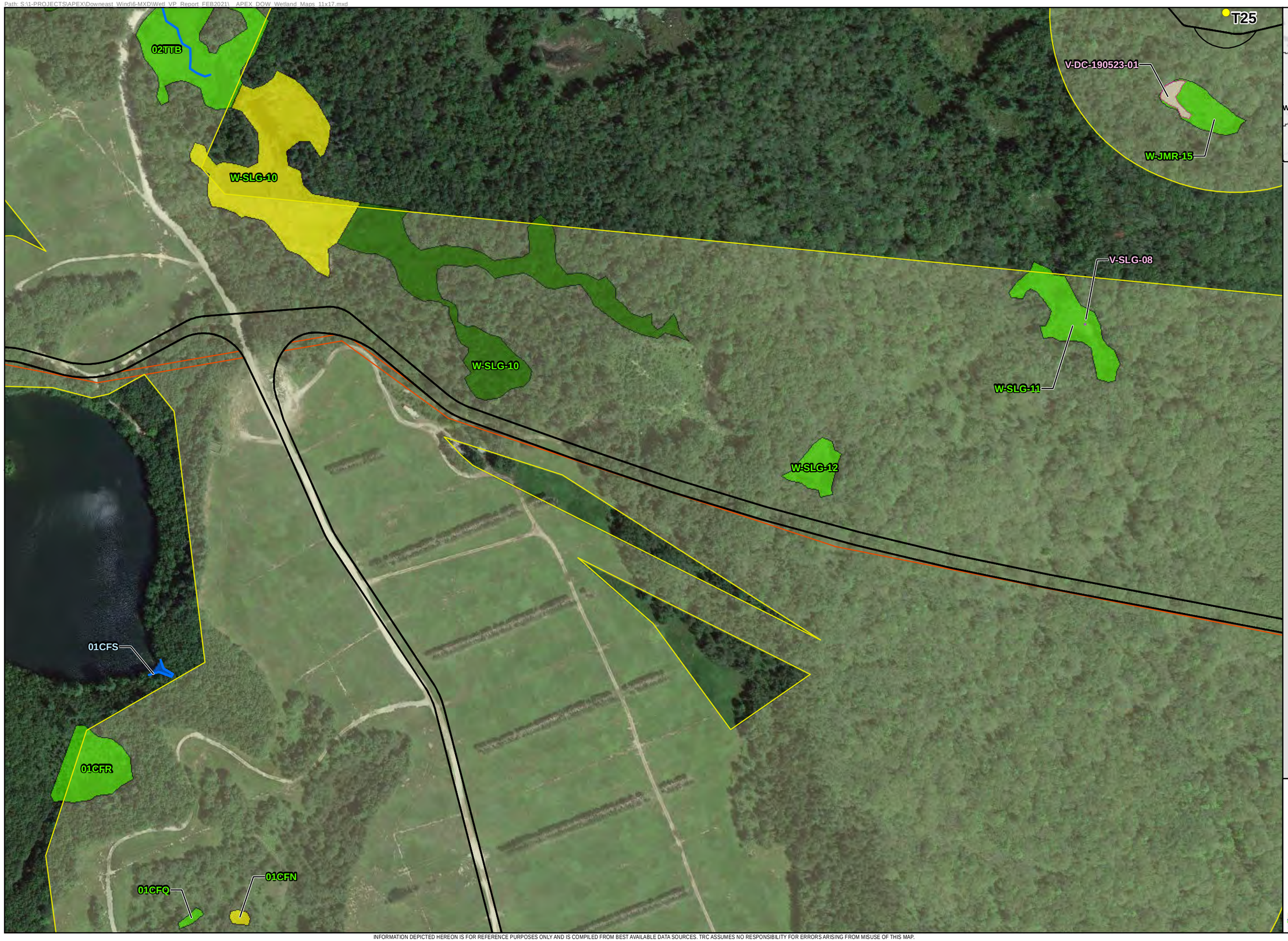
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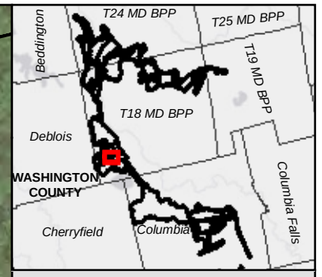
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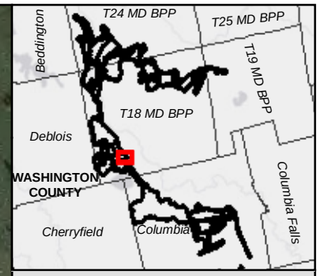
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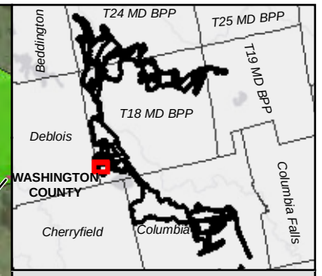
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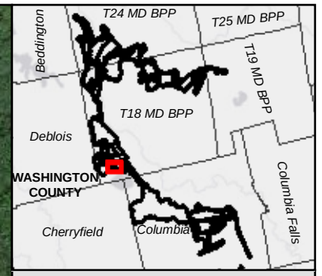
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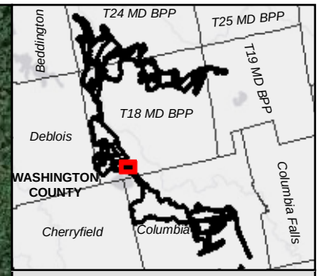
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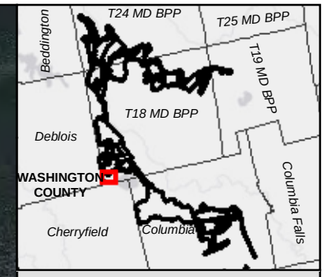
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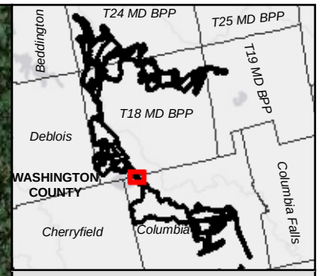
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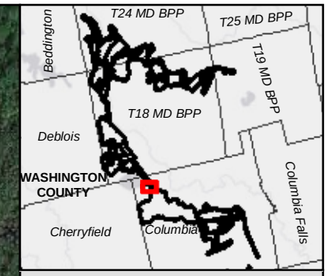
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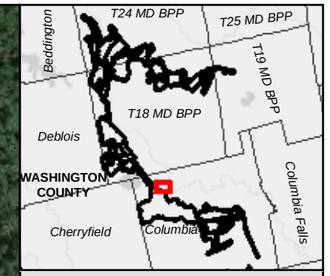
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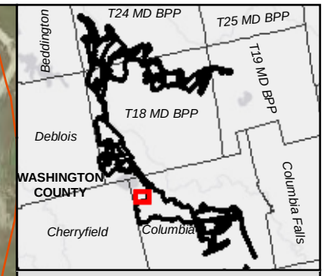
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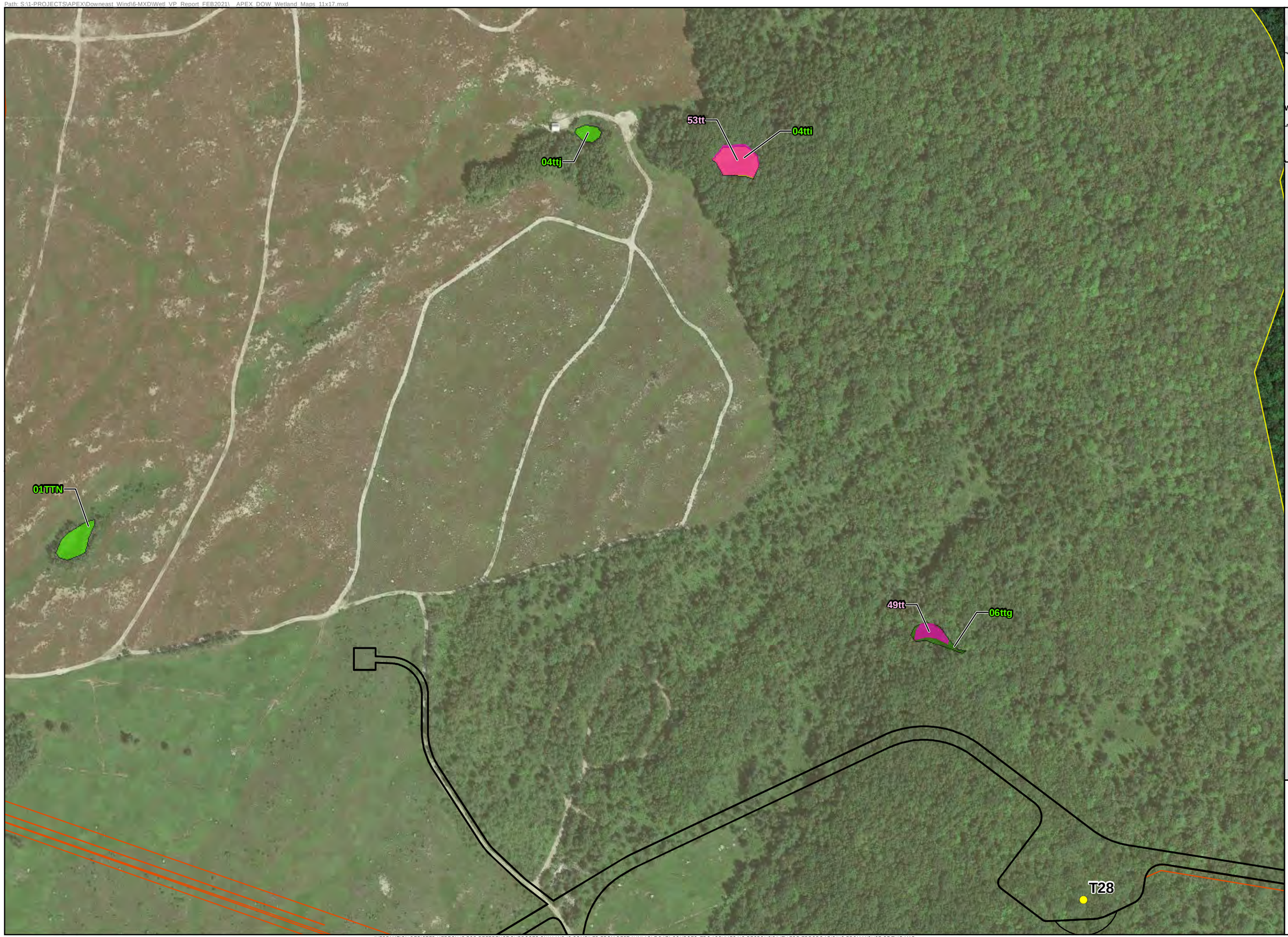
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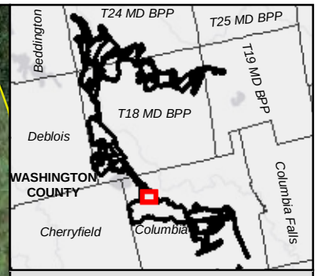
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Augusta, ME 04330

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N

0 250
Feet

APEX
Downeast Wind
Washington County, Maine

Wetlands

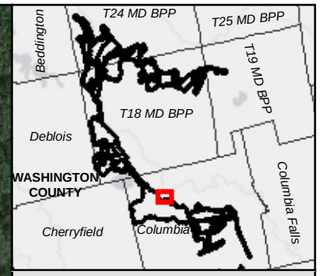
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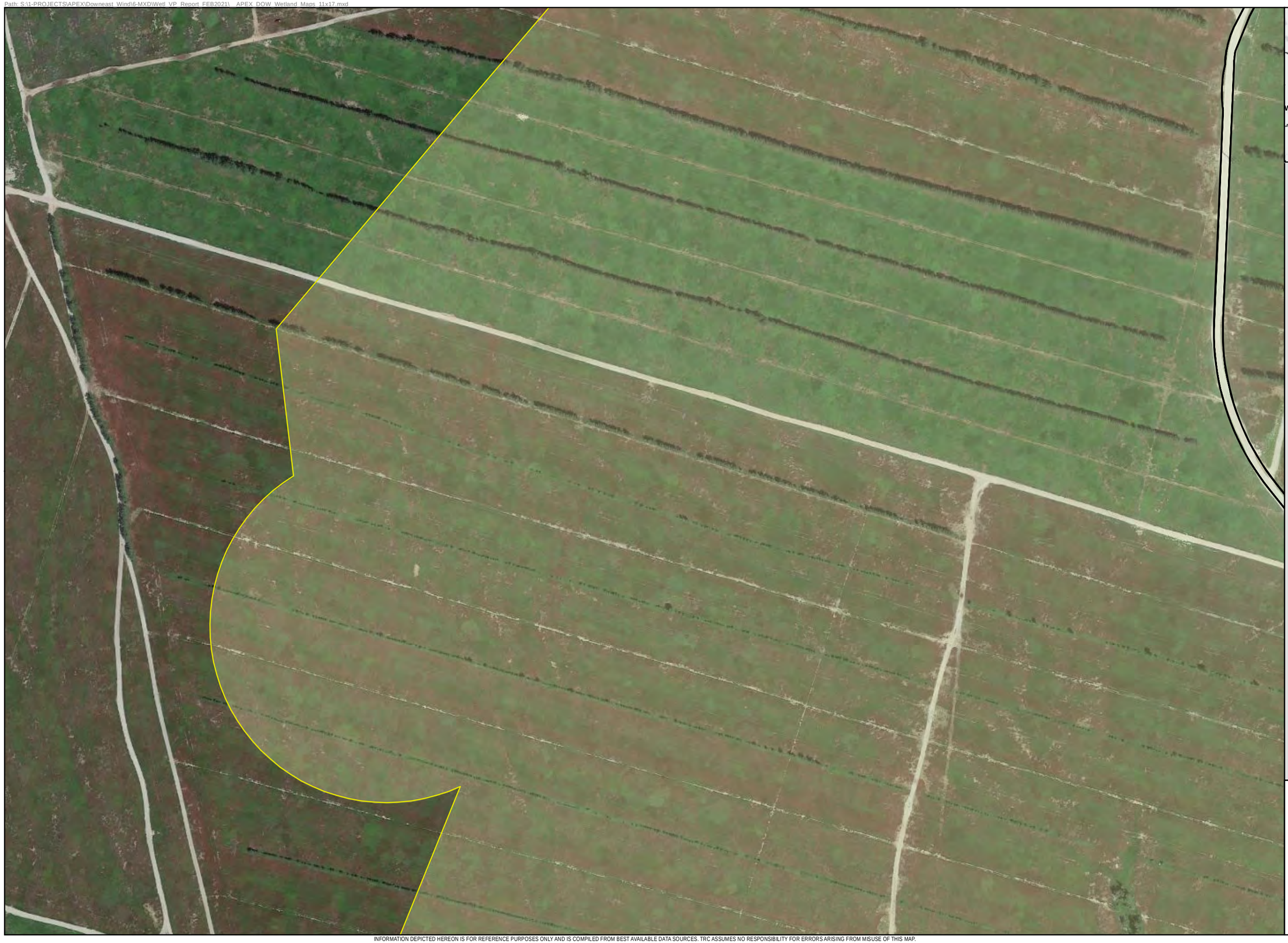
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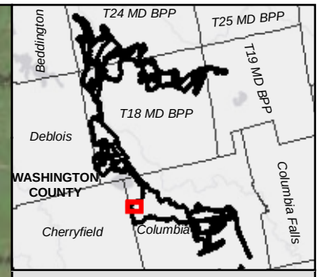
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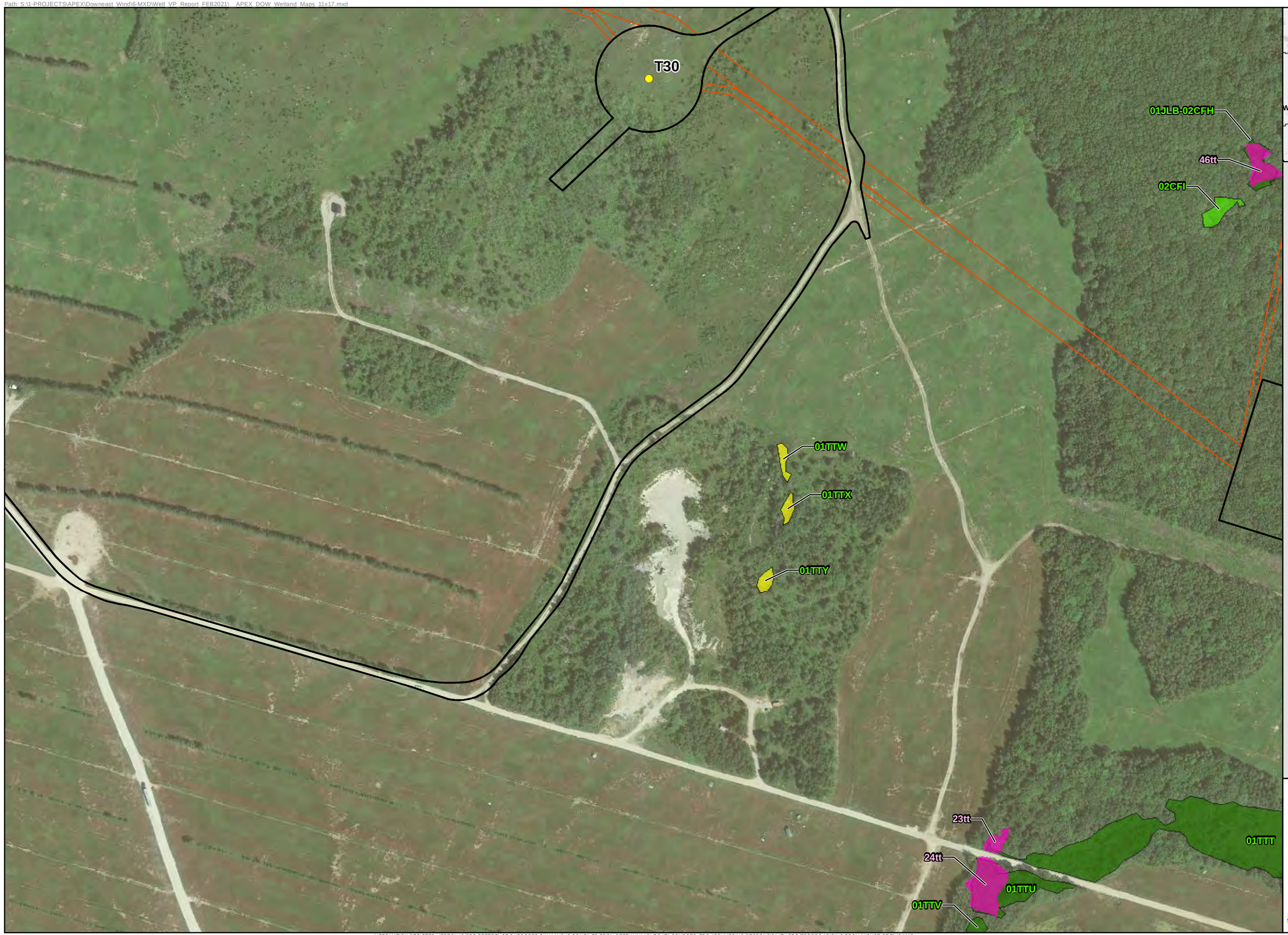
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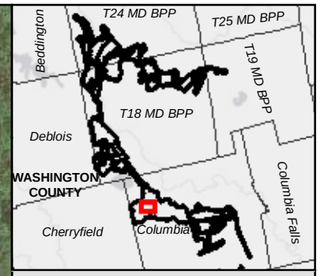
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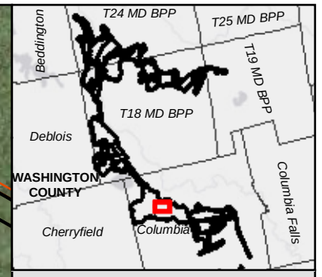
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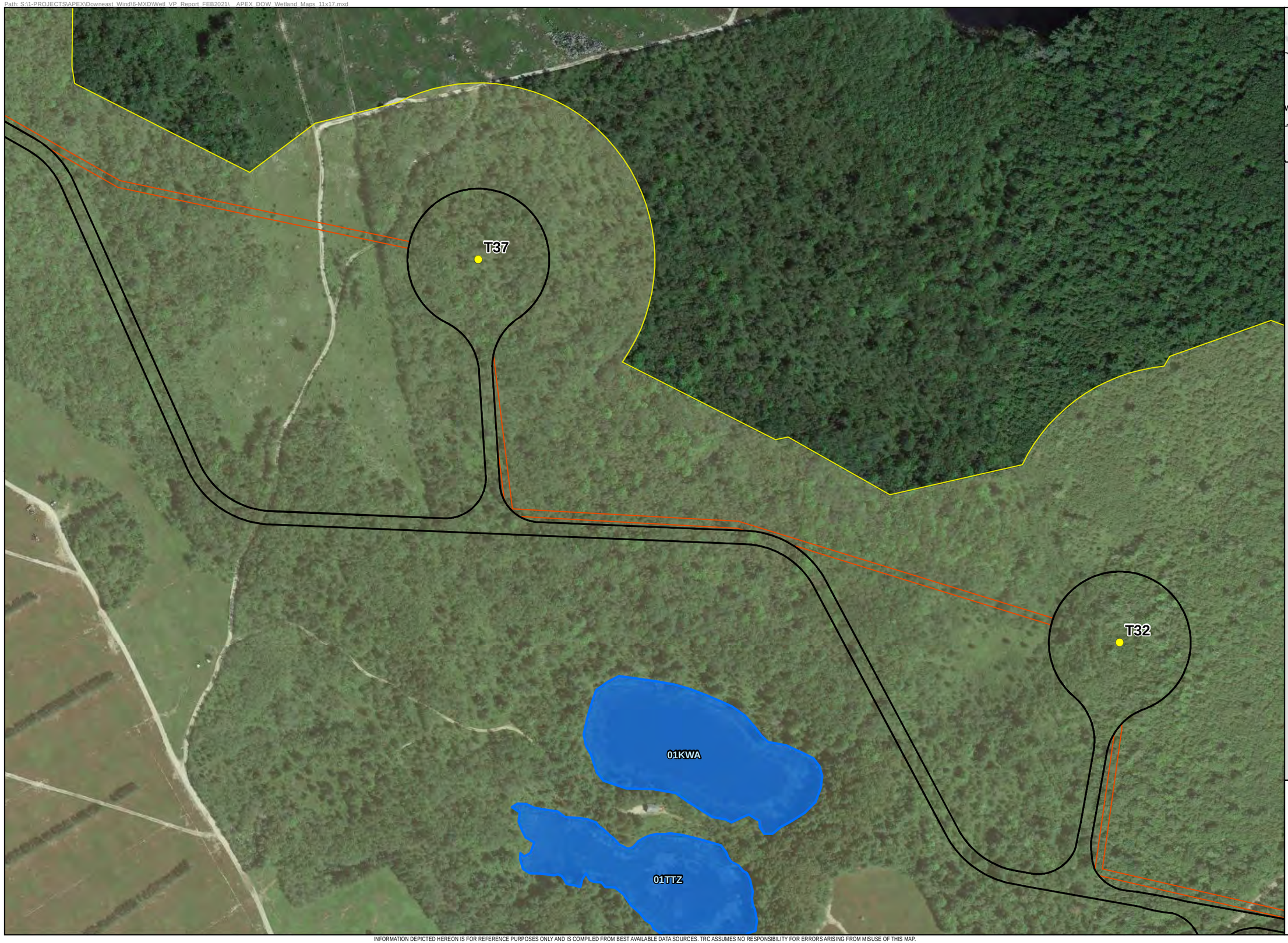
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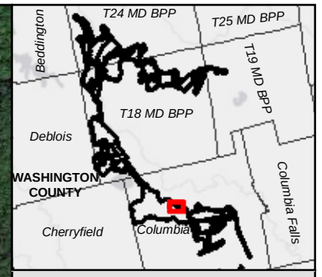
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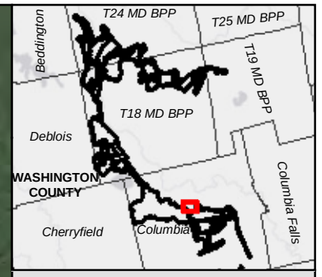
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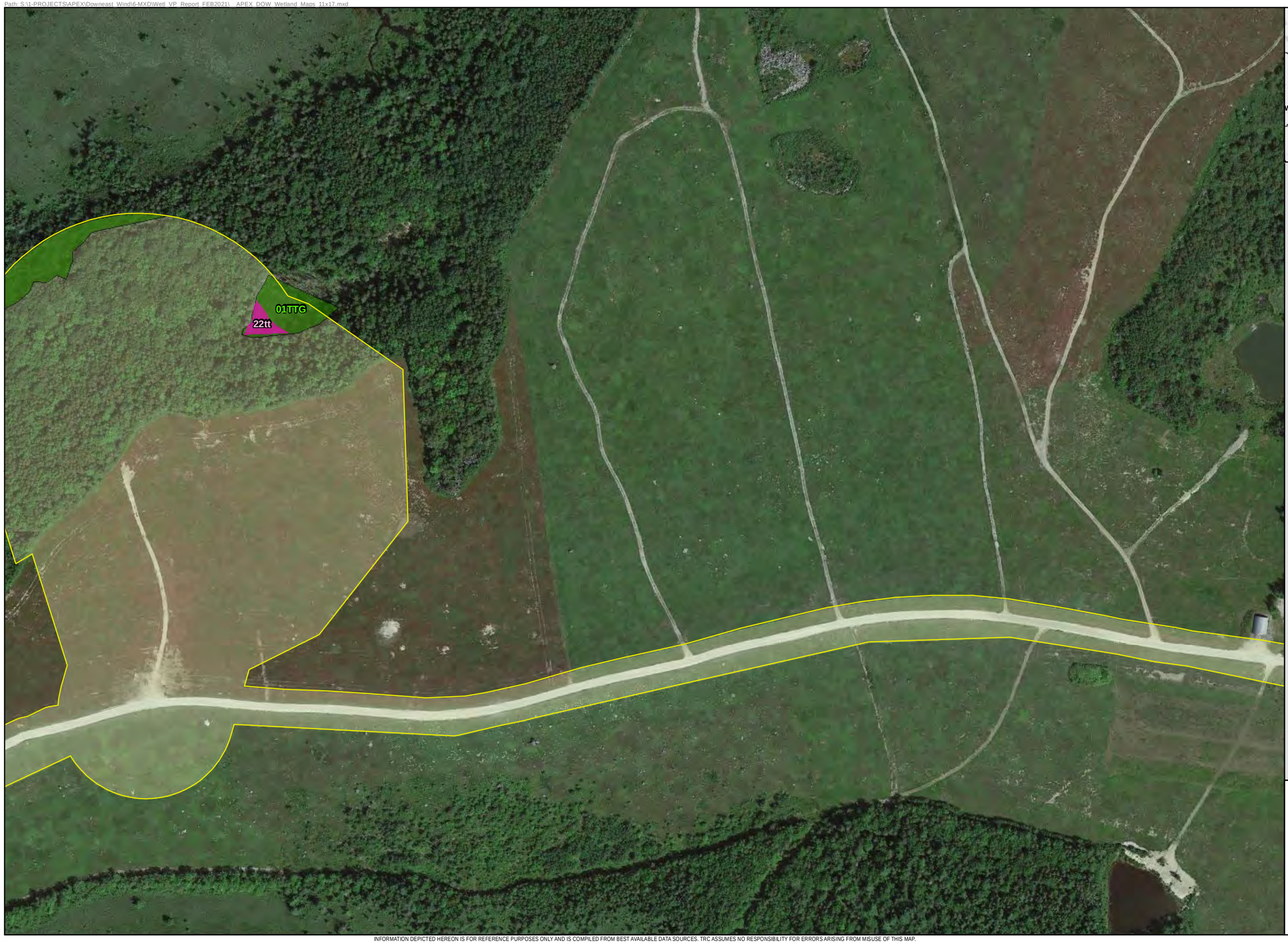
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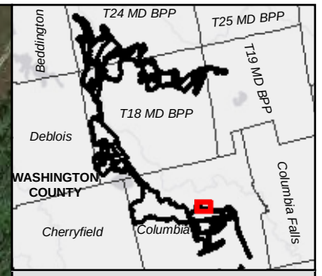
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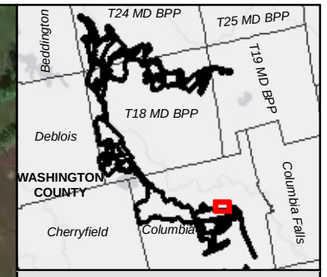
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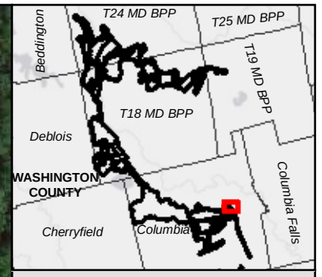
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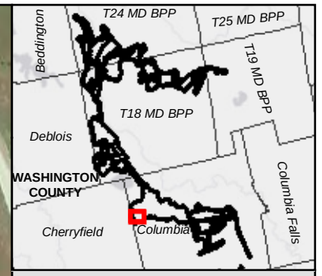
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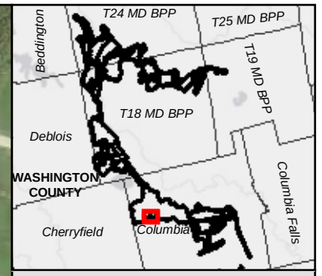
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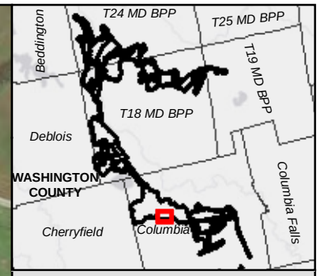
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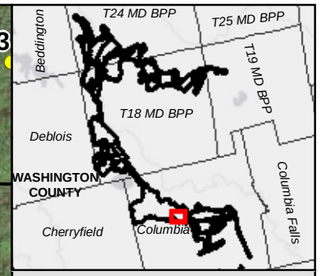
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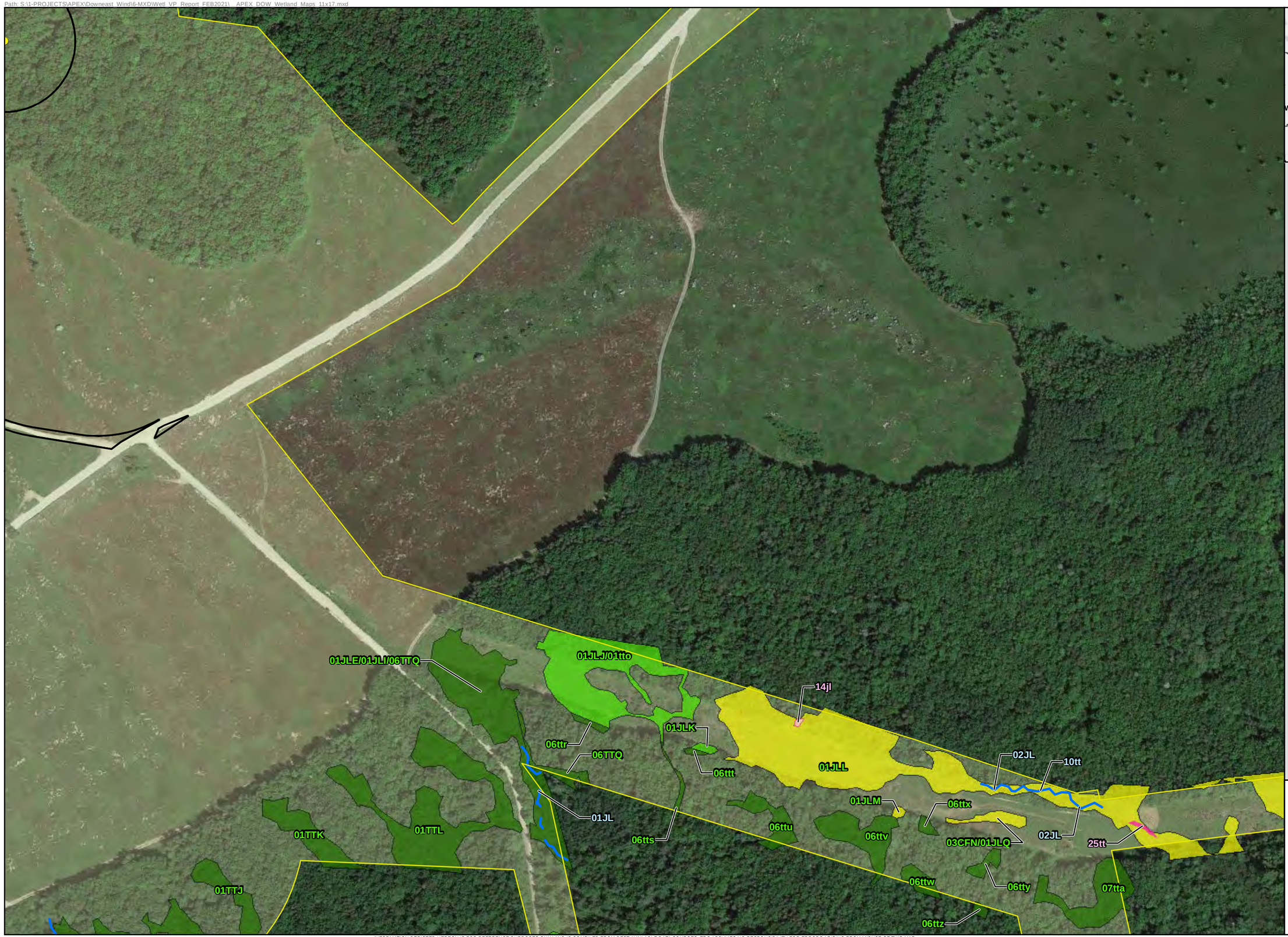
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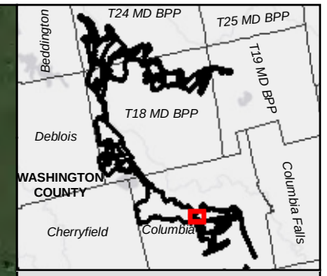
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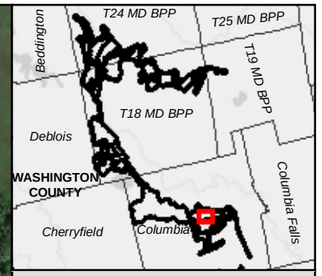
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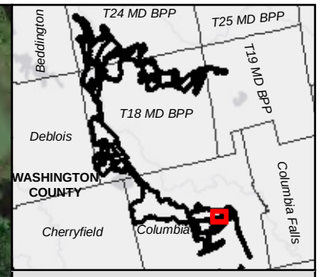
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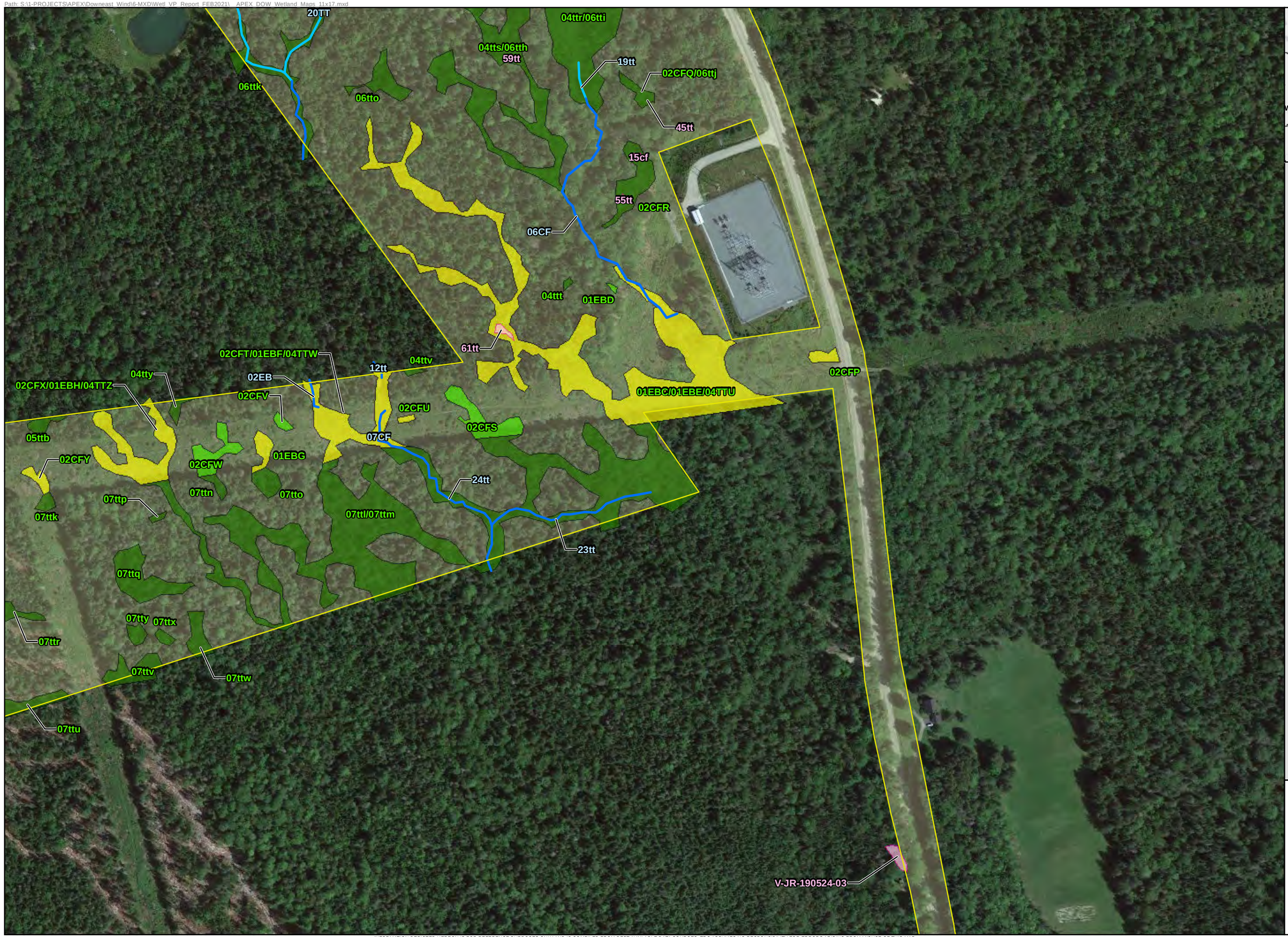
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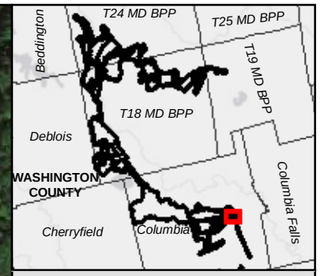
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Washington County, Maine

Wetlands

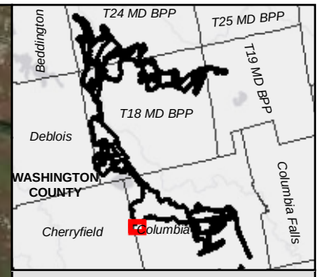
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- Potential Significant Vernal Pool
- Vernal Pool

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Feet

APEX
Downeast Wind

Washington County, Maine

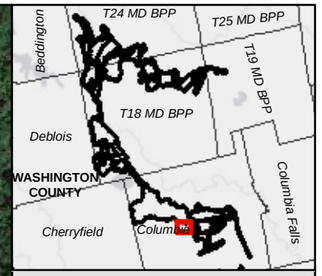
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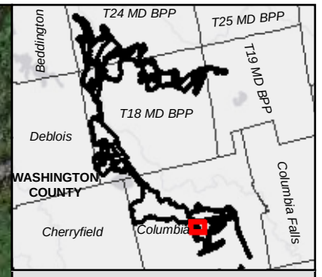
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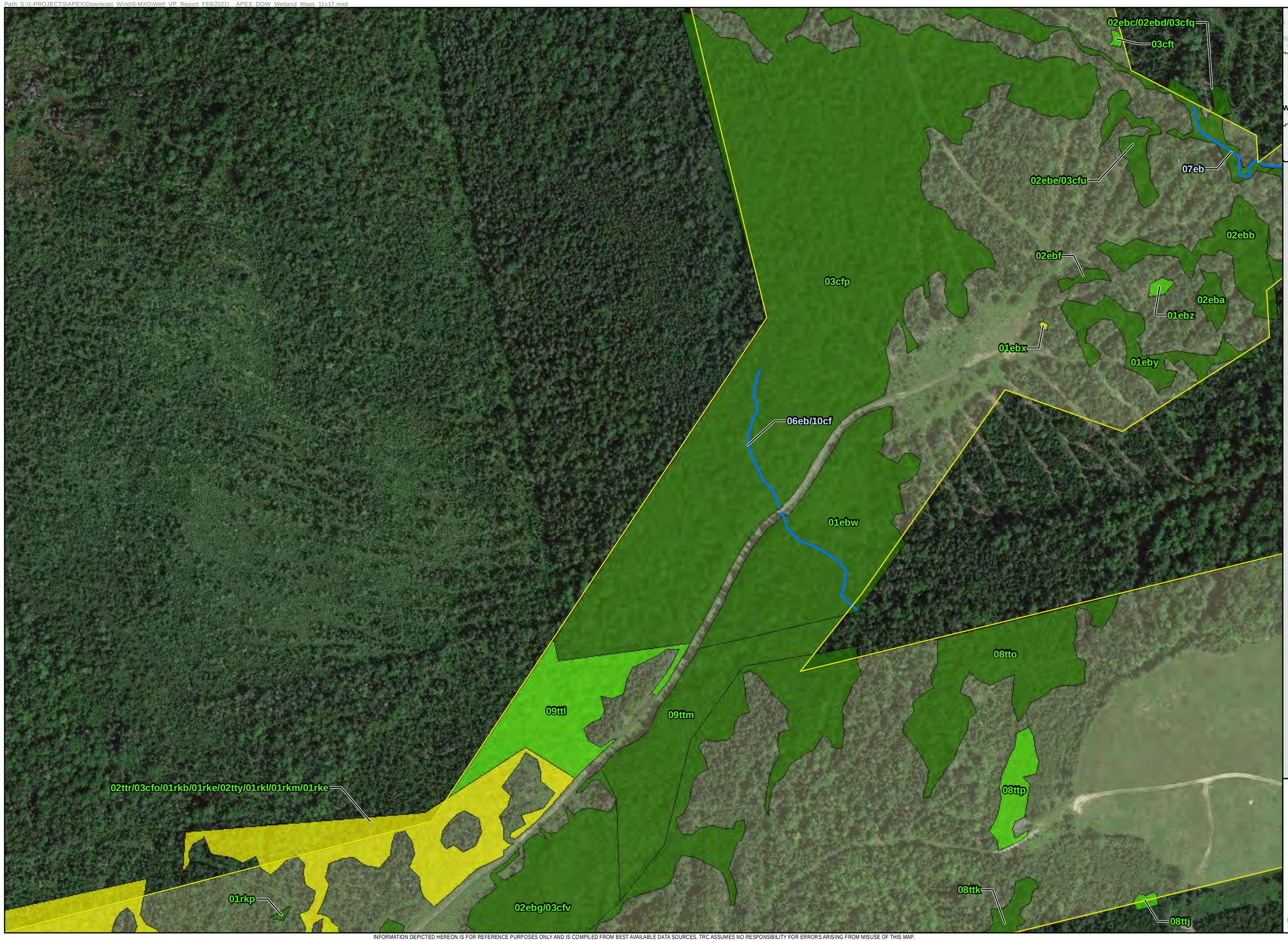
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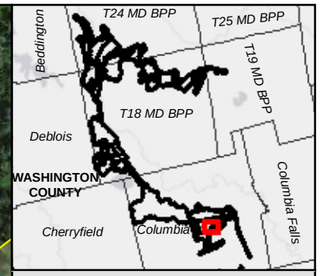
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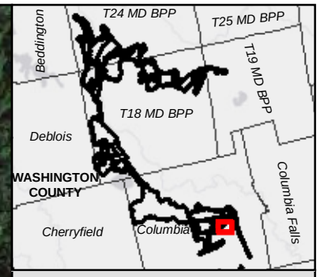
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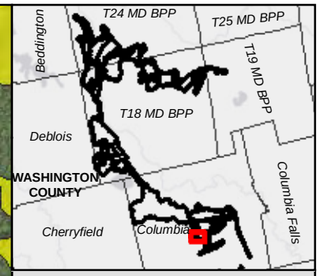
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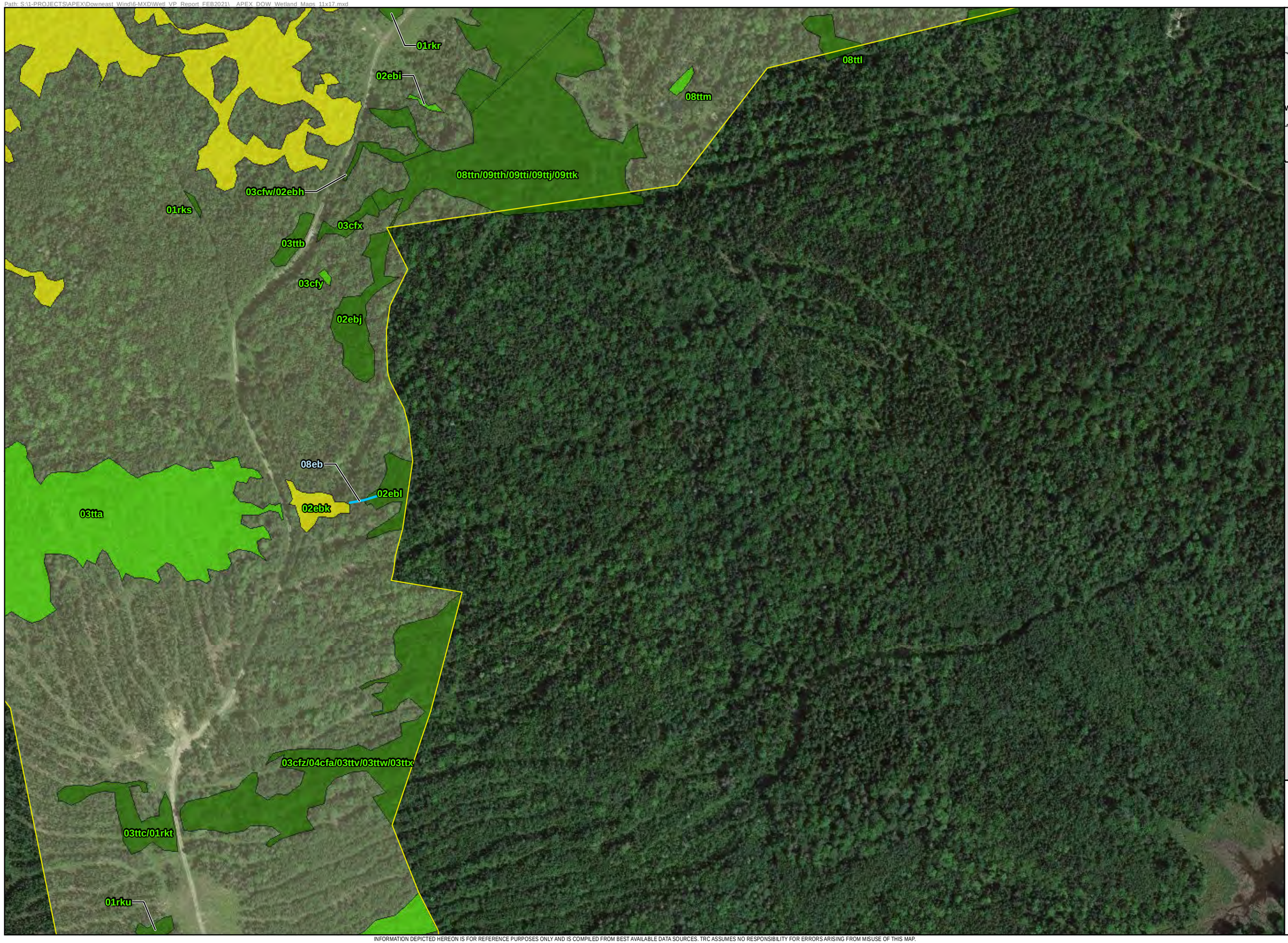
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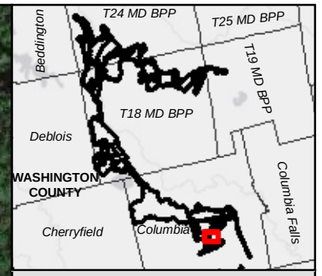
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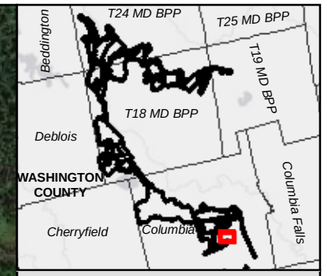
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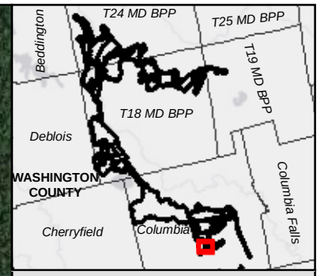
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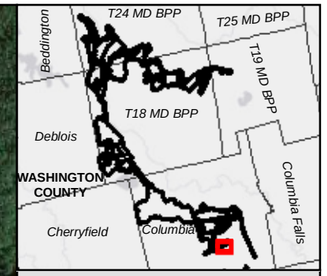
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04cfj/02ebw
04cfl/02eby
02ebu
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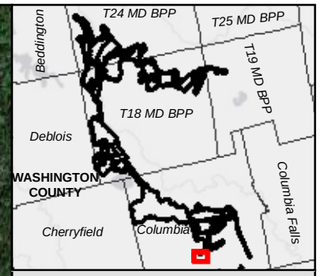
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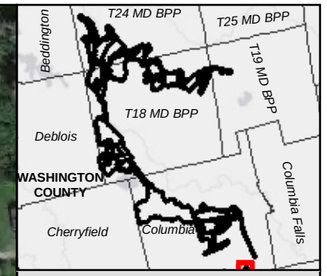
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ATTACHMENT B

Maine State Vernal Pool Field Delineation Assessment Forms

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-DC-190430-02 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Duane Choquette

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Joseph Tibbetts Phone: ____

Street Address: 278 Saco Road City: Columbia State: ME Zip: 04623

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Pool is located approximately 10 feet east of Hawk's Hill Road

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.8733 Latitude/Northing: 44.790102

Coordinate system: WGS84

Check one:

☑ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [ ] Forested swamp
- [x] Shrub swamp
- [ ] Peatland (fen or bog)
- [x] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [x] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ( ) Natural (•) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

Hydrology impounded (eg. road, blocked culvert, etc.) Excavation near road

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Large area with deep water levels Area of pool

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 100 ( ) m (•) ft Length: 190 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [x] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [x] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [x] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [x] Other: Predatory terrestrial mammals.

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ( ) No inlet or outlet
- (•) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-4-30

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ○ Yes ◉ No; what % of entire pool surveyed? 70
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	101			3			F								
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forest, shrub and herbaceous communities.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-DC-190502-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Duane Choquette

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Joseph Tibbetts Phone: ____

Street Address: 278 Saco Road City: Columbia State: ME Zip: 04623

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Pool is located approximately 1,100 feet east of access road in blueberry fields. Pool is located approximately 2,800 feet east of the Pleasant River.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.912823 Latitude/Northing: 44.783094

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 115 ○ m ◉ ft Length: 175 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☑ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ◉ Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-2

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander	21			3			M								
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Large natural pool in forested community,Small area of suitable vernal pool habitat in forest, shrub and herbaceous communities.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-DC-190503-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Duane Choquette

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Joseph Tibbetts Phone: ____

Street Address: 278 Saco Road City: Columbia State: ME Zip: 04623

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Pool is located in forested landscape, approximately 5 feet west of gravel access road and approximately 2,000 feet west of the Pleasant River.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.927285 Latitude/Northing: 44.805744

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (●) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (●) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (●) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (●) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 90 ( ) m (●) ft Length: 125 ( ) m (●) ft

■ Predominate substrate in order of increasing hydroperiod:

- ( ) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [x] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [x] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [ ] Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ( ) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- (●) Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-3, 2019-5-23

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	5										5000			3	
Spotted Salamander	1														
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☑ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-DC-190503-02 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Matthew Todd

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: ____ Phone: ____

Street Address: ____ City: ____ State: _ Zip: _

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: ____

Brief site directions to the pool (using mapped landmarks):

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.929635 Latitude/Northing: 44.806703

Coordinate system: WGS84

Check one:

☐ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (•) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: __ ( ) m (•) ft Length: __ ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [x] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [x] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [x] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [x] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [ ] Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ( ) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- (•) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-3, 2019-5-23

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	19	13		3	3			H			200			3	
Spotted Salamander	7	7		3	3			A							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-DC-190523-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Duane Choquette

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Road City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Pool is located in forested complex, approximately 2,700 feet northeast of blueberry gravel access road off of Schoodic Pond Road and approximately 2,200 feet west of large NWI complex associated with the Pleasant River. Pool is located approximately 3,000 feet northeast of East Pike Brook Pond.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.897829 Latitude/Northing: 44.718069

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ○ Pool associated with larger wetland complex
- ◉ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 ○ m ◉ ft Length: 110 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ◉ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool
- ☐ Other:

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ◉ Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-2, 2019-5-23

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander		5			3			A							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forest, shrub and herbaceous communities. Was ORP190502 32

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-JB-190503-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Jim Bolduc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Joseph Tibbetts Phone: ____

Street Address: 278 Saco Road City: Columbia State: ME Zip: 04623

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Pool is located in forested landscape, approximately 1,900 feet north of blueberry fields, approximately 1,800 feet west of gravel access road, approximately 2,500 feet west of the Pleasant River, and approximately 2,700 feet northeast of Colonel Brook.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.931878 Latitude/Northing: 44.79806

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: (•) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 ( ) m (•) ft Length: 45 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [x] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [ ] Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-3, 2019-5-24

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	8			3			M								
Spotted Salamander	8	3		3	3		F	A							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-JB-190503-02 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Jim Bolduc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Joseph Tibbetts Phone: ____

Street Address: 278 Saco Road City: Columbia State: ME Zip: 04623

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Pool is located in forested landscape, approximately 85 feet west of gravel access road and approximately 1,600 feet west of the Pleasant River.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.926048 Latitude/Northing: 44.804496

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [ ] Forested swamp
- [x] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Pool is comprised of small pockets joined by seasonal hydrology Pit and mound topo

■ Maximum depth at survey: (•) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 50 ( ) m (•) ft Length: 160 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [x] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [x] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [ ] Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-3, 2019-5-23

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	36			3			M				1000			3	
Spotted Salamander	8	9		3	3		F	A							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☒ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Large natural pool in forested community,

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-JB-190503-03 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Jim Bolduc

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Joseph Tibbetts Phone: ____

Street Address: 278 Saco Road City: Columbia State: ME Zip: 04623

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Pool is located in forested landscape, approximately 750 feet north of blueberry fields, approximately 2,100 feet west of gravel access road, approximately 2,400 feet west of the Pleasant River, and approximately 1,900 feet northeast of Colonel Brook.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.932699 Latitude/Northing: 44.794211

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: (•) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 50 ( ) m (•) ft Length: 90 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool
- ☐ Other:

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-3, 2019-5-24

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander	2			3			F								
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pool abuts boundary edge,Small area of suitable vernal pool habitat in forested community. 2 hatched ss masses

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-JR-190502-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Joe Roy

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Road City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Pool is located in forested landscape in between blueberry fields approximately 4,100 feet west of Beech Hill Road and 3,000 east of the Pleasant River.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.909921 Latitude/Northing: 44.781012

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (•) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: (•) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 ( ) m (•) ft Length: 60 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [x] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool
- [x] Other: None.

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: _____

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander	18	13		3	3		F	A							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forest, shrub and herbaceous communities. 18 spotted salamander egg masses. Second visit needed

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-JR-190503-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Joe Roy

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Joseph Tibbetts Phone: ____

Street Address: 278 Saco Road City: Columbia State: ME Zip: 04623

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Pool is located in forested landscape, approximately 20 feet east of gravel access road and approximately 1,700 feet west of the Pleasant River.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.926317 Latitude/Northing: 44.805927

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (●) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (●) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (●) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (●) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 75 ( ) m (●) ft Length: 200 ( ) m (●) ft

■ Predominate substrate in order of increasing hydroperiod:

- (●) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [x] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [x] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [x] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [ ] Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ( ) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- (●) Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-3

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	102			3			M			0					
Spotted Salamander	14			3			M			14			2		
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Large natural pool in forested community Wood frogs vocalizing on pool edge

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-JR-190522-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Joe Roy

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Road City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Pool is located approximately 20 feet east of access road approximately 1,600 feet south of Shagadee Road.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.8098229691 Latitude/Northing: 44.7811149205

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [ ] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [x] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ( ) Natural (•) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

adjacent to large road Roadside may lead to ponding

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring Pool with wet moss and coattails

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 ( ) m (•) ft Length: 100 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- ( ) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- (•) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [x] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [x] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [x] Other: None.

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog							H			600			3		
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☑ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Skidder or woods road impacts,Small area of suitable vernal pool habitat in forested community. Small pool roadside

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-JR-190523-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Joe Roy

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Joseph Tibbetts Phone: ____

Street Address: 278 Saco Road City: Columbia State: ME Zip: 04623

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Pool is located in forested landscape, approximately 40 feet west of gravel access road and approximately 1,800 feet west of the Pleasant River.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.9263774 Latitude/Northing: 44.8051359

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (●) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (●) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (●) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: (●) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 60 ( ) m (●) ft Length: 100 ( ) m (●) ft

■ Predominate substrate in order of increasing hydroperiod:

- (●) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool
- ☑ Other: None.

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (●) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-23, 2019-5-23

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog											4000			3	
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☑ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community. No eggs noted on first visit. Tadpoles encountered on second visit.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-JR-190523-02 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Joe Roy

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: ____ Phone: ____

Street Address: ____ City: ____ State: _ Zip: _

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: ____

Brief site directions to the pool (using mapped landmarks):

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.9261246 Latitude/Northing: 44.8012382

Coordinate system: WGS84

Check one:

☐ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (•) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

■ Maximum depth at survey: (•) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 ( ) m (•) ft Length: 25 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-3, 2019-5-24

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog											500			3	
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in shrub and herbaceous community. Small area, likely less than necessary egg massesbased on tadpoles count. No egg masses at first observations

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-JR-190524-03 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Joe Roy

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Joseph Bradley Phone: ____

Street Address: 194 Epping Road City: Columbia State: ME Zip: 04623

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

Pool is located approximately 30 feet west of Station Road, approximately 1,300 feet south of transmission line crossing.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.7772361413 Latitude/Northing: 44.6682169967

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (•) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Physical and biological hydrology indicators demonstrate water depth and duration

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 ( ) m (•) ft Length: 85 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☑ No vegetation in pool
- ☐ Other:

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-3, 2019-5-24

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander											2000			3	
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190430-02 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

While traveling west on Bombing Range Road, turn to head north on Hawks Hill Road. Then after three-quarters of a mile, the pool is almost half a mile east.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.859929 Latitude/Northing: 44.776849

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (●) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [ ] Forested swamp
- [x] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (●) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (●) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Large area with deep water levels

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (●) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 120 ( ) m (●) ft Length: 245 ( ) m (●) ft

■ Predominate substrate in order of increasing hydroperiod:

- (●) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [x] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool
- [x] Other: None.

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (●) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-4-30, 2019-5-24

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0										2000			3	
Spotted Salamander	4			3			F								
Blue-spotted Salamander	0														
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☑ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Large natural pool in shrub and herbaceous communities 2000+ spotted salamander egg masses

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190430-03 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: ____ Phone: ____

Street Address: ____ City: ____ State: _ Zip: _

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: ____

Brief site directions to the pool (using mapped landmarks):

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.85767 Latitude/Northing: 44.778189

Coordinate system: WGS84

Check one:

☐ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: __ ( ) m (•) ft Length: __ ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [x] Other: None.

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: _____

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog											1000			3	
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☑ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Pit and mound wetland with 5 wf and 3 spot Tadpoles. Unable to determine significance

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190430-05 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

While traveling west on Bombing Range Road, turn to head north on Hawks Hill Road. Then after almost a mile, the pool is half a mile east.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.859825 Latitude/Northing: 44.779575

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [ ] Forested swamp
- [x] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 ( ) m (•) ft Length: 50 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [x] Other: None.

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-4-30, 2019-5-24

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog											3000			3	
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☑ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in shrub and herbaceous community. No egg masses observed. Tadpoles observed. Unable to determine if significant number.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190430-06 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

While traveling west on Bombing Range Road, turn to head north on Hawks Hill Road. Then after three-quarters of a mile, the pool is half a mile northeast.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.860331 Latitude/Northing: 44.779096

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [ ] Forested swamp
- [x] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 ( ) m (•) ft Length: 50 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [x] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool
- [x] Other: None.

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: _____

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in shrub and herbaceous community. No egg masses observed.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190430-08 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

While traveling west on Bombing Range Road, turn to head north on Hawks Hill Road. Then after a mile, the pool is almost 175 feet east.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.869486 Latitude/Northing: 44.777878

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

Ruts (e.g. skidder, ORVs , etc.)

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 ○ m ◉ ft Length: 90 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool
- ☑ Other: None.

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-4-30

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	4			3			M								
Spotted Salamander	31			3			M								
Blue-spotted Salamander	0														
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Skidder or woods road impacts Egg masses only located in skidder rut which is associated with larger inundated wetland.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190501-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

While traveling west on Bombing Range Road, turn to head north on Hawks Hill Road. Then after one-quarter of a mile, the pool is on the left.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.86628 Latitude/Northing: 44.768983

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [ ] Forested swamp
- [x] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 35 ( ) m (•) ft Length: 110 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool
- [x] Other: None.

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ( ) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- (•) Other or Unknown (explain): culvert out

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-1, 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	1			3											
Spotted Salamander	5	3		3	3			A							
Blue-spotted Salamander	0														
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in shrub and herbaceous community.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190501-02 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

While traveling west on Bombing Range Road, turn to head north on Hawks Hill Road. Then after one-quarter of a mile, the pool is on the left just north of V-RJ-190501-01.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.866135 Latitude/Northing: 44.769617

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [ ] Forested swamp
- [x] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ( ) Natural (•) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

Ruts (e.g. skidder, ORVs , etc.)

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 20 ( ) m (•) ft Length: 50 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [x] Other: None.

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-1, 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	5			3											
Spotted Salamander	7			3											
Blue-spotted Salamander	0														
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in shrub and herbaceous community.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190501-03 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

While traveling west on Bombing Range Road, turn to head north on Hawks Hill Road. Then after one-third of a mile, the pool is one-quarter mile west.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.870667 Latitude/Northing: 44.769942

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (●) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (●) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (●) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Large area with deep water levels

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (●) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 35 ( ) m (●) ft Length: 60 ( ) m (●) ft

■ Predominate substrate in order of increasing hydroperiod:

- (●) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool
- [x] Other: None.

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (●) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-1, 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0														
Spotted Salamander	1			3											
Blue-spotted Salamander	0														
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190501-04 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

While traveling west on Bombing Range Road, turn to head north on Hawks Hill Road. Then after one-third of a mile, the pool is one-quarter mile west (directly west from V-RJ-190501-03).

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.871026 Latitude/Northing: 44.76996

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) (•) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 45 ( ) m (•) ft Length: 125 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [ ] Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-1, 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	15	1		3	3			A							
Spotted Salamander	5	6		3	3			A							
Blue-spotted Salamander	0														
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190501-05 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

While traveling west on Bombing Range Road, turn to head north on Hawks Hill Road. Then after four-tenths of a mile, the pool is almost one-quarter mile west.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.870897 Latitude/Northing: 44.770709

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (●) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (●) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (●) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (●) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: __ ( ) m (●) ft Length: __ ( ) m (●) ft

■ Predominate substrate in order of increasing hydroperiod:

- (●) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool
- [x] Other: None.

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (●) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-1, 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0														
Spotted Salamander	4	2		3	3			A							
Blue-spotted Salamander	0														
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190501-06 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

While traveling west on Bombing Range Road, turn to head north on Hawks Hill Road. Then after three-quarters of a mile, the pool is less than one-quarter mile west.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.872898 Latitude/Northing: 44.774464

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (●) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (●) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (●) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (●) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 ( ) m (●) ft Length: 40 ( ) m (●) ft

■ Predominate substrate in order of increasing hydroperiod:

- (●) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool
- [x] Other: None.

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (●) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-1, 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0														
Spotted Salamander	10	4		3			F								
Blue-spotted Salamander	0														
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RJ-190502-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Randi Jackson

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Passamaquoddy Tribe of ME Phone: ____

Street Address: 1292 US Highway 1 City: Columbia Falls State: ME Zip: 04623

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia Falls

Brief site directions to the pool (using mapped landmarks):

The pool is on the west corner of the intersection of Shadagee Road and the Project access road between Columbia Air Force Stations.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.807262 Latitude/Northing: 44.785202

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [ ] Forested swamp
- [x] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ( ) Natural (•) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

Hydrology impounded (eg. road, blocked culvert, etc.) Road impounded on two sides of VP

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 55 ( ) m (•) ft Length: 75 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [ ] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool
- [x] Other: None.

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-2, 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	17			3			M								
Spotted Salamander	3	4		3	3		F	A							
Blue-spotted Salamander	1	3			3		A	A							
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in shrub and herbaceous community.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RP-190430-02 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Ray Peck

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

When traveling west on Bombing Range Road, turn north into the field east of and before Taylor Branch. Then the pool is approximately four-tenths of a mile north.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.8377492 Latitude/Northing: 44.7728442

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of ____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [ ] Forested swamp
- [x] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (•) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring Shallow with ample sun. No inlet/outlet

■ Maximum depth at survey: (•) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 ( ) m (•) ft Length: 30 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [x] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [ ] Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: _____

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ○ No
- Was the entire pool surveyed for egg masses? ○ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog											200			2	
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RP-190430-04 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Ray Peck

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

When traveling west on Bombing Range Road, turn north into the field east of and before Taylor Branch. Then the pool is approximately six-tenths of a mile north northeast.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.834844 Latitude/Northing: 44.775185

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (●) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (●) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (●) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Physical and biological hydrology indicators demonstrate water depth and duration

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (●) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 65 ( ) m (●) ft Length: 70 ( ) m (●) ft

■ Predominate substrate in order of increasing hydroperiod:

- (●) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (●) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-4-30, 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog											4000			2	
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☑ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Large natural pool in shrub and herbaceous communities No egg masses observed on first visit. large numbers of wood frog tadpoles observed on second visit.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RP-190430-05 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Ray Peck

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

When traveling west on Bombing Range Road, turn north into the field east of and before Taylor Branch. Then the pool is approximately six-tenths of a mile north and slightly east.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.8366759 Latitude/Northing: 44.7764916

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (•) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Physical and biological hydrology indicators demonstrate water depth and duration

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 50 ( ) m (•) ft Length: 225 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-22, 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ○ No
- Was the entire pool surveyed for egg masses? ○ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog											1000			3	
Spotted Salamander															
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☑ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Large natural pool in shrub and herbaceous communities

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RP-190430-06 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Ray Peck

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

When traveling west on Bombing Range Road, turn north into the field east of and before Taylor Branch. Then the pool is approximately six-tenths of a mile north.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.8403539 Latitude/Northing: 44.776482

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ( ) Natural ( ) Natural-Modified ( ) Unnatural (•) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

The area has been historically logged.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (•) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Small area with shallow water depth likely drys in late spring

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 50 ( ) m (•) ft Length: 50 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ( ) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- (•) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-4-30, 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ○ No
- Was the entire pool surveyed for egg masses? ○ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog											1000			3	
Spotted Salamander											500			3	
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☑ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community. no eggs seen in original sweep, return for second visit to confirm

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RP-190430-08 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Ray Peck

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Off 4x4 Rd near the southwest corner of Taylor Brook Pond

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.8457959 Latitude/Northing: 44.7786789

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [ ] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ( ) Natural (•) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

Hydrology impounded (eg. road, blocked culvert, etc.) Expanded

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ( ) Permanent
- (•) Semi-permanent (drying partially in all years and completely in drought years)
- ( ) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Hydrology created by artificial impoundment Damaged culvert, primitive rd

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 150 ( ) m (•) ft Length: 300 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- ( ) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- (•) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [x] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [x] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [x] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [ ] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [ ] Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ( ) No inlet or outlet
- (•) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-4-30, 2019-5-22

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ○ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander	3	1		3	3			A			100			3	
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RP-190502-01 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Ray Peck

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Off Schoodic rd to the west, approximately 1.25 miles south of Long Pond .

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.916297 Latitude/Northing: 44.749326

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Small area with shallow water depth likely drys in late spring Small area, vegetation

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 6 ○ m ◉ ft Length: 15 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ◉ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: _____

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ○ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander	7	1		3	3			A							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in shrub and herbaceous community. 7 yellow spotted e.m., 2Vdone 1 mass in rutted area very dry in field

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RP-190503-02 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Ray Peck

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: ____ Phone: ____

Street Address: ____ City: ____ State: _ Zip: _

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.921981 Latitude/Northing: 44.779229

Coordinate system: WGS84

Check one:

☐ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Small area with shallow water depth likely drys in late spring Shallow, vegetation

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: __ ○ m ◉ ft Length: __ ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ◉ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-3, 2019-5-24

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ○ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander	3			3											
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community. Intermittent stream

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RP-190503-03 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Ray Peck

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: ____ Phone: ____

Street Address: ____ City: ____ State: _ Zip: _

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: ____

Brief site directions to the pool (using mapped landmarks):

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.921857 Latitude/Northing: 44.77911

Coordinate system: WGS84

Check one:

☐ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Fed by seeps or spring Vegetation, depth, ephemeral inlet

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: __ ○ m ◉ ft Length: __ ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ◉ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-3, 2019-5-24

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ○ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander	7			3											
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community. Floodplain backwater channel

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: V-RP-190503-04 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Ray Peck

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Dana Valleau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Apex, Downeast Wind

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Neil Tenan Phone: ____

Street Address: 359 Willey District Rd City: Cherryfield State: ME Zip: 04622

c. ☑ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Cherryfield

Brief site directions to the pool (using mapped landmarks):

Rfc nmmj gq qgrs_rcb hsqr ucqr md Njc_q_lr Pgtcp* _nnpmvg k _rcjw m l c k gjc l mprf md Jm l e Nm l b,

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.9218506 Latitude/Northing: 44.7788039

Coordinate system: WGS84

Check one:

☒ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

☐ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

☐ The above GPS point is at the center of the pool. (Good)

☐ The center of the pool is approximately____ ○ m ○ ft in the compass direction of degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool **(required):**

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box **(required):**

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Large area with deep water levels Depth and vegetation

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 5 ○ m ◉ ft Length: 25 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☑ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ◉ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain):_____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 2019-5-3, 2019-5-24

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ○ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	62			3			F								
Spotted Salamander	40			3			F								
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Small area of suitable vernal pool habitat in forested community. 2Vdone, most masses hatched, river backwater

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_15CF **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Jeanna Leclerc, Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: _____ Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Cherryfield, take Route 1 east toward Columbia Falls. Take Station Road north to eastern end of transmission line and substation. Pool is located west of existing substation.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.780008 Latitude/Northing: 44.673584

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 35 ○ m ◉ ft Length: 50 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017, 05/10/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	2	0		3	3		F	H					3	3	
Spotted Salamander	0	25		3	3			M					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with significant breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_13JL **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Jeanna Leclerc, Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T18 MD BPP

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Schoodic Road through the blueberry barons. Pool is located on west side of Schoodic Road in the northern portion of Project site.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.922112 Latitude/Northing: 44.73422

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Irrigation pipe observed on west edge of pool. No observable change in hydrology or man-made activity in pool.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Forested wetland, with sparsely vegetated concave depression. Soils somewhat well drained. No indicators of prolonged inundation present.

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 75 ○ m ◉ ft Length: 75 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/24/2017, 05/10/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0	0		3	3								3	3	
Spotted Salamander	19	22		3	3		M	M					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural depression in large forested wetland, adjacent to upland forested area.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are <u>required</u> for pool registration.**
- **<u>Clear photographs</u> of a) the pool AND b) the indicators (one example of each species egg mass) are <u>required</u> for all observers.**

Observer's Pool ID: VP_14JL **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Jeanna Leclerc, Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: _____ Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Cherryfield, take Route 1 east toward Harrington. Take George Town Woods Road north to western end of transmission line. Pool is located in the western end of the proposed transmission line corridor.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.820125 Latitude/Northing: 44.669445

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

High water table

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 15 ○ m ◉ ft Length: 30 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ◉ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2016, 05/10/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0	0		3	3								3	3	
Spotted Salamander	7	13		3	3		M	M					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with high water table.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_18JL **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Jeanna Leclerc, Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T18 MD BPP

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Schoodic Road through the blueberry barons. Pool is on the west side of Schoodic Road in the northern portion of the Project.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.907195 Latitude/Northing: 44.726088

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Wetland contains mineral soil substrate

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 100 ○ m ◉ ft Length: 60 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ◉ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017, 05/10/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0	1		3	3			H			X		3	3	
Spotted Salamander	8	21		3	3		M	M					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with significant breeding activity observed on the second visit.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are <u>required</u> for pool registration.**
- **<u>Clear photographs</u> of a) the pool AND b) the indicators (one example of each species egg mass) are <u>required</u> for all observers.**

Observer's Pool ID: SVP_19JL **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Jeanna Leclerc, Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T18 MD BPP

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Schoodic Road through the blueberry barons. Pool is located on west side of Schoodic Road.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.906875 Latitude/Northing: 44.725791

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

mineral soil substrate

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 150 ○ m ◉ ft Length: 75 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017, 05/10/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0	34		3	3			H					3	3	
Spotted Salamander	0	20		3	3			M					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with significant breeding activity. Pool was not surveyed on the first visit because it was determined to be located outside of survey area.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: VP_20JL **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Jeanna Leclerc, Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T18 MD BPP

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Schoodic Road through blueberry barrens. Pool is on the west side of Schoodic Road in northern portion of Project.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.908735 Latitude/Northing: 44.725494

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

part of an old beaver pond

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

mineral soil substrate

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 ○ m ◉ ft Length: 35 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ◉ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0	0		3									3		
Spotted Salamander	3	2		3			M	M					3		
Blue-spotted Salamander	0	0		3									3		
Fairy Shrimp[3]	0	0		3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: VP_21JL **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Jeanna Leclerc, Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T18 MD BPP

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Schoodic Road through blueberry barrens. Pool is on the east side of Schoodic Road in northern portion of Project.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.903279 Latitude/Northing: 44.725889

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Wetland contains mineral soil substrate

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 200 ○ m ◉ ft Length: 75 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/26/2017, 05/10/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	10	7		3	3		F	H			X		3	3	
Spotted Salamander	0	0		3	3								3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_22TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ○ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Pea Ridge Road. Turn east on Pea Ridge Road. Pool is located on north side of Pea Ridge Road near the eastern end of the Project.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.814523 Latitude/Northing: 44.679795

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☑ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

shallow water at time of survey

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 50 ○ m ◉ ft Length: 30 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ◉ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/24/2017, 05/10/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	5	14		3	3		F	H					3	3	
Spotted Salamander	0	28		3	3			F					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with significant breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_23TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ○ Yes

c. Project Name: Downeast Wind project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Pea Ridge Road. Pool is on the north side of Pea Ridge Road between Schoodic Road and Ell Meadow Road.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.862264 Latitude/Northing: 44.675947

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Impounded by road that bisects the wetland

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: _____ ○ m ○ ft Length: _____ ○ m ○ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/24/2017,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	43			3			A						3		
Spotted Salamander	23			3			F						3		
Blue-spotted Salamander	30			3			A						3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural/Modified pool with significant breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_24TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Pea Ridge Road. Pool is on the north side of Pea Ridge Road between Schoodic Road and Ell Meadow Road.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.862436 Latitude/Northing: 44.675426

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Road bisects the wetland on north of the pool. Pool appears to be a natural depression.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: _____ ○ m ○ ft Length: _____ ○ m ○ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/24/2017,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	65			3			A						3		
Spotted Salamander	0			3									3		
Blue-spotted Salamander	0			3									3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural/Modified pool with significant breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_25TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ○ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: _____ Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Cherryfield, take Route 1east toward Harrington. Take George Town Woods Road north to western end of transmission line. Pool is located near the western end of the proposed transmission line corridor.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.816355 Latitude/Northing: 44.668584

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☑ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ATV trail crosses wetland through pool

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

groundwater present

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: _____ ○ m ○ ft Length: _____ ○ m ○ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ◉ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	1			3			A						3		
Spotted Salamander	21			3			F						3		
Blue-spotted Salamander	0			3									3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with significant breeding activity and ATV trail crossing through portion.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: VP_27TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: _____ Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Cherryfield, take Route 1east toward Harrington. Take George Town Woods Road north to western end of transmission line. Pool is located near the western end of the proposed transmission line corridor.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.813876 Latitude/Northing: 44.66856

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

depression in wetland with lack of vegetation in pool

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 15 ○ m ◉ ft Length: 8 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☑ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0	0		3	3								3	3	
Spotted Salamander	5	10		3	3		F	M					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are <u>required</u> for pool registration.**
- **<u>Clear photographs</u> of a) the pool AND b) the indicators (one example of each species egg mass) are <u>required</u> for all observers.**

Observer's Pool ID: VP_32TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: _____ Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Cherryfield, take Route 1 east toward Harrington. Take George Town Woods Road north to western end of transmission line. Pool is located in the middle of the proposed transmission line corridor.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.804241 Latitude/Northing: 44.669597

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☑ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ◉ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Potentially caused by clearing activities

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

relatively shallow water

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 15 ○ m ◉ ft Length: 8 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017, 05/11/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0	0		3	3								3	3	
Spotted Salamander	3	4		3	3		F	A					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Man-made pool with breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are <u>required</u> for pool registration.**
- **<u>Clear photographs</u> of a) the pool AND b) the indicators (one example of each species egg mass) are <u>required</u> for all observers.**

Observer's Pool ID: VP_45TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: _____ Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Cherryfield, take Route 1 east toward Columbia Falls. Take Station Road north to eastern end of transmission line and substation. Pool is located adjacent to the substation.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.780002 Latitude/Northing: 44.674021

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

mineral soil substrate

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 ○ m ◉ ft Length: 25 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017, 05/11/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	15	0		3	3		F						3	3	
Spotted Salamander	1	63		3	3		F	M					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with significant breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_46TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Colunbia

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Pea Ridge Road through the blueberry barrens. Pool is located on north side of Pea Ridge Road between Schoodic Road and Ell Meadow Road.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.859329 Latitude/Northing: 44.681186

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- [x] Forested swamp
- [x] Shrub swamp
- [ ] Peatland (fen or bog)
- [ ] Emergent marsh
- [ ] Wet meadow
- [ ] Lake or pond cove
- [ ] Abandoned beaver flowage
- [ ] Active beaver flowage
- [ ] Slow stream
- [ ] Floodplain
- [ ] Mostly unvegetated pool
- [ ] ATV or skidder rut
- [ ] Dug pond or borrow pit
- [ ] Roadside ditch
- [ ] Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (•) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

Forested wetland with mineral soils.

■ Maximum depth at survey: (•) 0-12" (0-1 ft.) ( ) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 100 ( ) m (•) ft Length: 100 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- (•) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- ( ) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- [ ] Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- [ ] Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- [ ] Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- [ ] Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- [ ] Sphagnum moss (anchored or suspended)
- [ ] Wet site ferns (e.g. royal fern, marsh fern)
- [x] Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- [x] Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- [ ] Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- [ ] Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- [ ] No vegetation in pool

■ Faunal indicators (check all that apply):

- [ ] Fish
- [ ] Bullfrog or Green Frog tadpoles
- [ ] Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0			3									3		
Spotted Salamander	32			3			F						3		
Blue-spotted Salamander	6			3			M						3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural depression in upland forested area.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_47TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ○ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Schoodic Road through the blueberry barrens. Pool is located on west side of Schoodic Road.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.874662 Latitude/Northing: 44.672277

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Wetland and pool fed by consistent groundwater supply

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 10 ○ m ◉ ft Length: 5 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☑ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017, 05/10/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0	0		3	3								3	3	
Spotted Salamander	7	21		3	3		F	M					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with significant breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: VP_48TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Schoodic Road through blueberry barons. Pool is on the west side of Schoodic Road.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.8874604 Latitude/Northing: 44.672319

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ◉ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Wetland and pool fed by consistent supply of groundwater

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 5 ○ m ◉ ft Length: 7 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☑ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017, 05/10/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0	0		3	3								3	3	
Spotted Salamander	3	3		3	3		F	M					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_49TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Pea Ridge Road through the blueberry barrens. Pool is on the north side of Pea Ridge Road between Schoodic Road and Ell Meadow Road.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.860097 Latitude/Northing: 44.684771

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Wetland contains mineral soil substrate

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ◉ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 100 ○ m ◉ ft Length: 50 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	134			3			F						3		
Spotted Salamander	195			3			F						3		
Blue-spotted Salamander	0			3									3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with very significant breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are <u>required</u> for pool registration.**
- **<u>Clear photographs</u> of a) the pool AND b) the indicators (one example of each species egg mass) are <u>required</u> for all observers.**

Observer's Pool ID: VP_50TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ○ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T18 MD BPP

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Pea Ridge Road through the blueberry barons. Pool is located on north side of Pea Ridge Road between Schoodic Road an Ell Meadow Road.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.853542 Latitude/Northing: 44.679003

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Wetland contains mineral soil substrate.

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 8 ○ m ◉ ft Length: 4 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017, 05/10/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0	0		3	3								3	3	
Spotted Salamander	2	10		3	3		F	M					3	3	
Blue-spotted Salamander	0	0		3	3								3	3	
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural depression in upland forested area.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_51TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T18 MD BPP

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Schoodic Road through the blueberry barons. Pool is on the west side of Schoodic Road in the northern portion of the Project.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.908013 Latitude/Northing: 44.710976

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ◉ Isolated depression
- ○ Floodplain depression
- ○ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Wetland contains a mineral soil substrate.

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 50 ○ m ◉ ft Length: 40 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	111			3			M						3		
Spotted Salamander	2			3			F						3		
Blue-spotted Salamander	0			3									3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with significant breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: VP_52TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: T18 MD BPP

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Schoodic Road through the blueberry barrens. Pool is located on west side of Schoodic Road near the northern portion of the Project.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.907255 Latitude/Northing: 44.710694

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☑ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

small size with shallow water

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 6 ○ m ◉ ft Length: 4 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ◉ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/25/2017,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	18			3			M						3		
Spotted Salamander	0			3									3		
Blue-spotted Salamander	0			3									3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural depression with breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are <u>required</u> for pool registration.**
- **<u>Clear photographs</u> of a) the pool AND b) the indicators (one example of each species egg mass) are <u>required</u> for all observers.**

Observer's Pool ID: SVP_53TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Pea Ridge Road. Pool is on the north side of Pea Ridge Road between Schoodic Road and Ell Meadow Road.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.862239 Latitude/Northing: 44.688345

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- (•) Isolated depression
- ( ) Floodplain depression
- ( ) Pool associated with larger wetland complex
- ( ) Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☑ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: (•) Natural ( ) Natural-Modified ( ) Unnatural ( ) Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ( ) Permanent
- ( ) Semi-permanent (drying partially in all years and completely in drought years)
- (•) Ephemeral (drying out completely in most years)
- ( ) Unknown

Explain:

shallow depth and terrestrial vegetation throughout

■ Maximum depth at survey: ( ) 0-12" (0-1 ft.) (•) 12-36" (1-3 ft.) ( ) 36-60" (3-5 ft.) ( ) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 100 ( ) m (•) ft Length: 100 ( ) m (•) ft

■ Predominate substrate in order of increasing hydroperiod:

- ( ) Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ( ) Mineral soil (sphagnum moss present)
- (•) Organic matter (peat/muck) shallow or restricted to deepest portion
- ( ) Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☑ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- (•) No inlet or outlet
- ( ) Intermittent inlet or outlet
- ( ) Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ( ) Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 04/26/2017,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	152			3			A						3		
Spotted Salamander	17			3			F						3		
Blue-spotted Salamander	92			3			M						3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with very significant breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: VP_55TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ○ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: _____ Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Cherryfield, take Route 1 toward Columbia Falls. Take Station Road north to eastern end of transmission line and substation. Pool is located west of the existing substation.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.780129 Latitude/Northing: 44.67325

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

mineral soil substrate

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 ○ m ◉ ft Length: 30 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 05/11/2017,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0			3									3		
Spotted Salamander	4			3			F						3		
Blue-spotted Salamander	0			3									3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_58TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ○ Yes

c. Project Name: Downeast Wind project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Cherryfield Properties LLC. Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Route 1 in Cherryfield, head north on Route 193 to Ridge Road. Take Ridge Road north to Pea Ridge Road. Pool is on the north side of Pea Ridge Road between Schoodic Road and Ell Meadow Road.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.854689 Latitude/Northing: 44.676658

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ◉ Isolated depression
- ○ Floodplain depression
- ○ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Wetland contains a mineral substrate

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: _____ ○ m ◉ ft Length: _____ ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☑ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 06/28/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0			3			H			X			3		
Spotted Salamander	57			3			A						3		
Blue-spotted Salamander	0			3									3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with significant breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: VP_59TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: _____ Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Cherryfield, take Route 1 east toward Columbia Falls. Take Station Road north to eastern end of transmission line and substation. Pool is located west of the existing substation.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.78138 Latitude/Northing: 44.674377

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

shallow water, mineral soil substrate

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 6 ○ m ◉ ft Length: 6 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 06/28/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0			3									3		
Spotted Salamander	8			3			H						3		
Blue-spotted Salamander	0			3									3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: SVP_60TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ○ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: _____ Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Cherryfield, take Route 1 toward Columbia Falls. Take Station Road north to eastern end of transmission line and substation. Pool is located west of the existing substation.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.782158 Latitude/Northing: 44.674908

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

shallow water, mineral soil substrate.

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: _____ ○ m ◉ ft Length: _____ ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ◉ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 06/28/2017

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0			3									3		
Spotted Salamander	35			3			H						3		
Blue-spotted Salamander	0			3									3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☑ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with significant breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: VP_61TT **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Tom Tetreau

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ○ same as observer ◉ other Stantec Consulting

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Downeast Wind Project

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: _____ Phone: _____

Street Address: _____ City: _____ State: _____ Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Columbia

Brief site directions to the pool (using mapped landmarks):

From Cherryfield, take Route 1 east toward Columbia Falls. Take Station Road north to eastern end of transmission line and substation. Pool is located west of existing substation.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -67.781474 Latitude/Northing: 44.672227

Coordinate system: NAD83

Check one:

◉ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☑ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☐ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

shallow water

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: _____ ○ m ◉ ft Length: _____ ○ m ◉ ft

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- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
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- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☑ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ◉ No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 06/28/2016,

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0			3									3		
Spotted Salamander	5			3			H						3		
Blue-spotted Salamander	0			3									3		
Fairy Shrimp[3]	0			3											

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

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SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Natural pool with breeding activity.

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

ATTACHMENT C

Vernal Pool Photolog

Attachment C: Vernal Pool Photographic Log

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #1 **Date**: 4/30/2019 **ID**: V-DC-190430-01 **Comments**:	
Photo: #2 **Date**: 4/30/2019 **ID**: V-DC-190430-02 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #3 **Date**: 5/02/2019 **ID**: V-DC-190502-01 **Comments**:	
Photo: #4 **Date**: 5/03/2019 **ID**: V-DC-190503-01 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #5 **Date**: 05/03/2019 **ID**: V-DC-190503-02 **Comments**:	
Photo: #6 **Date**: 5/23/2019 **ID**: V-DC-190523-01 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #7 **Date**: 5/03/2019 **ID**: V-JB-190503-01 **Comments**:	
Photo: #8 **Date**: 5/03/2019 **ID**: V-JB-190503-03 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #9 **Date**: 5/02/2019 **ID**: V-JR-190502-01 **Comments**:	
Photo: #10 **Date**: 5/03/2019 **ID**: V-JR-190503-01 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #11 **Date**: 5/22/2019 **ID**: V-JR-190522-01 **Comments**:	
Photo: #12 **Date**: 5/22/2019 **ID**: V-JR-190522-01 **Comments**: Advanced WF egg masses	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #13 **Date**: 4/29/2019 **ID**: V-RJ-190429-01 **Comments**:	
Photo: #14 **Date**: 4/30/2019 **ID**: V-RJ-190430-01 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #15 **Date**: 4/30/2019 **ID**: V-RJ-190430-04 **Comments**:	
Photo: #16 **Date**: 4/30/2019 **ID**: V-RJ-190430-05 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #17 **Date**: 4/30/2019 **ID**: V-RJ-190430-06 **Comments**:	
Photo: #18 **Date**: 4/30/2019 **ID**: V-RJ-190430-07 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #19 **Date**: 4/30/2019 **ID**: V-RJ-190430-08 **Comments**:	
Photo: #20 **Date**: 5/01/2019 **ID**: V-RJ-190501-01 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #21 **Date**: 5/01/2019 **ID**: V-RJ-190501-02 **Comments**:	
Photo: #22 **Date**: 5/01/2019 **ID**: V-RJ-190501-03 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #23 **Date**: 5/01/2019 **ID**: V-RJ-190501-04 **Comments**:	
Photo: #24 **Date**: 5/01/2019 **ID**: V-RJ-190501-05 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #25 **Date**: 5/01/2019 **ID**: V-RJ-190501-06 **Comments**:	
Photo: #26 **Date**: 5/02/2019 **ID**: V-RJ-190502-01 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #27 **Date**: 4/30/2019 **ID**: V-RP-190430-02 **Comments**:	
Photo: #28 **Date**: 4/30/2019 **ID**: V-RP-190430-04 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #29 **Date**: 4/30/2019 **ID**: V-RP-190430-08 **Comments**:	
Photo: #30 **Date**: 4/30/2019 **ID**: V-RP-190430-08 **Comments**: SS egg masses	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #31 **Date**: 5/02/2019 **ID**: V-RP-190502-01 **Comments**:	
Photo: #32 **Date**: 5/03/2019 **ID**: V-RP-190503-02 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #33 **Date**: 5/03/2019 **ID**: V-RP-190503-02 **Comments**: SS egg mass	
Photo: #34 **Date**: 5/03/2019 **ID**: V-RP-190503-03 **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #35 **Date**: 5/03/2019 **ID**: V-RP-190503-04 **Comments**:	
Photo: #36 **Date**: 5/10/2017 **ID**: SVP-15cf **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #37 **Date**: 5/10/2017 **ID**: SVP-13jl **Comments**:	
Photo: #38 **Date**: 5/10/2017 **ID**: SVP-14jl **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #39 **Date**: 5/10/2017 **ID**: SVP-18jl **Comments**:	
Photo: #40 **Date**: 5/10/2017 **ID**: SVP-19jl **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #41 **Date**: 5/10/2017 **ID**: VP-20jl **Comments**:	
Photo: #42 **Date**: 5/10/2017 **ID**: VP-21jl **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #43 **Date**: 4/24/2017 **ID**: SVP-22tt **Comments**:	
Photo: #44 **Date**: 4/24/2017 **ID**: SVP-23tt **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #45 **Date**: 4/24/2017 **ID**: SVP-23tt **Comments**: Blue spotted salamander egg mass	
Photo: #46 **Date**: 4/24/2017 **ID**: SVP-24tt **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #47 **Date**: 4/25/2017 **ID**: SVP-25tt **Comments**:	
Photo: #48 **Date**: 4/25/2017 **ID**: VP-27tt **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #49 **Date**: 4/25/2017 **ID**: VP-32tt **Comments**:	
Photo: #50 **Date**: 4/25/2017 **ID**: SVP-45tt **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #51 **Date**: 4/25/2017 **ID**: SVP-46tt **Comments**:	
Photo: #52 **Date**: 4/25/2017 **ID**: SVP-47tt **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #53 **Date**: 4/25/2017 **ID**: VP-48tt **Comments**:	
Photo: #54 **Date**: 4/25/2017 **ID**: SVP-49tt **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #55 **Date**: 4/25/2017 **ID**: VP-50tt **Comments**:	
Photo: #56 **Date**: 4/25/2017 **ID**: SVP-51tt **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #57 **Date**: 4/25/2017 **ID**: VP-52tt **Comments**:	
Photo: #58 **Date**: 4/25/2017 **ID**: SVP-53tt **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #59 **Date**: 4/25/2017 **ID**: VP-55tt **Comments**:	
Photo: #60 **Date**: 6/28/2017 **ID**: SVP-58tt **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #61 **Date**: 6/28/2017 **ID**: VP-59tt **Comments**:	
Photo: #62 **Date**: 6/28/2017 **ID**: SVP-60tt **Comments**:	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #63 **Date**: 6/28/2017 **ID**: VP-61tt **Comments**:	
Photo: #64 **Date**: 11/06/2020 **ID**: PVP-SLG-2 **Comments**: Potential vernal pool surveyed outside of the vernal pool season	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #65 **Date**: 11/06/2020 **ID**: PVP-SLG-3 **Comments**: Potential vernal pool surveyed outside of the vernal pool season	
Photo: #66 **Date**: 11/10/2020 **ID**: PVP-SLG-4 **Comments**: Potential vernal pool surveyed outside of the vernal pool season	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #67 **Date**: 11/10/2020 **ID**: PVP-SLG-5 **Comments**: Potential vernal pool surveyed outside of the vernal pool season	
Photo: #68 **Date**: 11/11/2020 **ID**: PSVP-SLG-8 **Comments**: Potential vernal pool surveyed outside of the vernal pool season	

Vernal Pool Survey Report – Downeast Wind Project	
Photo: #69 **Date**: 5/03/2019 **ID**: PSVP-MJT-01 **Comments**: Potential vernal pool surveyed outside of the vernal pool season	
Photo: #70 **Date**: 11/12/2020 **ID**: PSVP-MJT-001 **Comments**: Potential vernal pool surveyed outside of the vernal pool season	

EXHIBIT 7-3: NOCTURNAL MIGRATION RADAR REPORT

Nocturnal Migration Radar Report Downeast Wind Project - September 2015 to October 2016

Washington County, Maine



Prepared by:
Stantec Consulting Services Inc.
30 Park Drive
Topsham, ME 04086

March 2017

BUSINESS CONFIDENTIAL



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Executive Summary

Stantec Consulting Services Inc. (Stantec) conducted nocturnal migration radar (radar) surveys for the proposed Downeast Wind Project (DOW or Project) in Washington County, Maine. Radar surveys were completed as part of pre-construction planning efforts in accordance with the Maine Department of Inland Fisheries and Wildlife's *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (June 2015), the US Fish and Wildlife Service's *Land-Based Wind Energy Guidelines* (March 2012), the Project Work Plan dated 17 March 2016, and methods similar to those employed at other wind energy projects in Maine and the Northeast. The objective of the nocturnal radar migration surveys is to document patterns of nocturnal migrants at the Project.

Stantec conducted 3 seasons of radar surveys in fall 2015, spring 2016, and fall 2016 from a central location in the Project area. Stantec surveyed nighttime hours on 20 nights within each of the 3 seasons. During each survey period the radar operated in 2 modes (surveillance [horizontal] and vertical mode). Continuous images produced by the radar were recorded and archived as videos. The videos were visually reviewed to identify and select targets (migrants) and their flight paths, resulting in location, flight height, and flight direction data for each target. Mean hourly, nightly, and seasonal passage rates and flight heights were calculated, as well as seasonal mean flight direction and percent below maximum turbine blade tip height (183 meters [m]).

The radar survey resulted in a total of 643 survey hours (hrs; 227 hrs in fall 2015, 189 hrs in spring 2016 and 227 hrs in fall 2016). The seasonal mean passage rates were 920 ± 52 targets/kilometer/hour (t/km/hr; fall 2015), 469 ± 39 t/km/hr (spring 2016), and 486 ± 30 t/km/hr (fall 2016). The seasonal mean flight height of targets was 428 ± 1 m (1,404 feet ft; fall 2015), 384 ± 2 m (1,261 ft; spring 2016), and 465 ± 1 m (1,526 ft; fall 2016). The seasonal mean flight direction was 255° ± 66° (fall 2015), 68° ± 47° (spring 2016) and 252° ± 73° (fall 2016).

Peak migrant activity occurred in mid- to late September in both fall seasons and in early- to mid-May in the spring season. Seasonal mean flight heights in all seasons were > 200 m above the maximum blade-tip height of the proposed turbines. The mean seasonal passage rate in fall 2015 was nearly double that in fall 2016, indicating yearly variation in levels of nocturnal migration at DOW.

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) conducted nocturnal migration radar (radar) surveys for the proposed Downeast Wind Project (DOW or Project) in Washington County, Maine. Radar surveys were completed as part of pre-construction planning efforts for DOW in accordance with the Maine Department of Inland Fisheries and Wildlife's *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (MDIFW Recommendations; June 2015), the US Fish and Wildlife Service's *Land-Based Wind Energy Guidelines* (March 2012), the Project Work Plan dated 17 March 2016, and methods similar to those employed at other wind energy projects in Maine and the Northeast. The objective of the nocturnal radar migrations surveys was to document patterns of nocturnal migrants at the Project.

2.0 METHODS

Stantec conducted 3 seasons of radar surveys in fall 2015, spring 2016, and fall 2016. This section describes the field survey and data analysis methods.

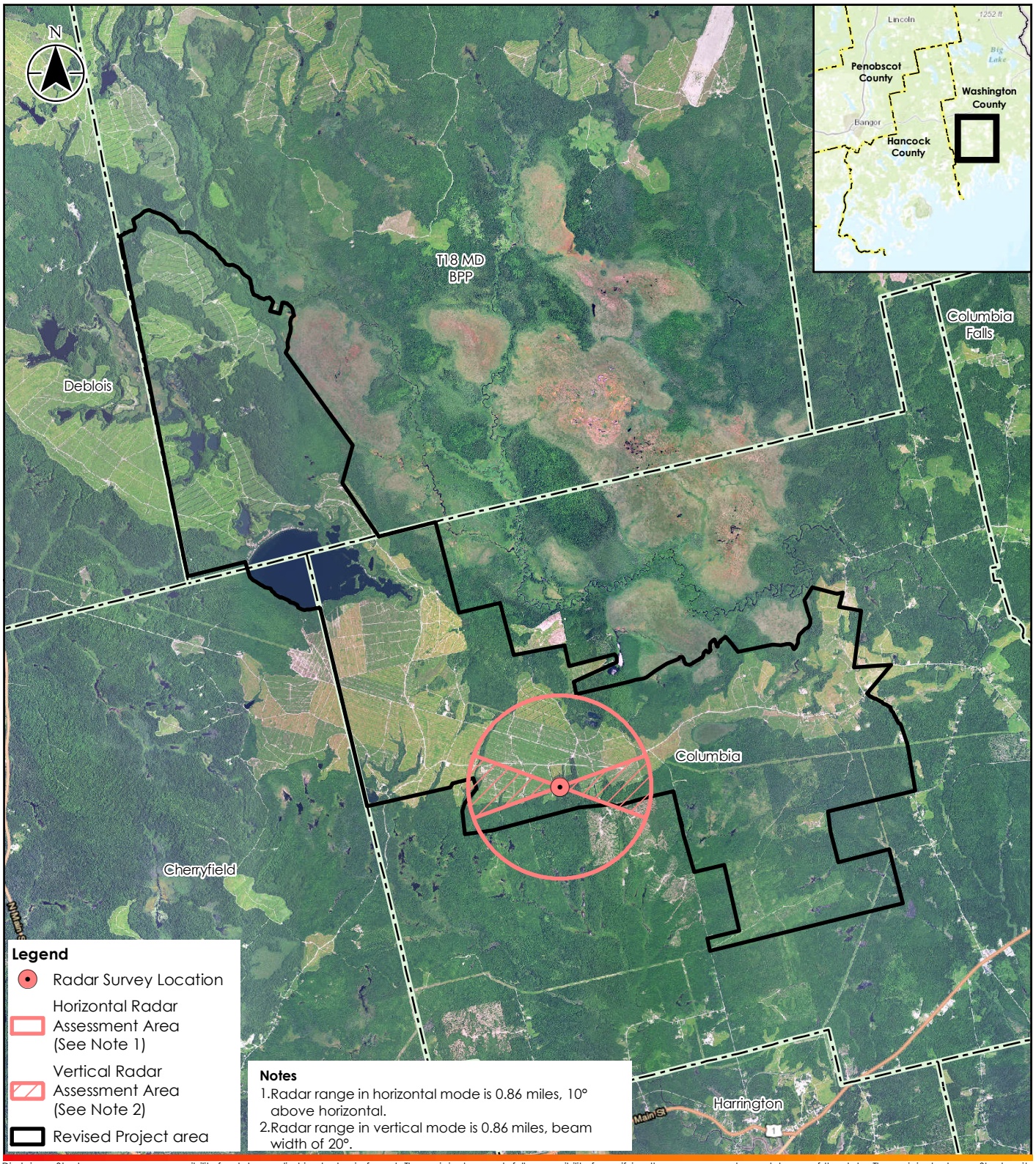
2.1 FIELD SURVEYS

2.1.1 Deployment

An X-band marine surveillance radar unit was deployed in a central location in the project within an open sand pit (Figure 2-1). The radar system collects data in 2 positions: vertical and horizontal. The vertical scanning radar data provides altitude information on targets up to an altitude of 1.39 km (0.86 mi) by scanning the area within a 20 degree wide beam that moves from horizon to horizon (Figures 2-1, 2-2 and 2-3). The vertical scanning radar was positioned in an east-west direction, approximately perpendicular to the anticipated flightpaths of migrating birds in this region (Figure 2-1). The horizontal radar provides passage rate and flight direction information and scans an area of 10 degrees above the horizontal in all directions out to 1.39 km (0.86 mi) from the unit (Figures 2-1 and 2-3). A setting on the radar unit was activated to record target echos for 30 seconds. This allowed for manual delineation of target echos to determine target flight direction.

Surrounding trees and other landscape features partially obstruct ground-based radar views, causing ground clutter. At DOW, the radar unit antenna was elevated up to 10 meters (m) above ground level to maximize the airspace sampled, and the unit itself was deployed close to surrounding trees which masked the 10-degree beam below the horizontal. Both the radar unit location and antenna elevation limited ground clutter to approximately 8% of the horizontal scanning view. This is well below the ground clutter maximum allowed of 30% under the MDIFW Recommendations, resulting in thorough evaluation of airspace within the sample area (Figure 2-4).

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Stantec

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Prepared by GAC on 2017-02-17
Reviewed by SBG on 2017-02-17

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Client/Project
Downeast Wind Project
Washington County, Maine

Figure No.
2-1

Title
Radar Survey Location, 2015 - 2016
3/3/2017

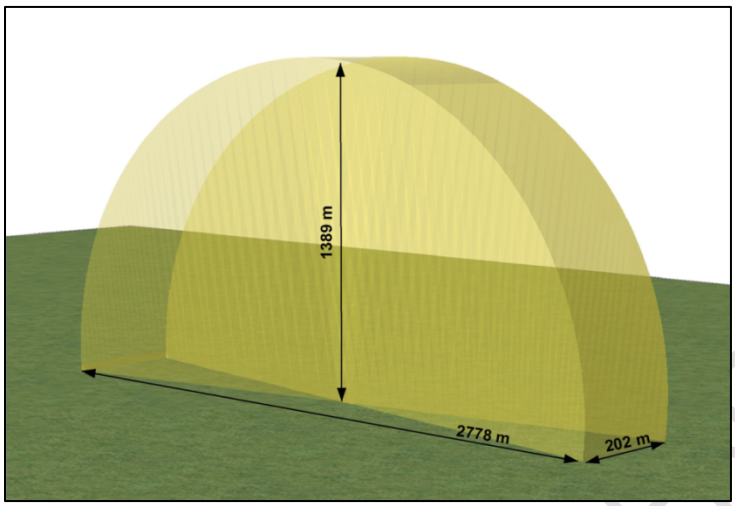


Figure 2-2. Detection Range of the radar in vertical mode

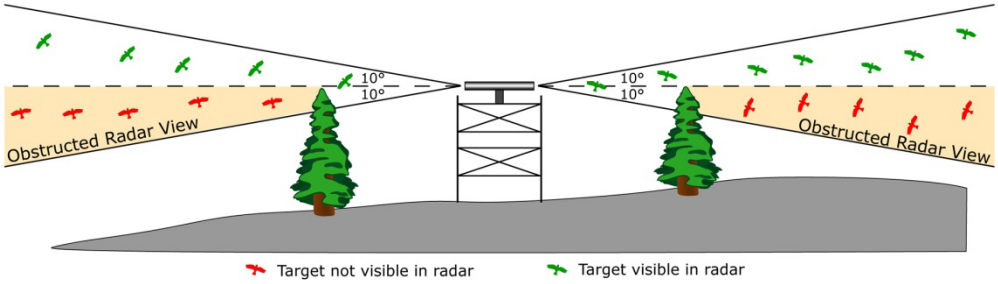


Figure 2-3. Example of obstructed and unobstructed radar views in horizontal mode.



Figure 2-4. Radar location for all three survey seasons, Downeast Wind Project, 2015-2016

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2.1.2 Data Collection

Survey nights were selected based on weather forecast predictions (i.e., nights with no predicted fog or precipitation, calm or following winds, and moderate temperatures) to focus sampling on nights expected to be optimal for migration. Suboptimal nights, i.e., nights with predicted fog, precipitation, strong winds, and/or unusually high or low temperatures, were sampled at a lower frequency than optimal nights.

The radar operated continuously from sunset to sunrise on survey nights. The radar operated for 30 minutes in horizontal mode and 30 minutes in vertical mode during each survey hour. Images produced by the radar were recorded and archived as videos.

2.2 DATA SUMMARY AND ANALYSIS

2.2.1 Radar Data

From each hour of operation, 6 one-minute horizontal samples and 6 one-minute vertical samples were randomly selected for visual analysis. The horizontal videos were visually reviewed to identify and select targets (migrants) and their flight paths, resulting in location and flight direction data for each target. The vertical videos were visually reviewed to identify and select targets resulting in flight height data for each target. Data were summarized using programs and macros designed by Stantec. Mean hourly, nightly, and seasonal passage rates and flight heights were calculated. Passage rate was calculated by extrapolating the number of targets from the 6, 1-minute horizontal samples to the entire hour (i.e., multiplying by 60), then dividing the total number of targets per hour by the diameter of the radar sampling range (2.8 km [1.7 mi]). Nightly and seasonal mean flight direction and percent of targets below maximum turbine blade tip height (183 m) were calculated.

2.2.2 Weather Data

Stantec obtained and used various weather parameters to assess relationships between nocturnal migration patterns and weather conditions. Weather variables were recorded by sensors on the onsite Project met tower. Ambient temperature was obtained from the 5 m sensor, wind direction was obtained from the 30 m sensor, and wind speed was obtained from the 59 m sensor. Data was reported at 10-minute intervals; therefore, Stantec calculated mean nightly temperature, wind direction and wind speed for each survey night.

Visibility and fog occurrence data during nighttime hours (sunset to sunrise) were obtained from the KBHB weather station via Weather Underground (wunderground.com). To determine whether fog was possible we calculated the difference between the temperature and dew point for nighttime hours as reported by the KBHB station (if the difference was < 1°C, and humidity was > 94%, we indicated that fog was possible). To determine the timing of pressure system movement in the region (high, low, or none), we downloaded and interpreted regional

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surface weather map images prepared by the National Centers for Environmental Prediction, the Hydro-meteorological Prediction Center, and the National Weather Service.

3.0 RESULTS

3.1 SURVEY EFFORT AND WEATHER SUMMARY

Twenty nights were sampled within each of the 3 seasons for a total of 643 survey hours (hrs) across 60 nights: 227 hrs in fall 2015, 189 hrs in spring 2016 and 227 hrs in fall 2016 (Table 3-1). Fall survey nights were longer than spring survey nights (11– 12 hours in fall, 9 – 10 hours in spring) due to shorter daylight hours in fall. Nightly sky conditions in each season ranged from clear to overcast; however, the majority (58%; n = 35) of survey nights were clear or mostly clear.

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Table 3-1. Survey effort and weather summary for radar surveys, Downeast Wind Project, 2016.

Season	Night of	# of Hours Analyzed	Mean Temperature (°C)[1]	Mean Wind Speed (meters/second)[1]	Mean Wind Direction (degrees)[1]	Overall Visibility[2]	Fog Possible (Y/N)[3]	Fog Occurred (Y/N)[2]
Fall 2015	9/9	11	20	5	128	clear, partly cloudy	Y	N
	9/16	12	18	5	154	clear	Y	N
	9/17	12	18	6	191	clear	Y	N
	9/18	12	15	6	46	clear	Y	N
	9/21	12	10	3	45	clear	Y	N
	9/23	12	13	7	291	clear	Y	N
	9/24	12	8	7	1	clear	N	N
	10/1	12	8	8	27	clear, partly cloudy	Y	N
	10/2	12	7	8	38	mostly cloudy	N	N
	10/5	12	3	3	346	partly cloudy PM, clear AM	Y	N
	10/6	12	7	6	252	clear	Y	N
	10/7	11	9	7	249	partly cloudy PM, clear AM	Y	N
	10/8	12	5	6	357	clear	Y	N
	10/13	12	14	6	67	overcast	Y	N
	10/14	6	7	6	232	partly cloudy, overcast	Y	N
	10/20	10	7	7	272	mostly cloudy	Y	N
	10/21	11	4	6	195	clear, PM, overcast AM	Y	N
	10/26	12	1	1	2	clear	Y	N
	10/29	11	9	9	142	overcast PM, clear AM	N	N
	10/30	11	1	7	220	clear	N	N
	Entire Season	**227**	**9**	**6**	**163**			
Fall 2016	8/15	10	15	4	259	overcast PM, clear AM	Y	N
	8/22	10	12	8	223	clear	N	N
	8/23	10	15	7	130	clear	N	N
	8/24	10	17	7	61	clear	Y	N
	8/30	11	16	5	137	overcast, mostly cloudy	N	N
	9/15	12	8	3	95	overcast	no data	no data
	9/16	11	12	7	39	partly cloudy	no data	no data
	9/21	12	15	7	175	clear	no data	no data
	9/22	11	15	6	268	clear PM, overcast/rain AM	no data	no data
	9/26	12	9	7	66	clear	no data	no data
	9/27	12	10	6	63	overcast	no data	no data
	9/28	12	8	8	46	overcast, clear AM	no data	no data
	10/4	12	4	3	204	clear PM, overcast/mist AM	Y	Y
	10/5	12	8	6	191	clear, mostly cloudy AM	Y	N
	10/10	11	4	7	284	clear	N	N
	10/11	12	7	5	94	clear	Y	N
	10/12	11	10	6	356	mostly cloudy, overcast	Y	N
	10/19	12	9	6	317	clear	N	N
	10/25	12	3	6	276	overcast	N	N
	10/26	12	2	6	12	overcast, partly cloudy	N	N
	Entire Season	**227**	**10**	**6**	**165**			
Spring 2016	4/24	10	2	6	193	clear	N	N
	4/25	10	0	6	350	clear	N	N
	4/26	10	-1	7	197	clear	Y	N
	4/27	10	1	7	290	overcast PM, clear AM	N	N
	4/28	10	-2	5	58	clear	N	N
	4/29	10	1	6	224	clear	Y	N
	4/30	10	3	6	190	clear	Y	N
	5/1	10	6	4	302	overcast	N	N
	5/6	10	5	4	169	clear PM, mostly cloudy AM	Y	N
	5/9	9	5	8	187	clear	N	N
	5/11	9	8	5	269	clear	N	N
	5/12	9	9	6	155	clear	N	N
	5/16	9	5	8	211	overcast	N	N
	5/17	9	7	6	261	mostly cloudy	N	N
	5/18	9	8	5	237	clear	N	N
	5/19	9	8	4	111	overcast	N	N
	5/23	9	11	3	172	overcast, mostly cloudy	Y	N
	5/25	9	11	7	187	overcast PM, clear AM	Y	N
	5/31	9	16	7	329	partly cloudy PM, clear AM	N	N
	6/1	9	10	5	237	partly cloudy PM, clear AM	N	N
	Entire Season	**189**	**6**	**6**	**216**			

[1] Nightly means calculated using raw met tower data (ME_Gray5736) from onsite Project met tower as provided by Project developer.

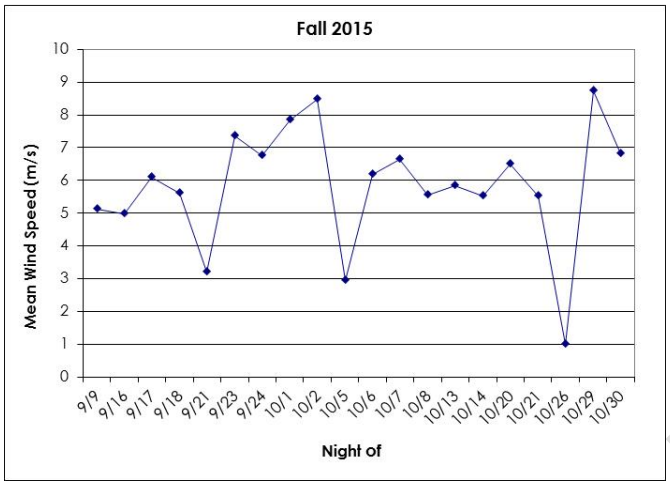
[2] Derived from WeatherUnderground.com data - KBHB station.

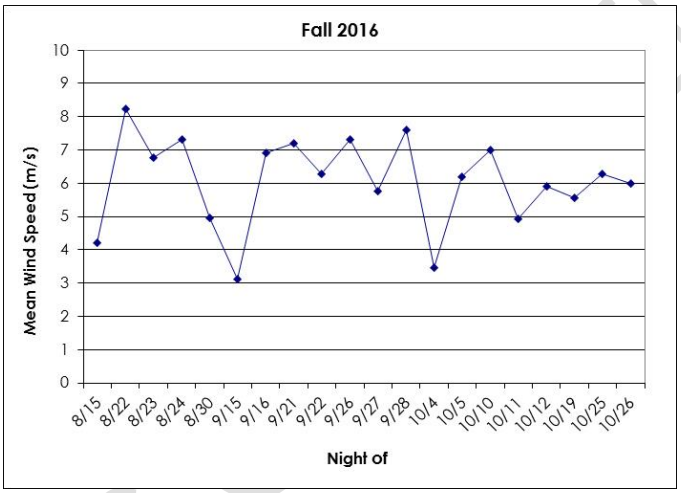
[3] Derived from WeatherUnderground.com - KBHB station. Fog indicated as possible (Y) if the difference between the temperature and dew point was < 1°C and humidity was > 94%.

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For all survey nights the overall mean nightly wind speed was 6 meters/second (m/s; Figure 3-1). The range in mean nightly wind speed was 1 – 9 m/s in fall 2015, 3 – 9 m/s in fall 2016, and 3 – 8 m/s in spring 2016. Wind speed varied substantially between nights in all 3 seasons.

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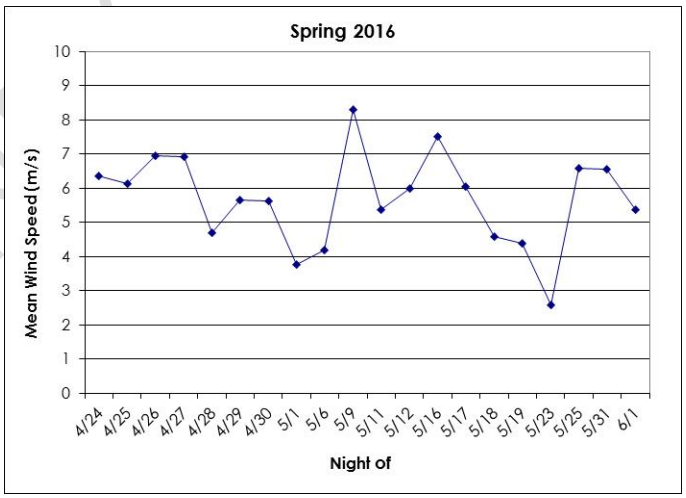
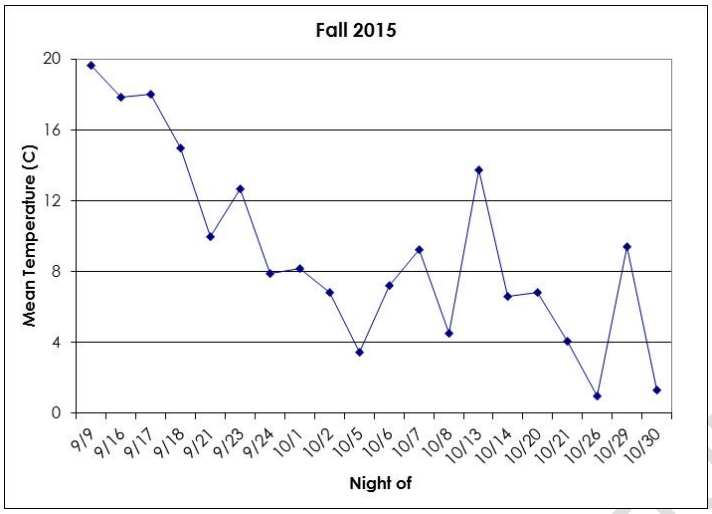


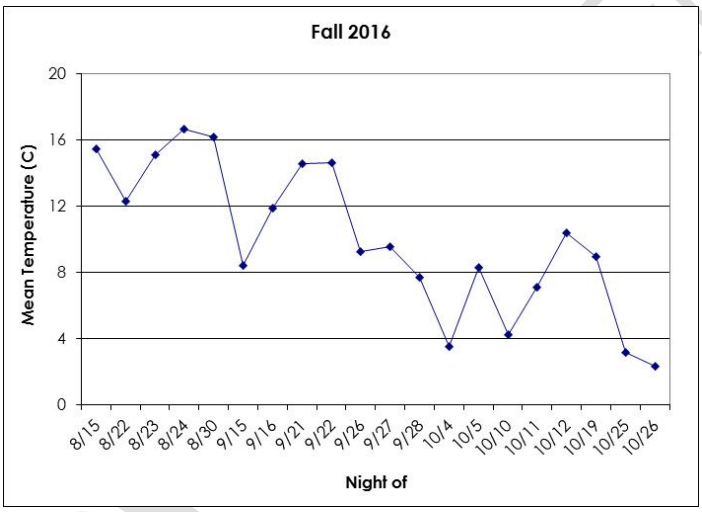
Figure 3-1. Nightly mean wind speed (m/s) in three radar seasons, Downeast Wind Project.

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For all survey nights the overall mean nightly temperature was 9°C (Figure 3-2). The range in mean nightly temperature was 1 – 20°C in fall 2015, 2 –17°C in fall 2016, and -2 – 20°C in spring 2016. Mean nightly temperature generally decreased with increasing Julian day in fall and increased with increasing Julian day in spring.

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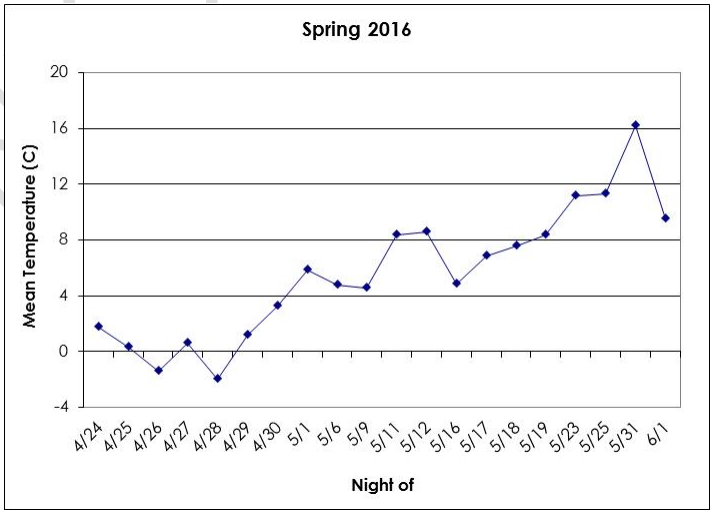


Figure 3-2. Nightly mean temperature (°C) in three radar seasons, Downeast Wind Project.

Out of the 60 survey nights, based on the calculated difference between temperature and dew point and the humidity value reported for that night, fog was possible on 15 nights in fall 2015

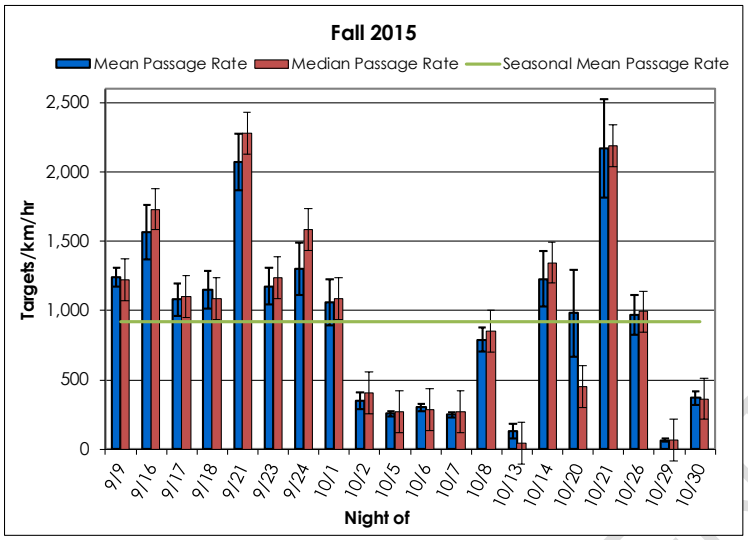
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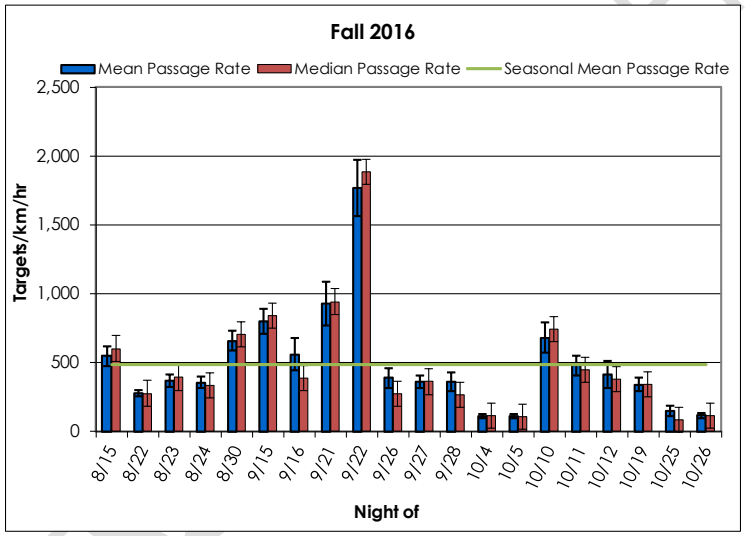
(75% of survey nights), and 6 nights in both spring and fall 2016 (30% of survey nights; though no fog data were available for 7 nights in fall 2016 [35%]). Fog occurred on only 1 night (4 Oct 2016).

3.2 PASSAGE RATES

The mean passage rate in fall 2015 was 920 ± 52 t/km/hr (Appendix A Table 2). Mean passage rates for fall and spring were similar (486 ± 30 t/km/hr in fall 2016 and 469 ± 39 t/km/hr in spring 2016; Appendix A Tables 3 and 4). Migratory activity peaked on multiple nights in fall 2015, and on a single night in both 2016 seasons (Figure 3-3).

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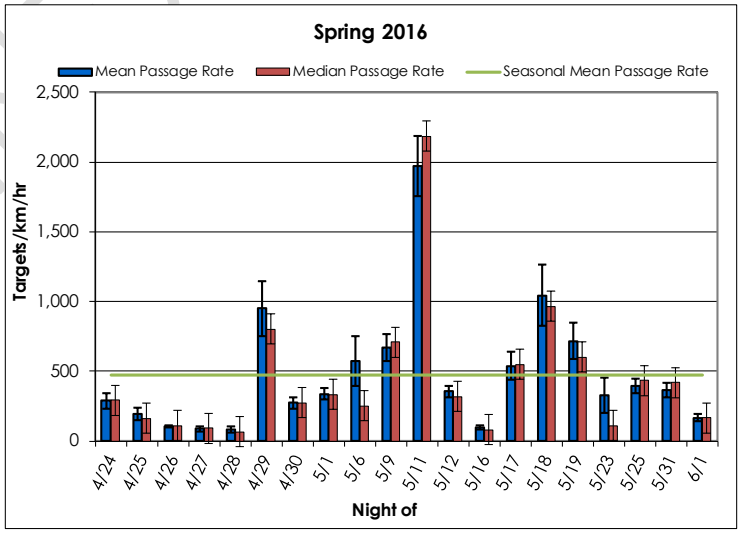


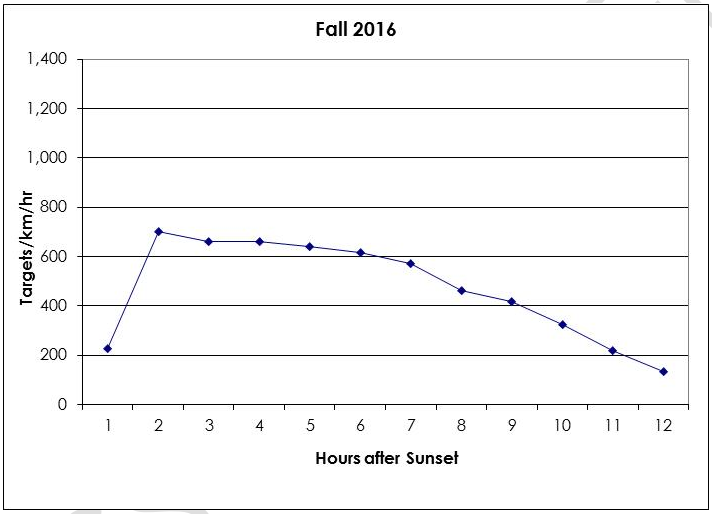
Figure 3-3. Nightly passage rates in three radar seasons, Downeast Wind Project.

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In all 3 seasons, mean hourly passage rates increased sharply in the first hour after sunset, peaked on or before hour 7, then declined until sunrise (Figure 3-4; Appendix A Tables 2-4). In fall 2016, the decline was a linear relationship between passage rate and hour after sunset.

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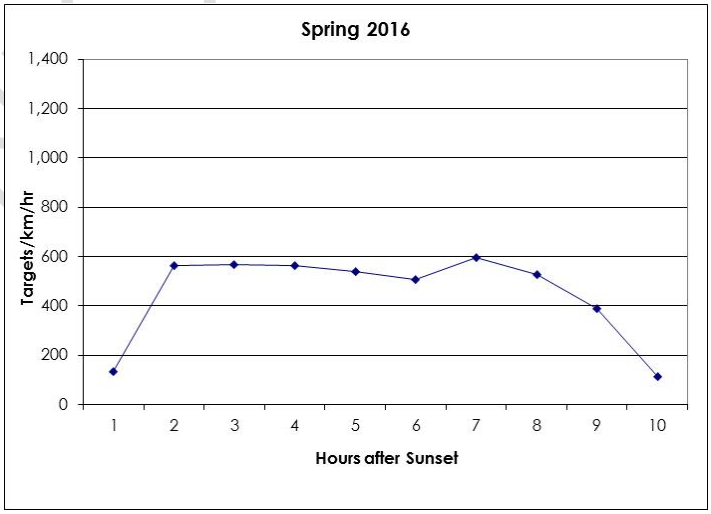


Figure 3-4. Mean hourly passage rates in three radar seasons, Downeast Wind Project.

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3.3 FLIGHT DIRECTION

The mean flight direction was 255° ± 66° in fall 2015, 68° ± 47° in spring 2016 and 252° ± 73° in fall 2016. Nightly mean flight direction varied among the nights (Figure 3-5; Appendix B Table 3).

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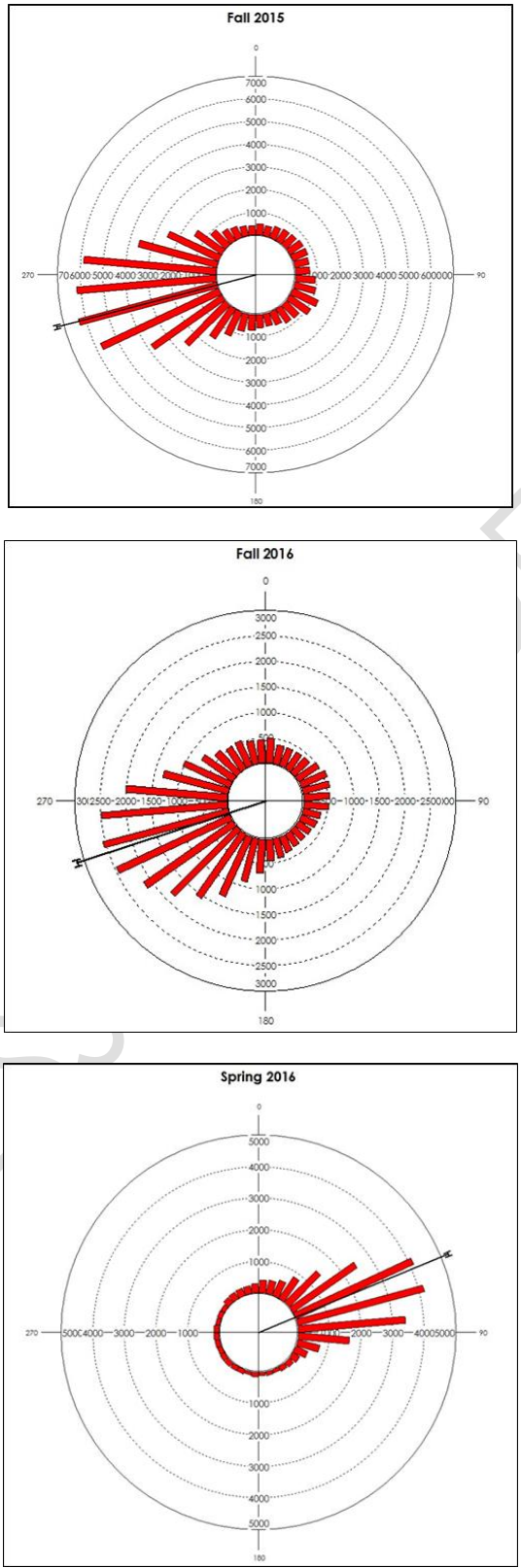


Figure 3-5. Mean flight direction in three radar seasons, Downeast Wind Project.

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3.4 FLIGHT HEIGHT

The mean flight height of targets was 428 ± 1 m (1,404 ft) in fall 2015, 384 ± 2 m (1,261 ft) in spring 2016, and 465 ± 1 m (1,526 ft) in fall 2016. The mean flight height of targets was greater in the fall seasons compared to the spring (Figure 3-6; Appendix B Table 4).

The percent of targets observed flying below 183 m was greatest during the spring 2016 season (20%, n = 4,040) and lowest during the fall 2016 season (13%, n = 4,349). The percentage of targets below 183 m in fall 2015 was 18% (n = 12,093).

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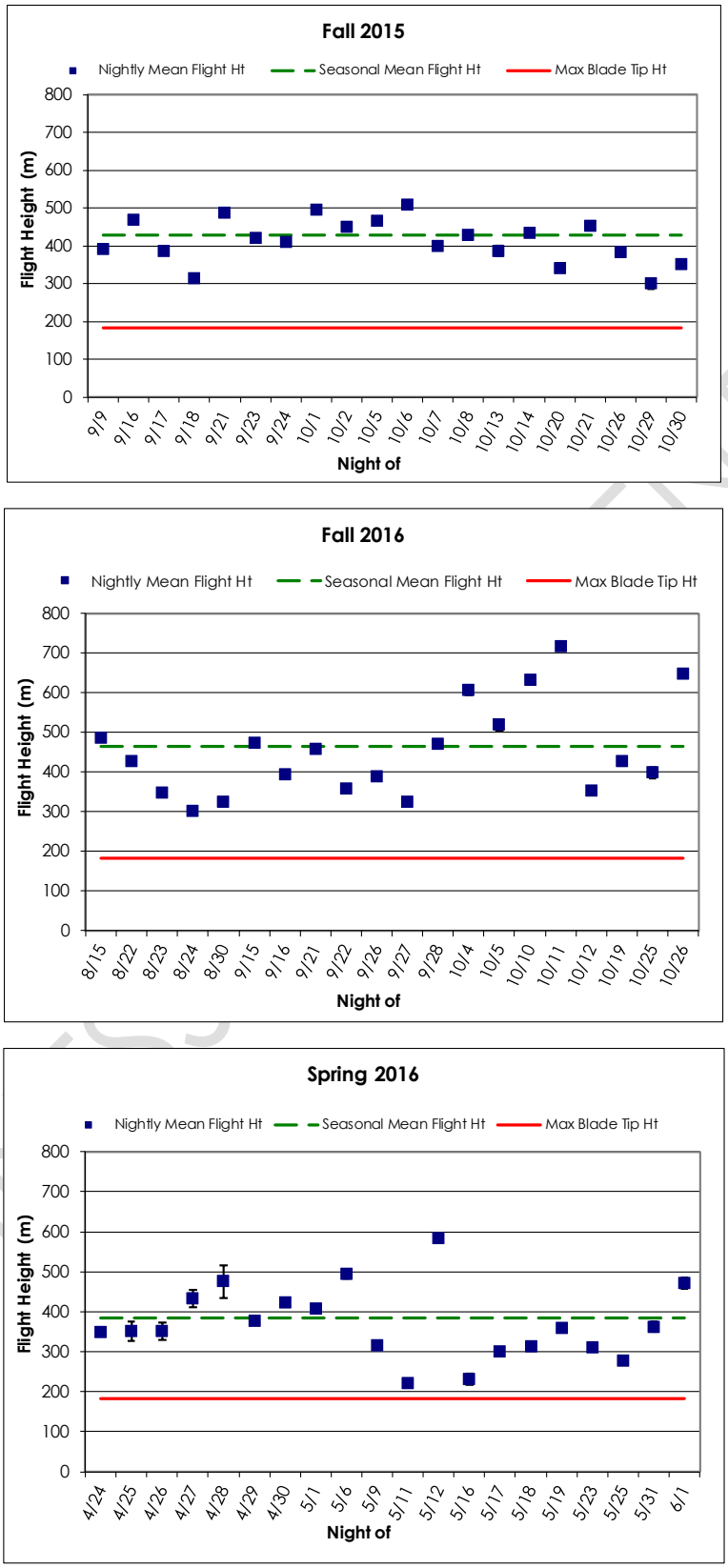


Figure 3-6. Mean nightly and seasonal flight heights for three radar seasons, Downeast Wind Project.

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Nightly variation in the percent of targets observed below maximum blade tip height was variable within seasons, ranging from 11% to 34% in fall 2015, 3% to 27% in fall 2016, and 7% to 53% in spring 2016 (Figure 3-7; Appendix B Table 4).

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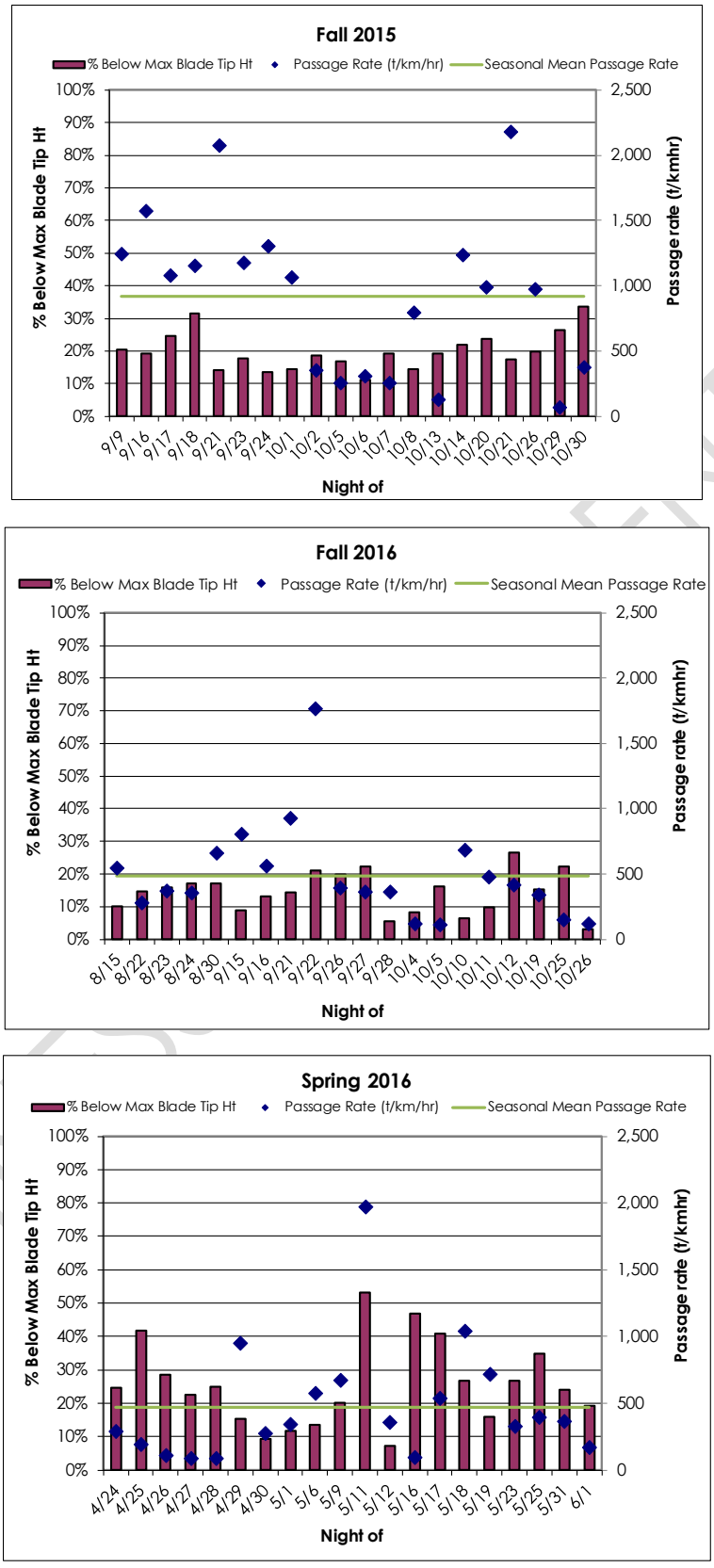


Figure 3-7. Percent of targets flying below maximum blade tip height in three radar seasons, Downeast Wind Project.

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Hourly mean and median flight heights varied between seasons and hours, showing slightly higher flight heights in the early night hours in fall 2015 and less pronounced patterns in spring and fall of 2016 (Figure 3-8). Hourly mean and median flight heights were consistently above maximum turbine blade tip height during all 3 seasons.

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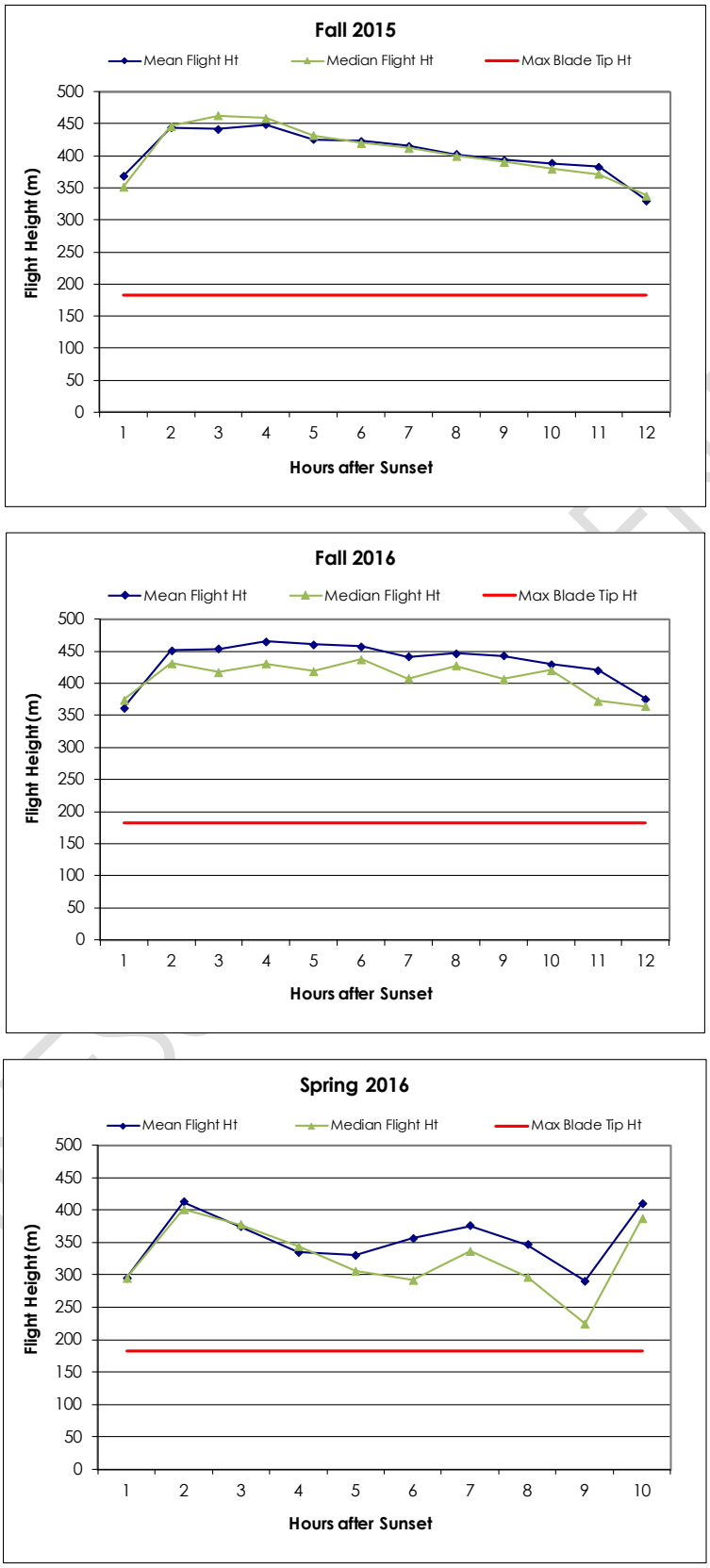


Figure 3-8. Hourly mean and median flight heights in three radar seasons, Downeast Wind Project,.

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Figure 3-9 shows the distribution of nightly flight heights of all targets relative to maximum turbine blade tip height. Boxes depict the middle 50% of targets. Error bars depict the upper and lower 25% of targets. Horizontal lines within boxes represent nightly median flight height.

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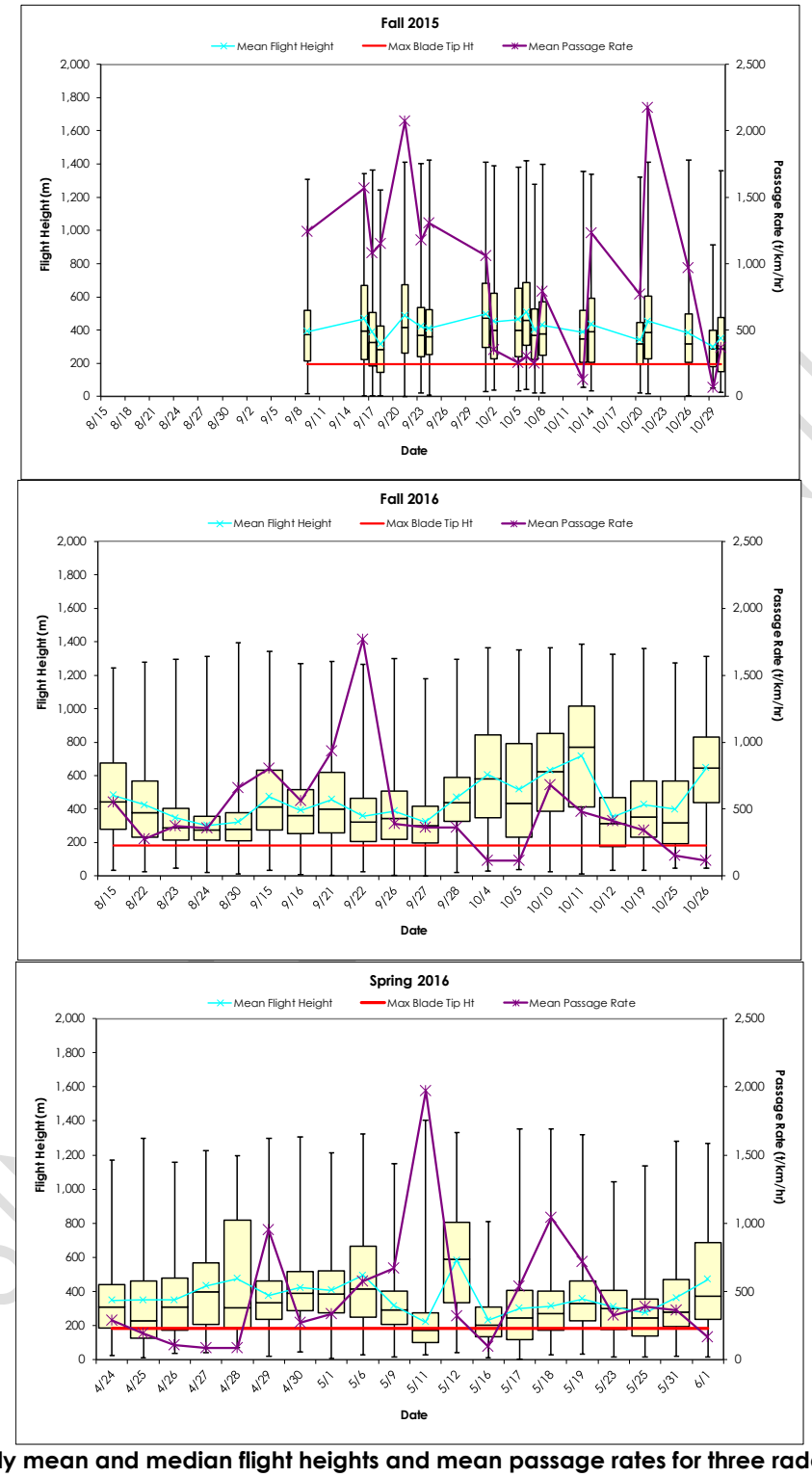


Figure 3-9. Nightly mean and median flight heights and mean passage rates for three radar seasons, Downeast Wind Project.

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3.5 ACTIVITY AND WEATHER RELATIONSHIPS

3.5.1 Passage Rate

3.5.1.1 Fall

On nights with the lowest mean passage rates in each fall season, mean wind direction was consistently against the direction of travel, indicating lower migration activity during nights with headwinds. For example, the difference between mean wind direction and mean flight direction was 169° on 15 September 2016 (i.e., headwinds), the night with the second highest mean passage rate. Despite this relationship, an anomaly was detected on the fall nights with the highest passage rates (21 October 2015 and 22 September 2016). On 21 October 2015, mean flight direction was from the west and mean wind direction was from the south, and on 22 September 2016, mean flight direction was northward while mean wind direction was from the west. The hourly variability in wind direction on these nights may have influenced the relatively high variability in hourly passage rates (i.e., standard deviation in nightly mean passage rates were highest on these nights relative to other within-season nights). Mean temperature was relatively low on 21 October 2015 (4°C) and relatively high on 22 September 2016 (15°C). On both nights, mean wind speed was moderate (6 m/s), and conditions were clear in the overnight hours but turned overcast in the early morning hours (with precipitation on 22 September 2016). Mean flight height on 21 October 2015 was relatively high (453 m) and on 22 September 2016 was moderate (357 m); percent below on both nights was approximately 20%. On both nights, mean passage rates were highest in the6th and 7th hrs after sunset, declining thereafter towards sunrise (Appendix A Tables 4 and 5).

On nights with the lowest passage rates in fall (29 October 2015 and 5 October 2016), mean flight direction was southward, and winds were predominantly from the south (against the direction of flight). Mean nightly wind speed was relatively high on 29 October 2015 (9 m/s) and moderate on 5 October 2016 (6 m/s). Both nights had periods of clear conditions and overcast or cloudy conditions. On 29 October 2015, rain occurred during that day and ended just before sunset, but the night remained overcast with gusty winds from the south. Mean flight height on 29 October 2015 was the lowest of all fall 2015 survey nights (299 m), and mean flight height on 5 October 2016 was among the highest of all fall 2016 survey nights (518 m).

On the single night with fog occurrence (4 October 2016), mean passage rate was the second lowest of all fall 2016 survey nights (115 t/km/hr), and mean flight height was the fourth highest of all fall 2016 survey nights (605 m). Eight percent of targets on this night flew below the maximum blade tip height. This night had mostly clear skies in the evening hours but turned overcast in the morning. Average wind speed was low (3 m/s) and wind direction was from the southwest.

3.5.1.2 Spring

On nights with the lowest mean passage rates in spring, mean wind direction was consistently against the direction of travel, indicating lower migration activity during nights with headwinds. For example, the difference between mean wind direction and mean flight direction was 163° on 18 May 2016 (i.e., headwinds), the night with the second highest mean passage rate. On the night with the highest passage rate in spring (11 May), mean flight direction was seasonally

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typical, toward the northeast. Mean wind direction on this night was from the west, somewhat conducive to northeasterly flight. Mean temperature was moderate (8°C), mean wind speed was moderate (5 m/s), and conditions were clear. Mean flight height on this night was the lowest of all nights in this survey season (222 m), and 53% of targets (n = 630) were below maximum blade tip height.

On the night with the lowest passage rate in spring (28 April), mean flight direction was from the northeast, but migrants faced a moderate headwind. The mean nightly temperature was relatively cold (-2°C), mean wind speed was moderate (5 m/s) and conditions were clear. Mean flight height on this night was relatively high (476 m).

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Table 3-2. Weather summary comparison and corresponding flight height and percent below maximum turbine blade tip height values for nights with the highest and lowest passage rates with, Downeast Wind Project, fall 2015, fall 2016, and spring 2016.

Season	Night	Mean Nightly Passage Rate	Seasonal Low or High	Mean Nightly Flight Height (m)	Mean Nightly Percent Below Max Blade Tip Ht	Mean Nightly Flight Direction (degrees)[1]	Mean Temperature (°C)[1]	Mean Wind Speed (m/s)[1]	Mean Wind Direction (degrees)[1]	Overall Visibility[2]	Fog Possible (Y/N)[3]	Fog Occurred (Y/N)[2]
Fall 2015	10/29	66	Low	299	26%	142 (southeast)	9	9	142	overcast PM, clear AM	N	N
	10/21	2,173	High	453	18%	195 (south)	4	6	195	clear, PM, overcast AM	Y	N
Fall 2016	10/5	113	Low	518	16%	191 (south)	8	6	191	clear, mostly cloudy AM	Y	N
	9/22	1,768	High	357	21%	268 (west)	15	6	268	clear PM, overcast/rain AM	no data	no data
Spring 2016	4/28	86	Low	476	25%	58 (northeast)	-2	5	58	Clear	N	N
	5/11	1,969	High	222	53%	269 (west)	8	5	269	Clear	N	N

[1] Nightly means calculated using raw met tower data (ME_Gray5736) from onsite Project met tower as provided by Project developer.

[2] Derived from WeatherUnderground.com data - KBHB station.

[3] Derived from WeatherUnderground.com - KBHB station. Fog indicated as possible (Y) if the difference between the temperature and dew point was < 1°C and humidity was > 94%.

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3.5.2 Flight Height

On nights with the highest nightly mean flight heights in all 3 seasons (6 October in fall 2015, 11 October in fall 2016, and 12 May in spring 2016), nightly mean wind speed was moderate (5-6 m/s) and skies were clear (Table 3-3). Only the night with the highest mean flight height in spring 2016 had a mean wind direction typical for seasonal migration (from the south). Mean wind direction on 6 October 2015 was from the west and on 11 October 2016 was from the east. Passage rates on these nights were below the seasonal mean.

The night with the lowest mean flight height in fall 2015 (29 October) was also the night with the lowest mean nightly passage rate during that season. Conversely, the night with the lowest mean flight height in spring 2016 (11 May) was the night with the highest mean passage rate during that season.

Table 3-3. Weather summary comparison for nights with the highest and lowest flight heights, Downeast Wind Project, fall 2015, fall 2016, and spring 2016.

Season	Night	Nightly Mean Flight Height (m)	Seasonal Low or High	Nightly Mean Passage Rate (t/km/hr)	Nightly Mean Temperature (°C)[1]	Nightly Mean Wind Speed (m/s)[1]	Nightly Mean Wind Direction (degrees)[1]	Overall Visibility[2]	Fog Possible (Y/N)[3]	Fog Occurred (Y/N)[2]
Fall 2015	10/29	299	Low	66	9	9	142	overcast PM, clear AM	N	N
	10/6	509	High	301	7	6	252	clear	Y	N
Fall 2016	8/24	302	Low	357	17	7	61	clear	Y	N
	10/11	717	High	480	7	5	94	clear	Y	N
Spring 2016	5/11	222	Low	1,969	8	5	269	clear	N	N
	5/12	584	High	354	9	6	155	clear	N	N

[1] Nightly means calculated using raw met tower data (ME_Gray5736) from onsite Project met tower as provided by Project developer.

[2] Derived from WeatherUnderground.com data - KBHB station.

[3] Derived from WeatherUnderground.com - KBHB station. Fog indicated as possible (Y) if the difference between the temperature and dew point was < 1°C and humidity was > 94%.

4.0 DISCUSSION

4.1 PASSAGE RATES

During both falls, median and mean passage rates peaked in mid- to late September in both years and a later pulse was detected in mid to late October in 2016. The timing of these peak migration nights is consistent with other fall radar surveys in Maine. The seasonal median and mean passage rates in fall 2015 were nearly double that in fall 2016, indicating yearly variation in levels of nocturnal migration at DOW, but both rates were within the range of results at wind projects in Maine and the eastern U.S. (Appendix A Table 13).

During spring, mean passage rates peaked in early May. The timing of the peak migration recorded in spring 2016 is consistent with other spring radar surveys in Maine and the seasonal

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mean passage rate is within the range of results at wind projects in Maine and the eastern U.S. (Appendix A Table 14).

Statistical analysis of 19 publicly available pre-construction radar survey passage rates with post-construction bird mortality for 8 wind projects in Maine (Figure 4-1) shows no significant relationship (R^2 = -0.04, P = 0.59) between passage rate and annual estimates of bird mortality; the correlation is very low, with no significant trend. This finding suggests that passage rate is not a good indicator of nocturnal migrant collision risk.

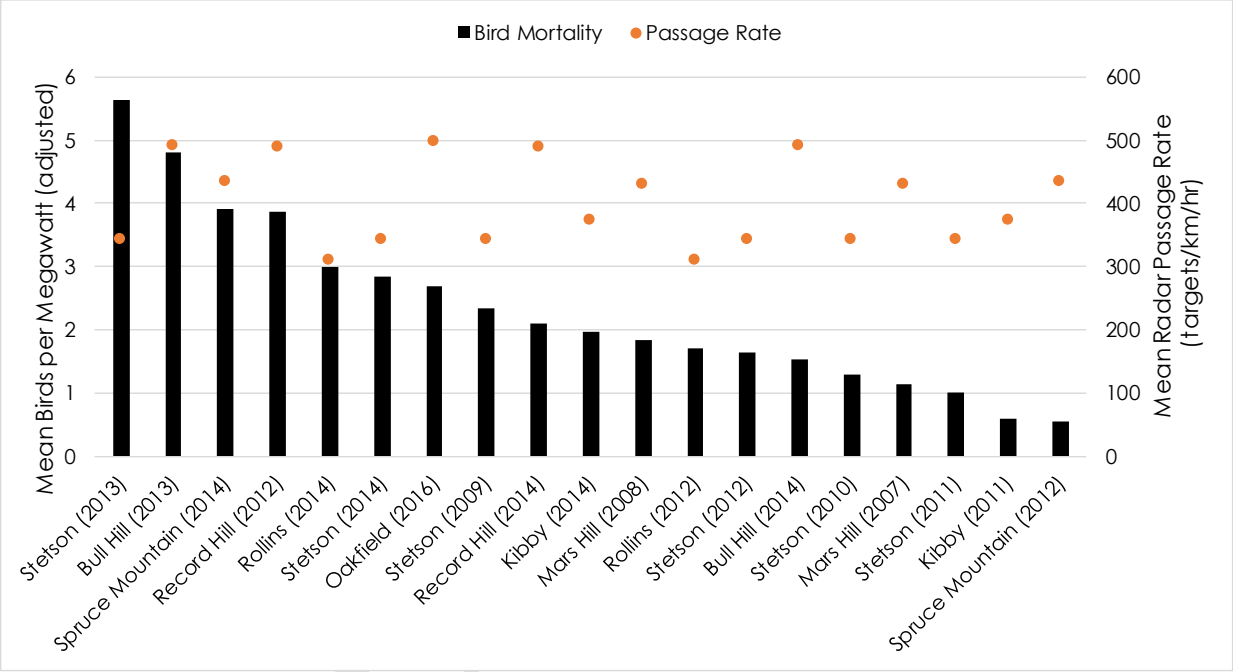


Figure 4-1. Estimated annual bird mortality rates (black columns) and radar passage rate (orange dots) for commercial wind projects in Maine.

4.2 FLIGHT HEIGHTS

The increasing number of publicly available radar surveys at proposed wind projects show a relatively consistent pattern in flight altitude, with most targets appearing to fly at altitudes of 200 m or more above the ground, regardless of local topography. Seasonal mean flight heights in fall 2015 and fall 2016 at DOW were higher than the range of results documented at wind project sites in Maine and the eastern U.S. Seasonal mean flight height in spring 2016 was within this range. Seasonal mean and median flight heights documented at DOW in all 3 seasons were well above the maximum blade-tip height of the proposed turbines. Percent of targets below maximum turbine blade tip height for all seasons was within the range of results at wind projects in Maine and the eastern U.S. (Appendix A Tables 14, 15).

4.3 DATA RELATIONSHIPS

4.3.1 Passage Rate, Flight Height and Weather

Nightly mean and median passage rates and flight heights were variable, and the level of variation was consistent with that documented at other projects in Maine.

On nights with the highest passage rates and flight heights in all 3 seasons, mean wind speeds were moderate and sky conditions were clear for the majority of nighttime hours. Wind direction and flight direction were variable on nights with the highest passage rates and highest flight heights.

4.3.2 Passage Rate and Flight Height

Typically, radar survey results have indicated that nights with relatively high mean passage rates have relatively high mean flight heights. This was true at the Project during the fall seasons, but during spring a peak nightly mean passage rate was recorded in early to mid-May on the night of the lowest mean and median flight height. Further assessment of the data on this night indicates this resulted from a large movement of birds migrating at lower altitudes consistently throughout the night. This night consisted of clear skies, above average temperatures, and episodic, strong wind gusts from the west.

4.3.3 Wind Direction and Flight Direction

On nights with the lowest mean passage rates in each season, mean wind direction was consistently against the direction of travel, indicating lower migration activity during nights with headwinds. On nights when the difference between mean wind direction and mean flight direction was nearest to 180° (i.e., nearly parallel) (169°–174° on fall survey nights, 163°–176° on spring survey nights), flight direction was seasonally typical (10/5 in fall 2015; 9/15, 9/27 and 9/28 in fall 2016; 5/11, 5/17, and 5/18 in spring 2016; Appendix A Tables 7, 8, 9). The difference between mean wind direction and mean flight direction was 164° on May 11, the night with the highest mean passage rate in spring 2016 (Appendix A Table 9). The difference between mean wind direction and mean flight direction was 169° on 15 September 2016 and 163° on 18 May 2016, nights with the second highest mean passage rates.

The seasonal mean flight direction at the Project in both fall seasons (west-southwest) is comparable to that documented at the Bull Hill Wind Project (west-south-west in fall 2009 and west-northwest in fall 2011; Stantec 2011) and the Weaver Wind Project (west-southwest in fall 2014; Stantec 2014). Both sites are approximately 10 miles northwest of the Project. Pooled flight direction results at Maine projects indicate that mean flight direction in fall is southwest and in spring is northeast (Appendix A Tables 13, 14).

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4.4 CONCLUSIONS

This radar survey effectively characterized the levels and timing of nocturnal migratory activity over DOW during spring (1 year) and fall (2 years). Higher passage rates were documented during fall than spring, rates were variable throughout each season with moderate peaks documented, and a relatively small percentage of targets were documented at heights below the maximum blade-tip height.

Although the relationship between passage rates and collision risk is not established based on extensive review of existing radar data at operational facilities, passage rates for all seasons evaluated at the Project were within the range of previously studied projects that have been proposed in Maine (Appendix A Tables 13, 14). As at other projects in Maine and in the eastern U.S., passerines are expected to make up the majority of fatalities (Loss et al. 2013, Stantec, pre-construction data, Taucher et al. 2012), and fatalities are expected to be greatest during the spring and fall migration periods (Stantec, pre-construction data). However, no significant population-level impact to any one migrating species is expected, largely because nocturnal migrant passerines most at risk of collision are regionally abundant (NRC 2007, Johnson et al. 2002, Arnold and Zinc 2011).

Monitoring of collision mortality during migration periods is recommended to confirm this conclusion. Analysis of the conditions during which collisions are documented may add to the understanding and identification of conditions when nocturnal migrants are most at risk of collision.

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5.0 LITERATURE CITED

Arnold, T. W., and R. M. Zinc. 2011. Collision fatality has no discernible effect on population trends in North American Birds. PLoS ONE 6(9): e24708. Doi:10.1371/journal.pone.0024708.

Johnson, G. D., W. P. Erickson, M. D. Strickland, M. F. Shepherd, D. A. Shepherd, and S. A. Sarappo. 2002. Collision fatality of local and migrant birds at a large-scale wind-power development on Buffalo Ridge, Minnesota. Wildlife Society Bulletin 30:879-887.

Loss, S.R., T. Will, and P.P. Marra. 2013. Estimates of bird collision fatality at wind facilities in the contiguous United States. Biological Conservation 168:201–209.

(NRC) National Research Council of the National Academies. 2007. Environmental Impacts of Wind-Energy Projects. Committee on Environmental Impacts of Wind Energy Projects Board on Environmental Studies and Toxicology Division on Earth and Life Studies. The National Academies Press, Washington, D.C.

Stantec, pre-construction data. Data obtained from Stantec's database of publicly available records from > 50 wind projects in the East surveyed from 1996 to 2015 during the pre-construction phase.

Stantec. 2011. Fall 2011 Radar Survey Results and Comparison to Fall 2009 Radar Results, Bull Hill Wind Project, Eastbrook, Maine. Memo prepared for Blue Sky East, LLC.

Stantec. 2014. 2014 Pre-Construction Avian and Bat Surveys - Weaver Wind Project. Prepared for First Wind, LLC.

Taucher, J., T. Librandi Mumma, W. Capouillez. 2012. Pennsylvania Game Commission Wind Energy Voluntary Cooperation Agreement Third Summary Report. Available online at: http://www.pccd.state.pa.us/portal/server.pt/document/1378280/pgc_3rd_wind_energy_summary_report_2012_pdf

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Appendix A NOCTURNAL RADAR SURVEY TABLES

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Appendix A Table 1. Survey dates, results, level of effort, and weather, Downeast Wind Project, fall 2015.

Night of	Sunset	Sunrise	# of Hours Analyzed	Passage rate	Flight Direction	Flight Height (m)	% below 183 m	Average Temperature (°C)[1]	Average Wind Speed (m/s)[1]	Average Wind Direction (degrees)[1]	Overall Visibility[2]	Fog Possible (Y/N)[3]	Fog Occurred (Y/N)[2]
9/9	18:54	6:02	11	1,241	99	392	20%	20	5	128	clear, partly cloudy	Y	N
9/16	18:41	6:10	12	1,568	299	469	19%	18	5	154	clear	Y	N
9/17	18:39	6:11	12	1,079	223	386	25%	18	6	191	clear	Y	N
9/18	18:37	6:13	12	1,152	339	313	32%	15	6	46	clear	Y	N
9/21	18:32	6:16	12	2,073	272	487	14%	10	3	45	clear	Y	N
9/23	18:28	6:19	12	1,176	187	420	18%	13	7	291	clear	Y	N
9/24	18:26	6:20	12	1,304	257	411	13%	8	7	1	clear	N	N
10/1	18:13	6:28	12	1,060	253	496	15%	8	8	27	clear, partly cloudy	Y	N
10/2	18:11	6:29	12	349	260	450	19%	7	8	38	mostly cloudy	N	N
10/5	18:05	6:33	12	256	160	465	17%	3	3	346	partly cloudy PM, clear AM	Y	N
10/6	18:03	6:34	12	301	184	509	11%	7	6	252	clear	Y	N
10/7	18:02	6:36	11	250	156	399	19%	9	7	249	partly cloudy PM, clear AM	Y	N
10/8	18:00	6:37	12	790	243	429	14%	5	6	357	clear	Y	N
10/13	17:51	6:43	12	128	109	387	19%	14	6	67	overcast	Y	N
10/14	17:49	6:44	6	1,230	224	434	22%	7	6	232	partly cloudy, overcast	Y	N
10/20	17:39	6:52	10	983	243	340	24%	7	7	272	mostly cloudy	Y	N
10/21	17:37	6:53	11	2,173	263	453	18%	4	6	195	clear, PM, overcast AM	Y	N
10/26	17:29	7:00	12	968	253	383	20%	1	1	2	clear	Y	N
10/29	17:25	7:04	11	66	129	299	26%	9	9	142	overcast PM, clear AM	N	N
10/30	17:23	7:05	11	369	242	351	34%	1	7	220	clear	N	N
Entire Season			**227**	**920**	**255**	**428**	**18%**	**9**	**6**	**163**			

1 Nightly averages calculated using raw met tower data (ME_Gray5736) from onsite Project met tower as provided by Project developer.

2 Derived from WeatherUnderground.com data - KBHB station.

3 Derived from WeatherUnderground.com - KBHB station. Fog indicated as possible (Y) if the difference between the temperature and dew point was < 1°C and humidity was > 94%.

Appendix A Table 2. Survey dates, results, level of effort, and weather, Downeast Wind Project, fall 2016.

Night of	Sunset	Sunrise	# of Hours Analyzed	Passage rate	Flight Direction	Flight Height (m)	% below 183 m	Average Temperature (°C)[1]	Average Wind Speed (m/s)[1]	Average Wind Direction (degrees)[1]	Overall Visibility[2]	Fog Possible (Y/N)[3]	Fog Occurred (Y/N)[2]
8/15	19:38	5:36	10	549	198	484	10%	15	4	259	overcast PM, clear AM	Y	N
8/22	19:27	5:44	10	276	144	425	15%	12	8	223	clear	N	N
8/23	19:25	5:45	10	373	36	347	16%	15	7	130	clear	N	N
8/24	19:24	5:46	10	357	19	302	17%	17	7	61	clear	Y	N
8/30	19:13	5:53	11	659	17	324	17%	16	5	137	overcast, mostly cloudy	N	N
9/15	18:43	6:12	12	804	264	473	9%	8	3	95	overcast	no data	no data
9/16	18:42	6:13	11	562	327	393	13%	12	7	39	partly cloudy	no data	no data
9/21	18:32	6:19	12	931	221	457	14%	15	7	175	clear	no data	no data
9/22	18:30	6:20	11	1,768	257	357	21%	15	6	268	clear PM, overcast/rain AM	no data	no data
9/26	18:23	6:25	12	391	332	388	20%	9	7	66	clear	no data	no data
9/27	18:21	6:26	12	362	232	324	22%	10	6	63	overcast	no data	no data
9/28	18:19	6:27	12	362	236	471	5%	8	8	46	overcast, clear AM	no data	no data
10/4	18:08	6:35	12	115	90	605	8%	4	3	204	clear PM, overcast/mist AM	Y	Y
10/5	18:06	6:36	12	113	89	518	16%	8	6	191	clear, mostly cloudy AM	Y	N
10/10	17:57	6:42	11	681	221	631	7%	4	7	284	clear	N	N
10/11	17:55	6:43	12	480	297	717	10%	7	5	94	clear	Y	N
10/12	17:53	6:45	11	413	288	351	27%	10	6	356	mostly cloudy, overcast	Y	N
10/19	17:41	6:54	12	341	206	427	15%	9	6	317	clear	N	N
10/25	17:32	7:02	12	151	221	399	22%	3	6	276	overcast	N	N
10/26	17:30	7:03	12	117	233	646	3%	2	6	12	overcast, partly cloudy	N	N
Entire Season			**227**	**486**	**252**	**465**	**13%**	**10**	**6**	**165**			

1 Nightly averages calculated using raw met tower data (ME_Gray5736) from onsite Project met tower as provided by Project developer.

2 Derived from WeatherUnderground.com data - KBHB station.

3 Derived from WeatherUnderground.com - KBHB station. Fog indicated as possible (Y) if the difference between the temperature and dew point was < 1°C and humidity was > 94%.

Appendix A Table 3. Survey dates, results, level of effort, and weather, Downeast Wind Project, spring 2016.

Night of	Sunset	Sunrise	# of Hours Analyzed	Passage rate	Flight Direction	Flight Height (m)	% below 183 m	Average Temperature (°C)[1]	Average Wind Speed (m/s)[1]	Average Wind Direction (degrees)[1]	Overall Visibility[2]	Fog Possible (Y/N)[3]	Fog Occurred (Y/N)[2]
4/24	19:26	5:30	10	288	69	348	25%	2	6	193	clear	N	N
4/25	19:28	5:28	10	192	85	351	42%	0	6	350	clear	N	N
4/26	19:29	5:27	10	106	62	350	28%	-1	7	197	clear	Y	N
4/27	19:30	5:25	10	88	81	434	22%	1	7	290	overcast PM, clear AM	N	N
4/28	19:31	5:24	10	86	77	476	25%	-2	5	58	clear	N	N
4/29	19:33	5:22	10	949	75	377	15%	1	6	224	clear	Y	N
4/30	19:34	5:21	10	274	73	422	9%	3	6	190	clear	Y	N
5/1	19:35	5:19	10	339	16	408	12%	6	4	302	overcast	N	N
5/6	19:41	5:12	10	574	20	494	13%	5	4	169	clear PM, mostly cloudy AM	Y	N
5/9	19:45	5:09	9	672	60	316	20%	5	8	187	clear	N	N
5/11	19:47	5:06	9	1,969	73	222	53%	8	5	269	clear	N	N
5/12	19:48	5:05	9	354	48	584	7%	9	6	155	clear	N	N
5/16	19:35	5:00	9	96	77	232	47%	5	8	211	overcast	N	N
5/17	19:54	4:59	9	538	77	301	41%	7	6	261	mostly cloudy	N	N
5/18	19:55	4:58	9	1,042	74	314	27%	8	5	237	clear	N	N
5/19	19:56	4:57	9	717	51	358	16%	8	4	111	overcast	N	N
5/23	20:00	4:54	9	327	62	310	27%	11	3	172	overcast, mostly cloudy	N	N
5/25	20:02	4:52	9	391	70	277	35%	11	7	187	overcast PM, clear AM	N	N
5/31	20:08	4:48	9	363	113	363	24%	16	7	329	partly cloudy PM, clear AM	N	N
6/1	20:09	4:47	9	166	338	471	19%	10	5	237	partly cloudy PM, clear AM	N	N
Entire Season			**189**	**469**	**68**	**384**	**20%**	**6**	**6**	**216**			

1 Nightly averages calculated using raw met tower data (ME_Gray5736) from onsite Project met tower as provided by Project developer.

2 Derived from WeatherUnderground.com data - KBHB station.

3 Derived from WeatherUnderground.com - KBHB station. Fog indicated as possible (Y) if the difference between the temperature and dew point was < 1°C and humidity was > 94%.

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Appendix A Table 4. Summary of passage rates by hour, night, and for entire season, Downeast Wind Project, fall 2015.

Night of	Passage Rate (targets/km/hr) by hour after sunset												Entire Night			
	1	2	3	4	5	6	7	8	9	10	11	12	Mean	Median	Stdev	SE
9/9	1,036	1,393	1,414	1,571	1,475	1,443	925	946	1,036	1,225	1,186	N/A	1,241	1,225	231	70
9/16	739	2,500	2,157	2,279	1,786	1,914	1,814	1,586	1,679	1,239	975	150	1,568	1,732	682	197
9/17	532	1,357	1,543	1,618	1,300	1,057	1,096	1,104	989	1,132	1,089	136	1,079	1,100	408	118
9/18	1,136	2,261	1,468	1,307	968	1,161	1,411	936	971	946	1,043	214	1,152	1,089	474	137
9/21	1,032	2,329	2,132	2,236	2,368	3,018	2,768	2,525	2,375	2,082	1,400	611	2,073	2,282	709	205
9/23	536	1,654	1,614	1,764	1,568	1,250	1,293	1,229	1,018	1,018	925	244	1,176	1,239	461	133
9/24	739	1,982	2,036	1,854	1,829	1,718	1,661	1,507	993	650	439	236	1,304	1,584	650	188
10/1	854	1,339	1,821	1,836	1,618	1,464	1,264	914	493	357	261	493	1,060	1,089	573	166
10/2	246	543	482	514	650	464	489	350	175	125	61	93	349	407	201	58
10/5	100	300	293	282	296	311	264	246	200	296	218	261	256	273	60	17
10/6	314	461	393	436	386	236	321	232	214	257	164	204	301	286	98	28
10/7	N/A[1]	325	300	304	225	154	136	200	268	246	314	282	250	268	65	20
10/8	146	879	993	1,161	1,150	821	1,068	893	689	636	564	475	790	850	302	87
10/13	32	18	14	0	43	36	57	43	93	207	421	571	128	43	183	53
10/14	Rain	521	786	1,250	1,443	1,525	1,854	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	1,230	1,346	494	202
10/20	86	225	229	246	332	571	1,071	2,604	2,243	2,218	N/A[1]	N/A[1]	983	452	991	313
10/21	329	1,050	1,843	2,189	2,900	3,814	3,268	2,971	3,329	1,514	693	N/A[1]	2,173	2,189	1,174	354
10/26	171	500	936	1,514	1,521	1,521	1,386	1,361	1,050	693	596	368	968	993	493	142
10/29	N/A[1]	43	25	64	100	79	104	111	100	39	32	32	66	64	33	10
10/30	86	364	504	543	600	568	371	293	257	257	218	N/A[1]	369	364	166	50
Entire Season	**477**	**1,002**	**1,049**	**1,148**	**1,128**	**1,156**	**1,131**	**1,055**	**956**	**797**	**589**	**291**	**920**	**693**	**777**	**52**
0 indicates no targets counted for that hour												N/A indicates no or only partial data for that hour				
N/A[1] indicates equipment failure during that hour																

Appendix A Table 5. Summary of passage rates by hour, night, and for entire season, Downeast Wind Project, fall 2015.

Night of	Passage Rate (targets/km/hr) by hour after sunset												Entire Night			
	1	2	3	4	5	6	7	8	9	10	11	12	Mean	Median	Stdev	SE
8/15	218	654	904	743	675	632	575	411	486	189	N/A	N/A	549	604	226	71
8/22	364	369	307	300	236	329	257	236	218	146	N/A	N/A	276	279	70	22
8/23	146	511	536	550	432	404	382	311	246	207	N/A	N/A	373	393	141	45
8/24	300	593	543	418	357	343	332	225	204	254	N/A	N/A	357	338	129	41
8/30	261	886	754	886	968	704	832	643	489	561	263	N/A	659	704	244	73
9/15	511	968	854	1,000	1,054	1,264	925	832	786	811	614	29	804	843	313	90
9/16	311	1,614	786	782	539	529	371	389	293	250	314	N/A[1]	562	389	396	119
9/21	286	714	857	1,029	1,436	1,904	1,632	1,182	1,089	454	346	240	931	943	548	158
9/22	864	1,911	1,807	1,886	2,107	2,361	2,682	2,271	1,850	1,286	421	N/A[1]	1,768	1,886	668	201
9/26	271	875	775	596	554	375	214	279	175	136	171	275	391	277	249	72
9/27	186	543	664	486	418	279	200	361	386	364	257	204	362	363	149	43
9/28	132	714	821	557	368	264	254	243	271	454	175	86	362	268	232	67
10/4	29	175	182	139	161	121	143	114	114	89	50	64	115	118	49	14
10/5	43	211	171	154	89	54	132	129	64	89	107	111	113	109	50	14
10/10	179	918	1,029	1,168	1,146	743	825	514	404	314	246	N/A[1]	681	743	365	110
10/11	100	925	768	750	643	507	539	389	389	304	236	211	480	448	254	73
10/12	75	943	818	650	379	729	400	225	157	104	64	N/A[1]	413	379	322	97
10/19	121	282	279	536	543	386	418	318	593	364	139	114	341	341	165	48
10/25	36	71	189	361	450	232	164	82	39	50	39	93	151	88	136	39
10/26	111	136	129	207	257	164	118	118	79	32	29	21	117	118	71	21
Entire Season	**227**	**701**	**659**	**660**	**641**	**616**	**570**	**464**	**417**	**323**	**217**	**132**	**486**	**357**	**458**	**30**
0 indicates no targets counted for that hour												N/A indicates no or only partial data for that hour				
N/A[1] indicates equipment failure during that hour																

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Appendix A Table 6. Summary of passage rates by hour, night, and for entire season, Downeast Wind Project, fall 2015.

Night of	Passage Rate (targets/km/hr) by hour after sunset										Entire Night			
	1	2	3	4	5	6	7	8	9	10	Mean	Median	Stdev	SE
4/24	7	129	211	421	539	475	411	346	236	104	288	291	177	56
4/25	75	389	307	379	318	168	157	104	14	7	192	163	146	46
4/26	43	129	143	118	118	139	96	100	79	93	106	109	30	10
4/27	54	104	225	39	100	104	82	36	111	29	88	91	58	18
4/28	75	82	232	193	39	82	39	57	39	17	86	66	71	22
4/29	139	225	600	721	879	1,232	1,579	1,682	1,896	536	949	800	618	196
4/30	111	296	361	254	250	229	350	386	475	30	274	275	132	42
5/1	157	286	275	279	379	400	611	443	404	155	339	332	138	44
5/6	250	1,557	1,432	971	639	254	246	111	250	29	574	252	557	176
5/9	175	696	746	825	707	568	1,218	711	403	N/A	672	707	287	96
5/11	325	2,186	1,929	1,996	2,318	2,436	2,393	2,218	1,918	N/A	1,969	2,186	646	215
5/12	179	568	479	457	329	293	282	318	286	N/A	354	318	122	41
5/16	43	71	143	57	82	46	107	132	179	N/A	96	82	47	16
5/17	43	550	550	607	986	932	589	407	182	N/A	538	550	307	102
5/18	96	657	604	975	964	1,286	2,125	1,975	700	N/A	1,042	964	658	219
5/19	282	1,343	1,157	1,014	850	496	600	393	321	N/A	717	600	388	129
5/23	111	918	804	732	286	36	29	21	9	N/A	327	111	380	127
5/25	189	271	446	639	404	432	450	525	163	N/A	391	432	156	52
5/31	136	493	489	411	457	357	418	439	70	N/A	363	418	154	51
6/1	171	293	221	146	164	186	154	146	11	N/A	166	164	75	25
Entire Season	**133**	**562**	**568**	**562**	**540**	**508**	**597**	**528**	**387**	**111**	**469**	**286**	**532**	**39**
0 indicates no targets counted for that hour										N/A indicates no or only partial data for that hour				

Appendix A Table 7. Mean nightly flight direction, Downeast Wind Project, fall 2015.

Night	Nightly Mean Wind Direction (°)	Nightly Mean Flight Direction (°)	Nightly Circular Stdev Flight Direction (°)	Variance between Mean Wind Direction and Mean Flight DIrection (°)
9/9	128	99	100	29
9/16	154	299	76	145
9/17	191	223	104	32
9/18	46	339	80	67
9/21	45	272	38	133
9/23	291	187	84	104
9/24	1	257	34	104
10/1	27	253	37	134
10/2	38	260	39	138
10/5	346	160	90	174
10/6	252	184	51	68
10/7	249	156	67	93
10/8	357	243	38	113
10/13	67	109	68	42
10/14	232	224	37	8
10/20	272	243	39	29
10/21	195	263	26	68
10/26	2	253	24	109
10/29	142	129	85	13
10/30	220	242	33	22
Entire Season	**163**	**255**	**66**	

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Appendix A Table 8. Mean nightly flight direction, Downeast Wind Project, fall 2016.

Night	Nightly Mean Wind Direction (°)	Nightly Mean Flight Direction (°)	Nightly Circular Stdev Flight Direction (°)	Variance between Mean Wind Direction and Mean Flight DIrection (°)
8/15	259	198	72	61
8/22	223	144	51	79
8/23	130	36	82	95
8/24	61	19	85	43
8/30	137	17	118	120
9/15	95	264	52	169
9/16	39	327	68	72
9/21	175	221	62	47
9/22	268	257	30	11
9/26	66	332	58	94
9/27	63	232	44	169
9/28	46	236	41	170
10/4	204	90	117	114
10/5	191	89	60	103
10/10	284	221	32	63
10/11	94	297	57	157
10/12	356	288	41	68
10/19	317	206	51	112
10/25	276	221	34	55
10/26	12	233	34	139
Entire Season	**165**	**252**	**73**	

Appendix A Table 9. Mean nightly flight direction, Downeast Wind Project, spring 2016.

Night	Nightly Mean Wind Direction (°)	Nightly Mean Flight Direction (°)	Nightly Circular Stdev Flight Direction (°)	Variance between Mean Wind Direction and Mean Flight DIrection (°)
4/24	193	69	40	124
4/25	350	85	46	95
4/26	197	62	51	135
4/27	290	81	60	151
4/28	58	77	64	19
4/29	224	75	29	149
4/30	190	73	44	117
5/1	302	16	74	75
5/6	169	20	61	149
5/9	187	60	35	127
5/11	269	73	31	164
5/12	155	48	85	108
5/16	211	77	64	134
5/17	261	77	46	176
5/18	237	74	28	163
5/19	111	51	37	60
5/23	172	62	56	109
5/25	187	70	38	117
5/31	329	113	66	143
6/1	237	338	103	101
Entire Season	**216**	**68**	**47**	

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Appendix A Table 10. Summary of mean flight heights by hour, night, and entire season, Downeast Wind Project, fall 2015.

Night of	Mean Flight Height (m) by hour after sunset												Entire Night				# of targets below 183 meters	% of targets below 183 meters
	1	2	3	4	5	6	7	8	9	10	11	12	Mean	Median	STDV	SE		
9/9	333	364	391	512	430	370	376	354	368	386	370	N/A	392	373	229	3	1,045	20%
9/16	362	446	506	513	542	540	482	460	401	388	360	402	469	393	315	4	1,137	19%
9/17	279	498	511	437	385	353	351	341	349	371	343	309	386	324	273	4	932	25%
9/18	346	343	291	269	258	313	318	327	362	285	292	N/A[1]	313	284	215	3	1,299	32%
9/21	394	470	527	523	537	509	500	486	448	388	400	421	487	416	293	4	689	14%
9/23	339	415	467	476	459	494	416	427	382	369	361	345	420	368	267	3	1,230	18%
9/24	357	494	438	411	386	402	418	383	394	399	362	350	411	358	239	3	979	13%
10/1	450	506	511	510	525	531	530	484	446	428	386	345	496	473	274	3	1,048	15%
10/2	445	439	410	427	433	523	480	438	441	444	445	315	450	398	285	7	343	19%
10/5	275	410	460	584	559	495	557	468	421	362	422	338	465	398	288	8	213	17%
10/6	369	577	524	525	462	513	524	572	599	564	377	298	509	456	280	8	144	11%
10/7	297	384	323	357	325	371	399	493	452	509	532	383	399	368	233	7	206	19%
10/8	312	483	415	476	502	486	400	368	390	371	342	291	429	378	245	5	370	14%
10/13	412	493	428	544	496	434	468	401	415	373	308	286	387	350	222	10	95	19%
10/14	Rain	Rain	346	346	421	459	505	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	434	392	273	8	230	22%
10/20	246	289	381	458	422	345	307	324	326	327	N/A[1]	N/A[1]	340	317	192	5	361	24%
10/21	590	651	472	460	438	405	409	400	380	N/A[1]	264	235	453	385	291	4	1,024	18%
10/26	489	602	483	417	343	330	287	290	338	311	394	413	383	318	244	5	545	20%
10/29	N/A[1]	280	466	355	263	295	271	261	266	303	555	222	299	281	158	11	51	26%
10/30	336	300	491	374	316	299	308	365	302	417	373	N/A[1]	351	287	260	12	152	34%
Entire Season	**368**	**444**	**442**	**449**	**425**	**423**	**415**	**402**	**394**	**389**	**383**	**330**	**428**	**373**	**270**	**1**	**12,093**	**18%**
-- indicates no targets counted for that hour													N/A indicates no or only partial data for that hour					
N/A[1] indicates equipment failure during that hour																		

Appendix A Table 11. Summary of mean flight heights by hour, night, and entire season, Downeast Wind Project, fall 2016.

Night of	Mean Flight Height (m) by hour after sunset												Entire Night				# of targets below 183 meters	% of targets below 183 meters
	1	2	3	4	5	6	7	8	9	10	11	12	Mean	Median	STDV	SE		
8/15	438	535	556	513	509	448	403	401	406	392	N/A	N/A	484	444	250	5	301	10%
8/22	357	395	367	429	505	473	470	453	479	487	N/A	N/A	425	377	247	6	235	15%
8/23	394	399	354	333	294	318	340	304	359	388	N/A	N/A	347	289	208	7	150	16%
8/24	309	325	275	302	311	319	311	292	258	302	N/A	N/A	302	274	150	5	129	17%
8/30	280	346	364	334	317	301	321	324	330	264	349	N/A	324	278	192	5	218	17%
9/15	392	476	433	431	422	398	453	513	599	625	479	364	473	412	257	4	378	9%
9/16	334	397	376	444	468	439	360	377	363	400	311	362	393	363	198	5	206	13%
9/21	392	597	505	415	410	359	390	469	472	478	464	375	457	402	263	7	229	14%
9/22	394	461	397	332	323	283	265	229	254	271	347	N/A[1]	357	322	205	3	824	21%
9/26	315	407	401	428	397	398	411	383	365	405	386	307	388	343	236	8	173	20%
9/27	316	212	324	352	414	406	313	285	222	209	309	236	324	301	172	5	278	22%
9/28	398	459	483	482	500	486	476	496	486	436	371	364	471	437	211	3	200	5%
10/4	356	478	501	651	590	721	600	687	597	571	461	521	605	581	309	11	69	8%
10/5	253	370	475	522	622	678	570	533	519	559	375	409	518	435	330	14	87	16%
10/10	436	595	556	631	602	659	649	756	649	654	618	N/A[1]	631	624	298	6	148	7%
10/11	211	626	746	792	742	728	794	795	718	644	686	370	717	771	359	9	172	10%
10/12	313	368	342	372	383	327	257	317	379	257	296	N/A[1]	351	313	221	8	199	27%
10/19	416	373	392	357	382	461	606	601	374	488	359	360	427	353	265	7	210	15%
10/25	391	456	477	532	415	436	340	194	--	234	270	231	399	318	274	14	81	22%
10/26	540	757	745	651	613	509	494	519	581	532	651	611	646	647	266	6	62	3%
Entire Season	**362**	**452**	**454**	**465**	**461**	**457**	**441**	**446**	**443**	**430**	**421**	**376**	**465**	**402**	**271**	**1**	**4,349**	**13%**
-- indicates no targets counted for that hour													N/A indicates no or only partial data for that hour					
N/A[1] indicates equipment failure during that hour																		

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Appendix A Table 12. Summary of mean flight heights by hour, night, and entire season, Downeast Wind Project, fall 2016.

Night of	Mean Flight Height (m) by hour after sunset										Entire Night				# of targets below 183 meters	% of targets below 183 meters
	1	2	3	4	5	6	7	8	9	10	Mean	Median	STDV	SE		
4/24	119	590	452	248	185	272	327	357	352	318	348	310	224	10	129	25%
4/25	277	386	397	363	252	252	287	622	197	733	351	230	317	24	73	42%
4/26	537	400	384	360	298	382	397	278	113	118	350	310	229	22	31	28%
4/27	346	535	340	153	110	166	220	198	154	377	434	398	279	21	38	22%
4/28	--	489	483	422	473	--	636	446	80	408	476	305	347	41	18	25%
4/29	263	359	360	371	393	400	378	327	407	557	377	333	213	4	406	15%
4/30	382	445	408	417	434	441	409	399	425	421	422	391	201	4	185	9%
5/1	334	373	370	424	464	438	454	389	288	387	408	387	193	5	163	12%
5/6	342	500	453	449	584	716	561	613	280	370	494	415	314	10	126	13%
5/9	195	403	370	310	266	284	268	263	183	N/A	316	292	161	4	379	20%
5/11	187	306	259	225	216	214	173	203	171	N/A	222	175	185	5	630	53%
5/12	354	411	394	421	589	849	754	670	679	N/A	584	588	284	6	165	7%
5/16	90	301	244	264	102	292	323	166	214	N/A	232	203	149	14	55	47%
5/17	348	403	272	217	269	205	301	245	224	N/A	301	245	235	11	193	41%
5/18	291	358	320	300	314	279	276	277	378	N/A	314	270	195	5	490	27%
5/19	328	382	405	381	365	292	278	265	204	N/A	358	329	185	4	444	16%
5/23	225	298	297	289	256	349	452	407	525	N/A	310	300	170	8	129	27%
5/25	276	345	339	252	245	246	253	214	205	N/A	277	247	189	8	196	35%
5/31	295	434	409	327	372	292	345	300	432	N/A	363	281	252	13	95	24%
6/1	413	524	522	501	416	399	417	294	--	N/A	471	372	319	14	95	19%
Entire Season	**295**	**412**	**374**	**335**	**330**	**356**	**375**	**346**	**290**	**410**	**384**	**332**	**239**	**2**	**4,040**	**20%**
-- indicates no targets counted for that hour											N/A indicates no or only partial data for that hour					

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Appendix A Table 13. Summary of publically available avian fall radar survey results conducted at proposed (pre-construction) US wind power facilities in eastern U.S. using X-band mobile radar systems (2005-2016 sorted by mean passage rate low to high).

Project Site	Season	Number of Survey Nights	Number of Survey Hours	Landscape	Mean Seasonal Passage Rate (t/km/hr)	Range in Nightly Passage Rates	Mean Seasonal Flight Direction	Mean Seasonal Flight Height (m)	(Turbine Ht) % Targets Below Turbine Height	Reference
Sheffield, Caledonia Cty, VT	Fall 2004	18	176	Forested ridge	91	19–320	200	566	(125 m) 1%	Woodlot Alternatives, Inc. 2005. A Fall 2004 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Hardscrabble Mountain Wind Project in Sheffield, Vermont. Prepared for UPC Wind Management, LLC.
Antrim, Hillsborough Cty, NH	Fall 2011	30	327	Forested ridge	138	4–538	217	203	(150 m) 40%	Stantec Consulting Services Inc. 2011. Summer and Fall 2011 Radar and Acoustic Bat Survey Report for the Antrim Wind Energy Project in Antrim, New Hampshire. Prepared for Antrim Wind Energy, LLC.
Kibby, Franklin Cty, ME (Range 1)	Fall 2005	12	101	Forested ridge	201	12–783	196	352	(125 m) 12%	Woodlot Alternatives, Inc. 2006. A Fall 2005 Survey of Bird and Bat Migration at the Proposed Kibby Wind Power Project in Kibby and Skinner Townships, Maine. Prepared for TransCanada Maine.
Number Nine, Aroostock County, ME	Fall 2014	20	227	Forested ridge	247	47-806	218	354	(150 m) 21%	Stantec Consulting Services Inc. 2014. Fall 2014 Nocturnal Radar Survey Report. Prepared for number Nine Wind Farm, LLC.
Georgia Mountain, VT	Fall 2008	21	n/a	Forested ridge	326	56–700	230	371	(120 m) 7%	Stantec Consulting Services Inc. 2008. A Fall 2008 Survey of Bird Migration at the Georgia Mountain Wind Project, Vermont. Prepared for Georgia Mountain Community Wind.
Bowers, Washington Cty, ME	Fall 2009	22	249	Forested ridge	344	95–844	231	315	(119 m) 14%	Stantec Consulting Services Inc. 2010. Fall 2009 Avian and Bat Surveys for the Bowers Wind Project. Prepared for Champlain Wind Energy, LLC.
Kingdom Community, Lowell, VT	Fall 2008	20	230	Forested ridge	356	12–1,372	n/a	350	(125 m) 15%	Stantec Consulting. 2008. Fall 2008 Bird and Bat Migration Survey Report: Radar Surveys for the Kingdom Community Wind Project in Lowell, Vermont. Prepared for Vermont Environmental Research Associates.
Granite Reliable Power, Coos County, NH	Fall 2007	29	232	Forested ridge	366	54–1,234	223	343	(125 m) 15%	Stantec Consulting Services Inc. 2007. Fall 2007 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Windpark in Coos County, New Hampshire by Granite Reliable Power, LLC. Prepared for Granite Reliable Power, LLC.
Rollins, Lincoln, Penobscot Cty, ME	Fall 2007	22	231	Forested ridge	368	82–953	284	343	(120 m) 13%	Woodlot Alternatives, Inc. 2008. A Fall 2007 Survey of Bird and Bat Migration at the Rollins Wind Project, Washington County, Maine. Prepared for Evergreen Wind, LLC.
Passadumkeag, Grand Falls Township, ME	Fall 2011	20	222	Forested ridge	394	65–1,281	251	325	(140 m) 22%	Stantec Consulting Services. 2011. Summer and Fall 2011 Avian and Bat Survey Report for the Passadumkeag Wind Project in Grand Falls Township, Maine. Prepared for Passadumkeag Windpark LLC.
Record Hill, Oxford Cty, ME	Fall 2007	20	220	Forested ridge	420	88–1,006	227	365	(130 m) 14%	Woodlot Alternatives, Inc. 2007. A Fall 2007 Survey of Bird and Bat Migration at the Record Hill Wind Project, Roxbury, Maine. Prepared for Roxbury Hill Wind LLC.
Bull Hill, Hancock Cty, ME	Fall 2011	10	112	Coastal	431	111–747	282	279	(145 m) 26%	Stantec Consulting Services Inc. 2011. Fall 2011 Radar Survey Results and Comparison to Fall 2009 Radar Results: Memo for the Bull Hill Wind Project. Prepared for Blue Sky East Wind, LLC.
Kibby, Franklin Cty, ME (Valley)	Fall 2005	5	13	Forested ridge	452	52–995	193	391	(125 m) 16%	Woodlot Alternatives, Inc. 2006. A Fall 2005 Survey of Bird and Bat Migration at the Proposed Kibby Wind Power Project in Kibby and Skinner Townships, Maine. Prepared for TransCanada Maine.
Sisk (Kibby Expansion) Franklin Cty, ME	Fall 2009	20	210	Forested ridge	458	44–1,067	206	287	(125 m) 23%	Stantec Consulting Services Inc. 2009. Fall 2009 Nocturnal Migration Survey Report. Prepared for TRC Engineers LLC.
Granite Reliable Power, Coos Cty, NH	Fall 2006	30	328	Forested ridge	469	22–1,098	223	455	(125 m) 1%	Stantec Consulting Services Inc. 2007. Fall 2006 Radar Surveys of Nighttime Migration Activity at the Proposed Windpark in Coos County, New Hampshire by Granite Reliable Power, LLC. Prepared for Granite Reliable Power, LLC.
Groton Wind, Grafton Cty, NH	Fall 2008	45	509	Forested ridge	470	94–1,174	260	342	(125 m) 13%	Stantec Consulting Services Inc. 2008. Fall 2008 Radar Survey Report for the Groton Wind Project. Prepared for Groton Wind, LLC.
Stetson, Washington Cty, ME	Fall 2006	12	77	Forested ridge	476	131–1,192	227	378	(125 m) 13%	Woodlot Alternatives, Inc. 2007. A Fall 2006 Survey of Bird and Bat Migration at the Stetson Wind Project, Washington County, Maine. Prepared for Evergreen Wind V, LLC.
Downeast, Washington Cty, ME	**Fall 2016**	**20**	**227**	**Coastal**	**486**	**113 - 1,768**	**252**	**465**	**(183 m) 13%**	**This Report**

Project Site	Season	Number of Survey Nights	Number of Survey Hours	Landscape	Mean Passage Rate (t/km/hr)	Range in Nightly Passage Rates	Mean Flight Direction	Mean Flight Height (m)	(Turbine Ht) % Targets Below Turbine Height	Reference
Oakfield, Penobscot Cty, ME	Fall 2008	20	n/a	Forested ridge	501	116–945	200	309	(125 m) 18%	Woodlot Alternatives, Inc. 2008. A Fall 2008 Survey of Bird and Bat Migration at the Oakfield Wind Project, Washington County, Maine. Prepared for Evergreen Wind, LLC.
Mars Hill, Aroostook Cty, ME	Fall 2005	18	117	Forested ridge	512	60–1,092	228	424	(120 m) 8%	Woodlot Alternatives, Inc. 2006. A Fall 2005 Radar, Visual, and Acoustic Survey of Bird Migration at the Mars Hill Wind Farm in Mars Hill, Maine. Prepared for Evergreen Windpower, LLC.
Highland, Somerset Cty, ME	Fall 2008	20	216	Forested ridge	549	68–1,201	227	348	(130.5 m) 17%	Stantec Consulting. 2009. Fall 2008 Bird and Bat Migration Survey Report: Radar and Acoustic Avian and Bat Surveys for the Highland Wind Project Highland Plantation, Maine. Prepared for Highland Wind LLC
Deerfield, Bennington Cty, VT	Fall 2005	32	324	Forested ridge	559	3–1,736	221	395	(100 m) 13%	Woodlot Alternatives, Inc. 2006. Fall 2005 Bird and Bat Migration Surveys at the Proposed Deerfield Wind Project in Searsburg and Readsboro, Vermont. Prepared for PPM Energy, Inc.
Kibby, Franklin Cty, ME (Mountain)	Fall 2005	12	115	Forested ridge	565	109–1,107	167	370	(125 m) 16%	Woodlot Alternatives, Inc. 2006. A Fall 2005 Survey of Bird and Bat Migration at the Proposed Kibby Wind Power Project in Kibby and Skinner Townships, Maine. Prepared for TransCanada Maine.
Bull Hill, Hancock Cty, ME	Fall 2009	20	232	Coastal	614	188–1,500	260	357	(145 m) 20%	Stantec Consulting Services Inc. 2010. Summer and Fall 2009 Avian and Bat Survey Report for the Bull Hill Project. Prepared for Blue Sky East Wind, LLC.
Lempster, Sullivan Cty, NH	Fall 2006	32	290	Forested ridge	620	133–1,609	206	387	(125 m) 8%	Woodlot Alternatives, Inc. 2007. A Fall 2006 Survey of Nocturnal Bird Migration, Breeding Birds, and Bicknell's Thrush at the Proposed Lempster Mountain Wind Power Project Lempster, New Hampshire. Prepared for Lempster Wind, LLC.
Weaver, Hancock Cty, ME	Fall 2014	20	211	Coastal	657	239–1,122	259	412	(180 m) 23%	Stantec Consulting Services Inc. 2014. 2014 Pre-Construction Avian and Bat Surveys – Weaver Wind Project. Prepared for First Wind, LLC.
Bingham, Somerset Cty, ME	Fall 2010	20	232	Forested ridge	803	194–2,463	234	378	(152 m) 20%	Stantec Consulting Services Inc. 2012. Fall 2010 Avian and Bat Survey Report for the Bingham Wind Project. Prepared for Blue Sky East Wind, LLC.
Downeast, Washington Cty, ME	**Fall 2015**	**20**	**227**	**Coastal**	**920**	**66-2,173**	**255**	**428**	**(183 m) 18%**	**This Report**
Bingham, Somerset Cty, ME	Fall 2011	12	139	Forested ridge	952	341–2,234	244	397	(152 m) 16%	Stantec Consulting Services Inc. 2012. Fall 2011 Avian and Bat Survey Report for the Bingham Wind Project. Prepared for Blue Sky East Wind, LLC.
Wild Meadows, Grafton and Merrimack Ctys, NH	Fall 2009	35	380	Forested ridge	980	384–2,442	225	362	(150 m) 19%	Stantec Consulting Services Inc. 2013. Fall 2009 Radar and Acoustic Surveys, Wild Meadows Wind Project in Grafton and Merrimack Counties, New Hampshire. Prepared for Atlantic Wind LLC.

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Appendix A Table 14. Summary of publically available spring radar survey results conducted at proposed (pre-construction) US wind power facilities in eastern U.S. using X-band mobile radar systems (2005-2016 sorted by mean passage rate low to high).

Project Site	Season	Number of Survey Nights	Number of Survey Hours	Landscape	Mean Seasonal Passage Rate (t/km/hr)	Range in Nightly Passage Rates	Mean Seasonal Flight Direction	Mean Seasonal Flight Height (m)	(Turbine Ht) % Targets Below Turbine Height	Reference
Stetson, Washington Cty, ME	Spring 2007	21	138	Forested ridge	147	3–434	55	210	(120 m) 22%	Woodlot Alternatives, Inc. 2007. A Spring 2007 Survey of Bird and Bat Migration at the Stetson Wind Project, Washington County, Maine. Prepared for Evergreen Wind V, LLC.
Sheffield, Caledonia Cty, VT	Spring 2005	20	180	Forested ridge	166	12–440	40	552	(125 m) 6%	Woodlot Alternatives, Inc. 2006. A Spring 2005 Radar, and Visual Survey of Bird Migration at the Proposed Sheffield Wind Farm in Sheffield and Sutton, Vermont. Prepared for UPC Wind Management, LLC.
Kibby, Franklin Cty, ME (Range 1)	Spring 2006	10	80	Forested ridge	197	6–471	50	412	(120 m) 22%	Woodlot Alternatives, Inc. 2006. A Spring 2006 Survey of Bird and Bat Migration at the Proposed Kibby Wind Power Project in Kibby and Skinner Townships, Maine. Prepared for TransCanada Maine.
Sisk (Kibby Expansion), Franklin Cty, ME	Spring 2009	21	193	Forested ridge	207	50–452	28	293	(125 m) 18%	Stantec Consulting Services Inc. 2009. Spring 2009 Nocturnal Migration Survey Report for the Kibby Expansion Wind Project. Prepared for TRC Engineers LLC.
Kingdom Community, Lowell, VT	Spring 2009	15	132	Forested ridge	219	8–751	n/a	298	(125 m) 19%	Stantec Consulting. 2009. Spring 2009 Nocturnal Migration and Breeding Bird Surveys for the Kingdom Community Wind Project in Lowell, Vermont. Prepared for Vermont Environmental Research Associates.
Antrim, Hillsborough Cty, NH	Spring 2011	30	284	Forested ridge	223	6–1,215	44	305	(150 m) 30%	Stantec Consulting Services Inc. 2011. Spring 2011 Radar and Acoustic Bat Survey Report for the Antrim Wind Energy Project in Antrim, New Hampshire. Prepared for Eolian Renewable Energy.
Groton Wind, Grafton Cty, NH	Spring 2008	40	373	Forested ridge	234	35–549	77	321	(125 m) 12%	Stantec Consulting Services Inc. 2008. Spring 2008 Radar Survey Report for the Groton Wind Project. Prepared for Groton Wind, LLC.
Rollins, Penobscot Cty, ME	Spring 2008	20	189	Forested ridge	247	40–766	75	316	(120 m) 13%	Stantec Consulting Services Inc. 2008. Spring 2008 Bird and Bat Migration Survey Report: Visual, Radar and Acoustic Bat Surveys for the Rollins Wind Project. Prepared for First Wind, LLC.
Deerfield, Bennington Cty, VT	Spring 2006	26	236	Forested ridge	263	5–934	58	435	(100 m) 11%	Woodlot Alternatives, Inc. 2006. Spring 2006 Bird and Bat Migration Surveys at the Proposed Deerfield Wind Project in Searsburg and Readsboro, Vermont. Prepared for PPM Energy, Inc.
Bowers, Carroll Plantation, ME	Spring 2010	20	188	Forested ridge	289	20–589	56	243	(131 m) 26%	Stantec Consulting Services Inc. 2010. 2010 Spring Avian and Spring/Summer Bat Surveys for the Bowers Wind Project. Prepared for Champlain Wind Energy LLC.
Mars Hill, Aroostook Cty, ME	Spring 2006	15	85	Forested ridge	338	76–674	58	384	(120 m) 14%	Woodlot Alternatives, Inc. 2006. A Spring 2006 Radar, Visual, and Acoustic Survey of Bird Migration at the Mars Hill Wind Farm in Mars Hill, Maine. Prepared for Evergreen Windpower, LLC.
Granite Reliable Power, Coos County, NH	Spring 2007	30	212	Forested ridge	342	2–870	76	332	(125 m) 14%	Stantec Consulting Services Inc. 2007. Spring 2007 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Windpark in Coos County, New Hampshire by Granite Reliable Power, LLC. Prepared for Granite Reliable Power, LLC.
Bull Hill, T16 MD, ME	Spring 2010	20	184	Forested ridge	387	43–879	48	217	(145 m) 38%	Stantec Consulting Services Inc. 2010. Spring 2010 Avian and Bat Survey Report for the Bull Hill Wind Project. Prepared for Blue Sky East Wind LLC.
Deerfield, Bennington Cty, VT	Spring 2005	20	183	Forested ridge	404	74–973	69	523	(100 m) 4%	Woodlot Alternatives, Inc. 2005. Spring 2005 Bird and Bat Migration Surveys at the Proposed Deerfield Wind Project in Searsburg and Readsboro, Vermont. Prepared for PPM Energy, Inc.
Kibby, Franklin Cty, ME (Valley)	Spring 2006	2	14	Forested ridge	443	45–1,242	61	334	(120 m) n/a	Woodlot Alternatives, Inc. 2006. A Spring 2006 Survey of Bird and Bat Migration at the Proposed Kibby Wind Power Project in Kibby and Skinner Townships, Maine. Prepared for TransCanada Maine.
Kibby, Franklin Cty, ME (Mountain)	Spring 2006	6	33	Forested ridge	456	88–1,500	67	368	(120 m) 14%	Woodlot Alternatives, Inc. 2006. A Spring 2006 Survey of Bird and Bat Migration at the Proposed Kibby Wind Power Project in Kibby and Skinner Townships, Maine. Prepared for TransCanada Maine.
Wild Meadows, Grafton and Merrimack Ctys, NH	Spring 2010	33	285	Forested ridge	467	10–1,379	56	387	(150 m) 19%	Stantec Consulting Services Inc. 2013. Spring 2010 Avian and Bat Survey Report for the Wild Meadows Wind Project in Grafton and Merrimack Counties, New Hampshire. Prepared for Atlantic Wind LLC.

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Project Site	Season	Number of Survey Nights	Number of Survey Hours	Landscape	Mean Passage Rate (t/km/hr)	Range in Nightly Passage Rates	Mean Flight Direction	Mean Flight Height (m)	(Turbine Ht) % Targets Below Turbine Height	Reference
Downeast, Washington Cty, ME	**Spring 2016**	**20**	**189**	**Coastal**	**469**	**86–1,969**	**68**	**384**	**(183m) 20%**	***This Report***
Passadumkeag, Grand Falls Township, ME	Spring 2011	20	179	Forested ridge	476	3–1,950	67	321	(140 m) 28%	Stantec Consulting Services Inc. 2011. Spring and Summer 2011 Avian and Bat Survey Report for the Passadumkeag Wind Project in Grand Falls Township, Maine. Prepared for Passadumkeag Windpark LLC.
Highland, Somerset Cty, ME (location 1)	Spring 2009	21	192	Forested ridge	496	10–1,262	47	287	(130.5m) 26%	Stantec Consulting Services Inc. 2009. Spring 2009 Ecological Surveys for the Highland Wind Project. Prepared for Highland Wind LLC.
Oakfield, Penobscot Cty, ME	Spring 2008	20	194	Forested ridge	498	132–899	33	276	(120 m) 21%	Stantec Consulting Services Inc. 2008.A Spring 2008 Survey of Bird and Bat Migration at the Oakfield Wind Project, Washington County, Maine. Prepared for Evergreen Wind, LLC.
Highland, Somerset Cty, ME (location 2)	Spring 2009	19	161	Forested ridge	511	8–1,735	53	314	(130.5m) 23%	Stantec Consulting Services Inc. 2009. Spring 2009 Ecological Surveys for the Highland Wind Project. Prepared for Highland Wind LLC.
Kibby, Franklin Cty, ME (Range 2)	Spring 2006	7	57	Forested ridge	512	18–757	86	378	(120 m) 25%	Woodlot Alternatives, Inc. 2006. A Spring 2006 Survey of Bird and Bat Migration at the Proposed Kibby Wind Power Project in Kibby and Skinner Townships, Maine. Prepared for TransCanada Maine.
Bull Hill, T16 MD, ME	Spring 2011	10	94	Forested ridge	519	88–1108	98	371	(145 m) 21%	Stantec Consulting Services Inc. 2011. Spring 2011 Radar Survey Results and Comparison to Spring 2010 Results: Memo for the Bull Hill Wind Project. Prepared for First Wind.
Record Hill, Oxford Cty, ME	Spring 2007	20	n/a	Forested ridge	539	137–1,256	52	312	(130 m) 18%	Woodlot Alternatives, Inc. 2007. A Spring 2007 Survey of Bird and Bat Migration at the Record Hill Wind Project, Roxbury, Maine. Prepared for Roxbury Hill Wind LLC.
Lempster, Sullivan Cty, NH	Spring 2007	30	277	Forested ridge	542	49–1,094	49	358	(125 m) 18%	Woodlot Alternatives, Inc. 2007.A Spring 2007 Survey of Nocturnal Bird Migration, Breeding Birds, and Bicknell's Thrush at the Proposed Lempster Mountain Wind Power Project Lempster, New Hampshire. Prepared for Lempster Wind, LLC.
Bingham, Somerset Cty, ME	Spring 2010	20	184	Forested ridge	543	51–1,231	43	355	(152 m) 21%	Stantec Consulting Services Inc. 2010. Spring 2010 Avian and Bat Survey Report for the Bingham Wind Project. Prepared for Blue Sky East Wind LLC.
Weaver, Hancock Cty, ME	Spring 2014	20	188	Forested ridge	806	49–2,586	72	365	(180m) 29%	Stantec Consulting Services Inc. 2014. 2014 Pre-Construction Avian and Bat Surveys – Weaver Wind Project. Prepared for First Wind, LLC.

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EXHIBIT 7-4: ACOUSTIC BAT STUDY REPORT

Acoustic Bat Study Report Downeast Wind Project - September 2015 to October 2016

Washington County, ME

Prepared by:
Stantec Consulting
30 Park Drive
Topsham, ME 04086

April 7, 2017

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Executive Summary

Stantec Consulting Services Inc. (Stantec) conducted acoustic bat (acoustic) surveys for the proposed Downeast Wind Project (DOW or Project) in Washington County, Maine. Acoustic surveys were completed as part of pre-construction planning efforts for DOW in accordance with the Maine Department of Inland Fisheries and Wildlife's (MDIFW) *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (June 2015), the U.S. Fish and Wildlife Service's *Land-Based Wind Energy Guidelines* (March 2012), the Project Work Plan dated 17 March 2016, discussions held with MDIFW during a meeting with Apex and Stantec on 23 February 2016, and methods similar to those employed at other wind energy projects in Maine and the Northeast. The goal of the surveys was to characterize bat activity at DOW. The objectives were to document species composition, seasonal and nightly timing of bat activity, and relationships between bat activity and habitat and between bat activity and conditions, i.e., temperature and wind speed, near the rotor zone.

Acoustic surveys occurred during two periods: fall 2015 (10 September to 31 October) and spring, summer, fall 2016 (31 March to 31 October). "Ground detectors" were deployed 5 – 8 meters (m) above ground level (agl) and "elevated detectors" were deployed at 20 (Met Mid) and 40 m agl (Met High) on the on-site met tower during both survey periods. Ground detectors were Anabat© (Titley Electronics Pty Ltd.) detectors programmed to operate each night between 18:00 and 08:00. Elevated detectors were 2 microphones of a single SM3 (Wildlife Acoustics ©) detector programmed to operate each night between ½ hour before sunset until ½ hour after sunrise. Ambient temperature and wind speed were recorded as 10-minute averages by sensors on the on-site met tower at 3 m agl and 59 m agl respectively.

Acoustic data collected at ground and elevated detectors were analyzed using 2 automated identification programs (Kaleidoscope Pro [with classifier version 3.1.0; "KPro"] and BCID [version 2.7b; "BCID"]. Species presence was based on a maximum likelihood estimator (MLE) assigned by each automated program on a nightly basis. Automated analysis results were used to calculate the percent of detector nights with presence and the percent of nights with presence by species and month. For ground detectors, the percent of nights with presence by species and habitat was calculated.

In addition, Stantec visually vetted each call file that was identified by the programs as a state-listed species (small-footed bat [*Myotis leibii*], little brown bat [*Myotis lucifugus*], and northern long-eared bat [*Myotis septentrionalis*]) to vet the automated identifications. Based on vetted call files, the percent of nights with listed species presence and the percent of nights with listed species presence by month were calculated.

For elevated detectors, Stantec visually analyzed all call files to confirm that all bat passes were included in analysis of activity patterns. Based on results of the visual analysis, detection rates and species composition were calculated, seasonal, nightly, and hourly patterns in activity were

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summarized, and temperature and wind speed, measured at times when bat activity occurred at met tower detectors, was used to characterize conditions when bats were active in the rotor zone.

Operation of ground detectors resulted in 1,050 total detector nights. Based on KPro, hoary bat was detected most often followed by eastern red bat at ground detectors. Based on BCID, silver-haired bat was most common and was recorded at each ground detector, followed by big brown bat. After vetting, little brown bats were considered plausibly present during 1.6 – 24.4% (n = 4 – 61) of detector-nights among ground detectors, small-footed bat were plausibly present during 0 – 0.8% (n = 0 – 2) of detector-nights, and northern long-eared bat were plausibly present during 0 – 4.7% (n = 0 – 7) of detector-nights. At ground detectors, depending on species and analysis program, the proportion of detector nights with bat activity was greatest in July and August except for small-footed bat, for which the greatest proportion of detector nights with activity occurred in May according to KPro (August according to BCID) and tri-colored bat (*Perimyotis subflavus*) for which the greatest proportion of detector nights with activity occurred in September according to BCID (August according to KPro). Species composition at ground detectors varied by habitat and overall detection rates were lowest in the blueberry barren habitat. Of the state-listed species recorded, small-footed bat and little-brown bat were present on the greatest proportion of detector nights in the pond habitat; however, both were detected infrequently. Northern long-eared bat was present on the greatest proportion of detector nights in the hedgerow in blueberry barren habitat according to KPro and in the pond habitat according to BCID.

Operation of elevated detectors resulted in 473 detector nights. Based on visual analysis, elevated detectors combined recorded 1,065 bat passes resulting in an overall mean detection rate of 2.3 passes/detector-night at both detectors combined. Met High recorded fewer bat passes (n=364; 1.7 passes/detector-night) than Met Mid (n=701; 2.7 passes/detector-night). Based on KPro, of the species detected at elevated detectors, hoary bat was detected on the greatest proportion of nights at both Met High and Met Mid, followed by big brown bat at Met Mid. Based on BCID, hoary bat was detected on the greatest proportion of nights at Met High, and silver-haired bat was detected on the greatest proportion of nights at Met Mid. Based on visual analysis of the elevated detector calls, bats in the big brown bat/silver-haired bat group and the hoary bat group were most common. After vetting at Met Mid, little brown bats were considered plausibly present during 3.8% (n = 10) of detector-nights, small-footed bat and northern long-eared bat were each plausibly present during 0.4% (n = 1) of detector-nights.

Species composition differed between Met Mid and Met High in that neither KPro or BCID identified small-footed bat or northern long-eared bat at Met High. At elevated detectors, depending on species and analysis program, the month with the greatest proportion of nights with bat presence was August. After vetting, the proportion of nights with little-brown bat presence was greatest in August (8%). Small-footed bat had plausible presence during 1 detector-night in August at Met Mid and northern long-eared bat had plausible presence during 1 detector-night in September at Met Mid.

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For bat passes recorded at elevated detectors when wind speed and temperature data were available, 83% of bat passes occurred when mean wind speed was ≤ 6.9 m/s, 96% occurred when mean temperature was ≥ 10 degrees Celsius, and 80% occurred when both conditions were present. This combination of wind speed and temperature occurred most often in the months of July, August, and September. Species composition was relatively consistent regardless of wind speed and temperature.

As measured using acoustic detectors at DOW in two bat activity periods spanning two calendar years, bat detection rates, species composition, and activity patterns related to habitat and conditions are similar to what has been documented at other proposed and operational wind energy projects in Maine and in the Northeast. Because overall bat detection rates were lowest in blueberry barrens and very few listed bat species were recorded at raised detectors located in a blueberry barren, siting turbines away from trees may minimize overall risk to bats during some periods of bat activity. Bat fatality patterns such as seasonal timing and species composition of mortality at DOW are expected to be similar to those documented at operational wind energy projects in Maine and in the Northeast; however, operational adjustment during time periods and conditions when most bat activity occurs would minimize impacts to bats. Based on this site-specific acoustic dataset, it is reasonable to expect that operational adjustment during the periods of greatest bat activity: seasonal periods (July and August), time periods (within 6 hours of sunset), wind conditions (<6.9 m/s) and temperature conditions (>10 °C), would greatly reduce potential impacts to bats at the site. Standard monitoring of bat mortality during the first year of operations should be implemented to evaluate the effectiveness of such a measure if implemented.

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) conducted acoustic bat (acoustic) surveys for the proposed Downeast Wind Project (DOW or Project) in Washington County, Maine. Acoustic surveys were completed as part of pre-construction planning efforts for DOW in accordance with the Maine Department of Inland Fisheries and Wildlife (MDIFW)'s *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (June 2015), the US Fish and Wildlife Service's (USFWS) *Land-Based Wind Energy Guidelines* (March 2012), discussions held with MDIFW during a meeting with Apex and Stantec on 23 February 2016, and methods similar to those employed at other wind energy projects in Maine and the Northeast. The goal of the surveys was to characterize bat activity at DOW. The objectives were to document species composition, seasonal and nightly timing of bat activity, and relationships between bat activity and habitat and between bat activity and conditions i.e., temperature and wind speed, near the rotor zone.

1.1 BAT SPECIES IN MAINE

Table 1-1 shows the species of bats that occur in Maine and their current listing or conservation status (MDIFW 2015, MDIFW 2011).

Table 1-1. Species of bat that occur in Maine and corresponding species group.

Common Name	Scientific Name	Current Status	Species Acronym	Species Group
little brown bat	*Myotis lucifugus*	State endangered	MYLU	Myotis species (MYSP)
northern long-eared bat	*Myotis septentrionalis*	Federally threatened, state endangered	MYSE	
eastern small-footed bat	*Myotis leibii*	State threatened	MYLE	
big brown bat	*Eptesicus fuscus*	Not listed	EPFU	Big brown bat/silver-haired bat (BBSH)
silver-haired bat	*Lasionycteris noctivagans*	State species of special concern	LANO	
eastern red bat	*Lasiurus borealis*	State species of special concern	LABO	Eastern red bat/tri-colored bat (RBTB)
tri-colored bat	*Perimyotis subflavus*	State species of special concern	PESU	
hoary bat	*Lasiurus cinereus*	State species of special concern	LACI	Hoary bat (HB)

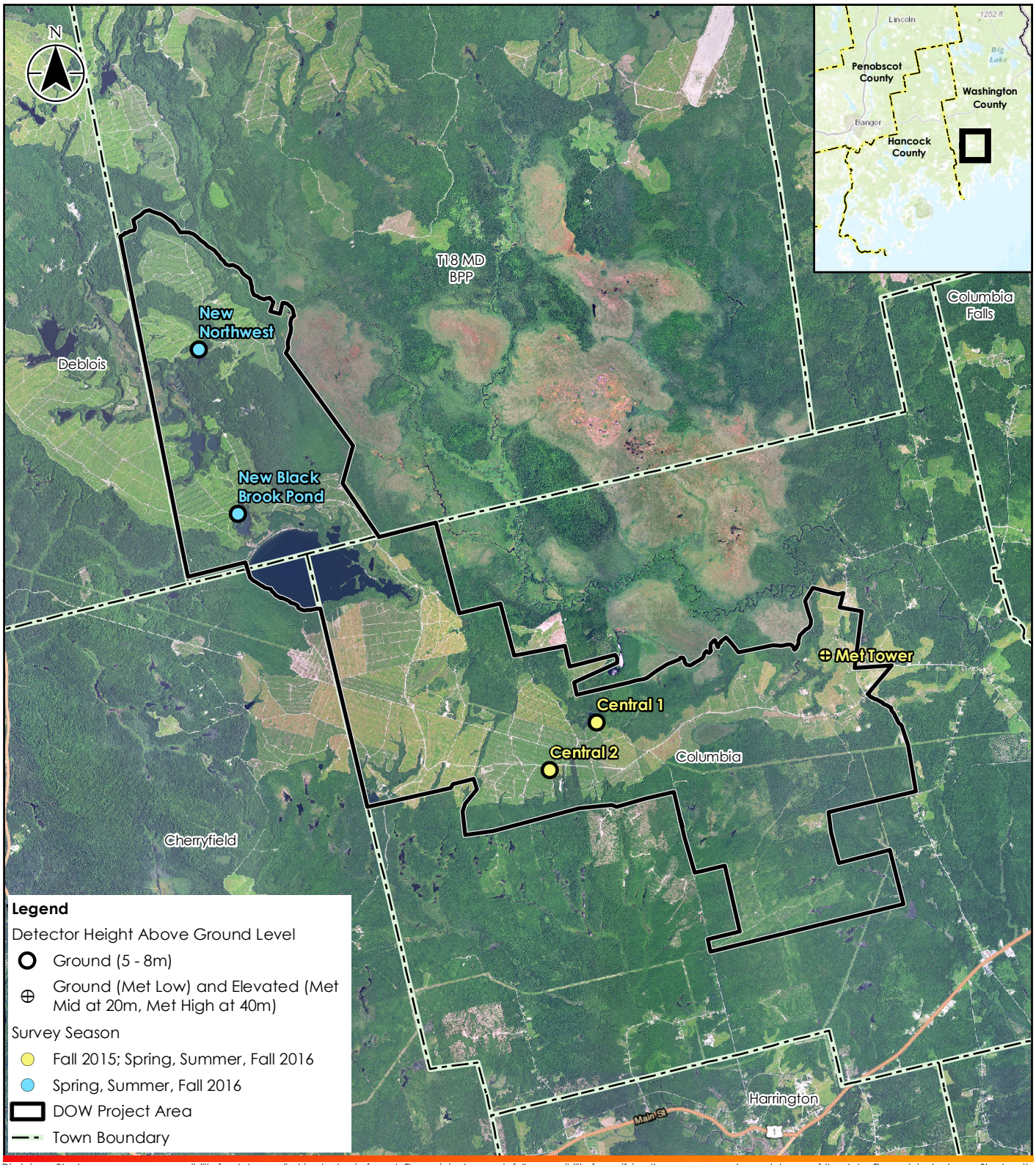
1.2 PROJECT AREA HABITAT

The Project area (Figure 1-1) is located within the Downeast Coast Ecoregion as defined in Maine's Comprehensive Wildlife Conservation Strategy (MDIFW 2005, Gawler & Cutko 2010). The

Downeast Maine Ecoregion extends from Ellsworth to Eastport and inland to north of State Route 9. This ecoregion is characterized by low acidic summits, blueberry barrens, coastal spruce-fir forests, and industrial timberlands.

Pineo Ridge and its associated glacial delta, esker, and moraine deposits predominates the Project area. This formation supports a landscape characterized by rolling hills and low-elevation broad ridges between approximately 200 and 400 ft in elevation. Habitats throughout the Project area consist primarily of commercially managed lowbush blueberry (*Vaccinium angustifolium*) barrens (managed lowbush Blueberry – Lichen barrens), small kettle ponds (Gawler & Cutko 2010, Maine Geologic Survey 2003), and various terrestrial forested upland. Terrestrial forested uplands are dominated by gray birch (Betula populifolia), red oak (*Quercus rubra*), white pine (*Pinus strobus*) balsam fir (*Abies balsamea*), and red maple (*Acer rubrum*); resulting in variations of red oak – white pine woodlands and early successional forests. Additional, terrestrial forested upland occurs as isolated jack pine (*Pinus banksiana*) and red pine (*Pinus resinosa*) wind hedgerows within the blueberry barrens. Large wetland and peatland complexes associated with the Narraguagus River and Pleasant River watersheds occur on the peripheries of the Project area. The Project area contains a network of unpaved roadways that intersect the blueberry barrens.

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Prepared by GAC on 2017-03-22
Reviewed by LSB on 2017-03-23

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Client/Project
Downeast Wind Project
Washington County, Maine

Figure No.
1-1

Title
Acoustic Bat Survey Locations, 2015-2016
3/22/2017

2.0 METHODS

2.1 DETECTOR PLACEMENT, SURVEY DATES, AND DATA COLLECTION

Acoustic surveys occurred during two periods: fall 2015 (10 September to 31 October) and spring, summer, fall 2016 (31 March to 31 October). Seven detectors were used for data collection; single detectors were deployed in 4 trees located throughout the Project area and 3 detectors were deployed on the single onsite meteorological (met) tower available at the time of surveys (Figure 1-1). Detectors in trees and one met detector (Met Low) were deployed 5 – 8 meters (m) above ground level (agl; "ground detectors"). The two other detectors were deployed on the met tower ("elevated detectors") at approximately 20 m agl (Met Mid) and 40 m agl (Met High). Ground detectors were Anabat© (Titley Electronics Pty Ltd.) detectors programmed to operate each night between 18:00 and 08:00. Elevated detectors consisted of a single SM3 (Wildlife Acoustics ©) detector with 2 microphones, programmed to operate each night between ½ hour before sunset until ½ hour after sunrise.

2.1.1 Ground Detectors

Ground detectors were deployed in a variety of habitats (Table 2-1). Photographs of ground detector setups are included in Appendix A.

Table 2-1. Operation dates and habitat at ground detector locations, 2015-2016.

Detector Name	Detector Height (m)	Operation Dates	Habitat (Habitat Category)
Met Low	5–8	2015 (9/10-10/31); 2016 (3/31-10/31)	Blueberry barren (Blueberry barren)
Central 1	5–8	2015 (9/10-10/31); 2016 (3/31-10/31)	Kettle pond shore/mixed forested edge (Pond)
Central 2	5–8	2015 (9/10-10/31); 2016 (3/31-10/31)	Deciduous hedgerow/forested edge (Hedgerow in barren)
New Black Brook Pond	5–8	2016 (3/31-10/31)	Kettle pond shore/deciduous forested edge/ blueberry barren (Pond)
New Northwest	5–8	2016 (3/31-10/31)	Coniferous hedgerow/ blueberry barren (Hedgerow in barren)

Each Anabat© was deployed in a waterproof housing enabling the detector to record while unattended for the duration of the survey. The housing suspended the Anabat© microphone downward to provide maximum protection from precipitation; to compensate for the downward position, a curved plastic joint was used to funnel sound to the microphone, allowing it to record bat calls within the airspace surrounding the detector.

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The audio sensitivity setting on Anabats© was set between 6 and 7 (on a scale of 1–10) to maximize sensitivity while limiting ambient background noise and interference. Anabat© detectors were powered by 12-volt batteries charged by solar panels. Stantec visited each detector at a maximum interval of every 3 weeks to download and store data and maintain equipment.

2.1.2 Elevated Detectors

One microphone from the SM3 (Wildlife Acoustics ©) detector on the meteorological (met) tower was coupled with an Anabat© detector which served as a source of backup data in the case that an SM3 microphone malfunctioned. Photographs of elevated detector setups are included in Appendix A.

Table 2-2. Operation dates and habitat at elevated detectors, 2015-2016.

Detector Name	Detector Height (m)	Operation Dates	Habitat (Habitat Category)
Met High	40	2016 (3/31-10/31)	Blueberry barren (Blueberry barren)
Met Mid	20	2015 (9/10-10/31); 2016 (3/31-10/31)	Blueberry barren (Blueberry barren)

The SM3 detector is waterproof and the microphones are designed for unattended monitoring. The SM3 detector was programmed to operate in "triggered .wav" mode using default trigger threshold settings as recommended by the manufacturer. The SM3 detector were powered by 12-volt batteries charged by solar panels. Stantec visited the detector at a maximum interval of every 3 weeks to download and store data and maintain equipment.

2.2 DATA ANALYSIS

For Anabat© units, potential call files were extracted from data files using CFCread® software using the software's default settings. For SM3 units, potential call files were converted to zero crossing format using Kaleidoscope Pro [with classifier version 3.1.0; "KPro"). Anabat and SM3 call files were analyzed in zero-crossing format.

2.2.1 Automated Analysis

Acoustic data from ground and elevated detectors were analyzed using 2 automated identification programs: KPro and BCID (version 2.7b; "BCID"), each approved by the USFWS for documenting northern long-eared bat species presence[1]. Results of these analyses were used to determine species presence for species that could be present at the Project. Species presence was determined based on a maximum likelihood estimator (MLE) assigned by each

[1] 2016 Range-wide Indiana Bat Summer Survey Guidelines (USFWS Guidelines) dated April 2016.

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automated program on a nightly basis. According to the USFWS Guidelines (2016) a nightly MLE of less than 0.05 indicates likely presence on that night at that sample location.

For ground detectors, automated analysis results were used to determine the percent of nights with species presence by month and by habitat. For simplification of analysis, detector sites where categorized into 3 habitats: blueberry barren, pond, and hedgerow in blueberry barren (Table 2-1).

For elevated detectors, automated analysis results were used to determine the percent of nights with species presence by month.

2.2.2 Vetting of Listed Species

It has been Stantec's experience that the automated programs sometimes misidentify call files or erroneously identify static as bat calls; therefore, Stantec visually vetted each call file identified as a listed species (Table 1-1) by either program to vet the identifications. If a call file identified as a listed species contained call characteristics that could belong to the suspected species, then the program's call identification was determined to be possible/probable, but if not, the call was assigned to the species or group with similar call characteristics. Vetted results were used to determine the plausibility of listed species presence and to determine the percent of nights with plausible presence of listed species by month.

2.2.3 Visual Analysis

Stantec visually analyzed all call files recorded by the elevated detectors to confirm that all bat passes were included in analysis of activity rates, seasonal patterns in activity, and activity versus conditions in the rotor zone. Call files containing less than two calls were eliminated from visual analysis, resulting in analysis of bat passes[2]. Results of visual analysis were used to determine species composition, detection rates, seasonal, nightly, and hourly activity levels, and to investigate relationships between activity and conditions, i.e., temperature and wind speed, in the rotor zone. Additionally, visual analysis allowed for comparability with previous acoustic work conducted in Maine.

To determine species composition, Bat passes were categorized to species when possible or to one of the following species groups[3]: MYSP, RBTB, BBSH, HB, Unknown[4] (UNKN), High Frequency

[2] Ultrasound recordings of bat echolocation may include a single call or a series of calls. A call is a single pulse of sound produced by a bat, while a bat pass is a combination of two or more pulses characteristic of normal flight or prey location ("search phase") and capture periods ("feeding buzzes").
[3] Each bat species is capable of expressing characteristic call patterns; however, overlap in certain call patterns is common among some species that call within the same frequency range. Additionally, call patterns from any species may lack sufficient detail needed for species level identification because of background noise, distance of the bat from the microphone, weather, or other environmental factors. To account for this, bat passes were characterized to species when possible, or to species group.
[4] Call sequences with less than 5 pulses, or sequences with indistinct call characteristics or overwhelming background static.

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Unknown[5] (HFUN) or Low Frequency Unknown[6] (LFUN; Table 1-1). Based on results of the visual analysis, detection rates (expressed as the number of bat passes per detector night per detector) and species composition were calculated, and seasonal, nightly, and hourly patterns in activity were summarized.

To investigate relationships between activity and conditions, i.e., temperature and wind speed, in the rotor zone, Stantec used ambient temperature and wind speed values recorded as 10-minute averages by the onsite Project met tower. Ambient temperature was recorded at a sensor 3 m agl and wind speed was recorded at a sensor 59 m agl. The timestamp of each bat pass recorded by the elevated detectors was rounded to the nearest 10 minutes to determine the corresponding temperature and wind speed conditions at the time of the bat pass.

3.0 RESULTS

3.1 GROUND DETECTORS

3.1.1 Automated Analysis

3.1.1.1 Bat Species Composition

According to KPro, LACI was detected most often (25.7% of detector-nights; n = 270) and at each detector, followed by LABO (11.4%; n = 120; Table 3-1). According to BCID, LANO was most common (16.3%; n = 171), followed by EPFU (11.3%; n = 119; Table 3-2).

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[5] Call sequences with a minimum frequency above 30 to 35 kilohertz (kHz) (possibly from LABO, PESU, or Myotis species).
[6] Call sequences with a minimum frequency below 30 to 35 kHz (possibly from EPFU, LANO, and LACI).

Table 3-1. Proportion of nights at ground detectors with species presence based on KPro, 2015-2016 (highest proportions shaded).

Detector	Detector-Nights	Species							
		EPFU	LANO	LACI	LABO	PESU	MYLE	MYLU	MYSE
Met Low	250	6.0%	1.2%	15.6%	1.6%	0.4%	0.8%	0.0%	0.8%
Central 1	250	2.0%	4.0%	27.2%	18.8%	0.0%	2.0%	13.2%	0.0%
Central 2	262	9.9%	1.9%	16.0%	14.5%	0.8%	0.0%	0.8%	0.8%
New Black Brook Pond	139	10.1%	9.4%	38.1%	15.8%	0.7%	0.0%	3.6%	3.6%
New Northwest	149	4.0%	2.7%	45.6%	6.0%	0.0%	0.7%	4.0%	4.0%
Total	**1,050**	**6.3%**	**3.3%**	**25.7%**	**11.4%**	**0.4%**	**0.8%**	**4.4%**	**1.4%**

Table 3-2. Proportion of nights at ground detectors with species presence based on BCID, 2015-2016 (highest proportions shaded).

Detector	Detector-Nights	Species							
		EPFU	LANO	LACI	LABO	PESU	MYLE	MYLU	MYSE
Met Low	250	8.8%	9.6%	4.8%	2.0%	1.6%	1.2%	1.6%	0.8%
Central 1	250	4.4%	15.2%	15.2%	8.8%	4.4%	9.2%	24.0%	5.2%
Central 2	262	16.0%	14.5%	5.0%	8.8%	5.7%	4.2%	2.3%	3.1%
New Black Brook Pond	139	23.0%	33.1%	7.2%	10.1%	5.8%	0.7%	11.5%	5.0%
New Northwest	149	8.1%	16.8%	16.1%	10.7%	2.7%	2.7%	9.4%	6.0%
Total	**1,050**	**11.3%**	**16.3%**	**9.2%**	**7.6%**	**4.0%**	**4.0%**	**9.5%**	**3.7%**

3.1.1.2 Bat Activity Timing

Based on KPro, among months, MYLE was present on the greatest proportion of nights in May, EPFU, LACI, and MYLU were present on the greatest proportion of nights in July, and LANO, LABO, PESU, and MYSE were present on the greatest proportion of nights in August (Figure 3-1). Based on BCID, EPFU, LANO, LACI, and LABO were present on the greatest proportion of nights in July, MYLE, MYLU, and MYSE were present on the greatest proportion of nights in August, and PESU were present on the greatest proportion of nights in September (Figure 3-2). Based on both programs, the month with greatest proportion of detector nights with bat activity was July.

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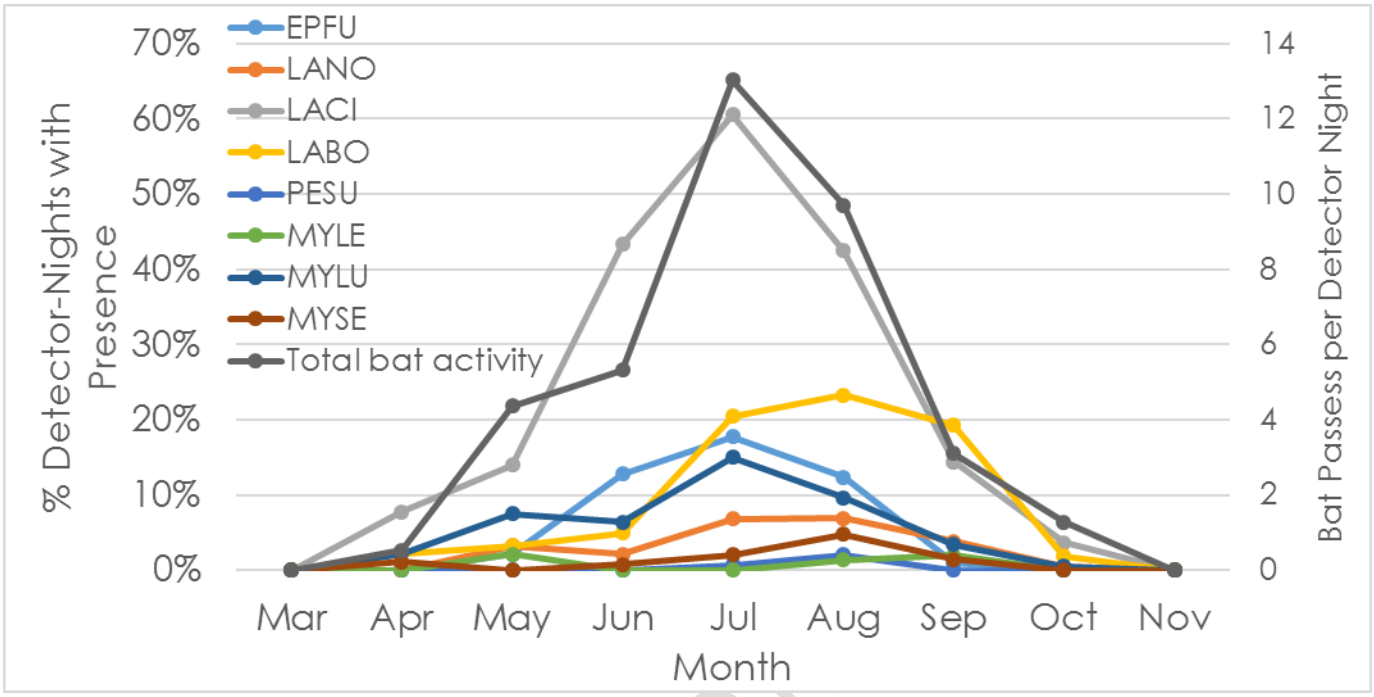


Figure 3-1. Activity timing at ground detectors by month based on the proportion of detector-nights with species presence as determined by KPro, 2015-2016.

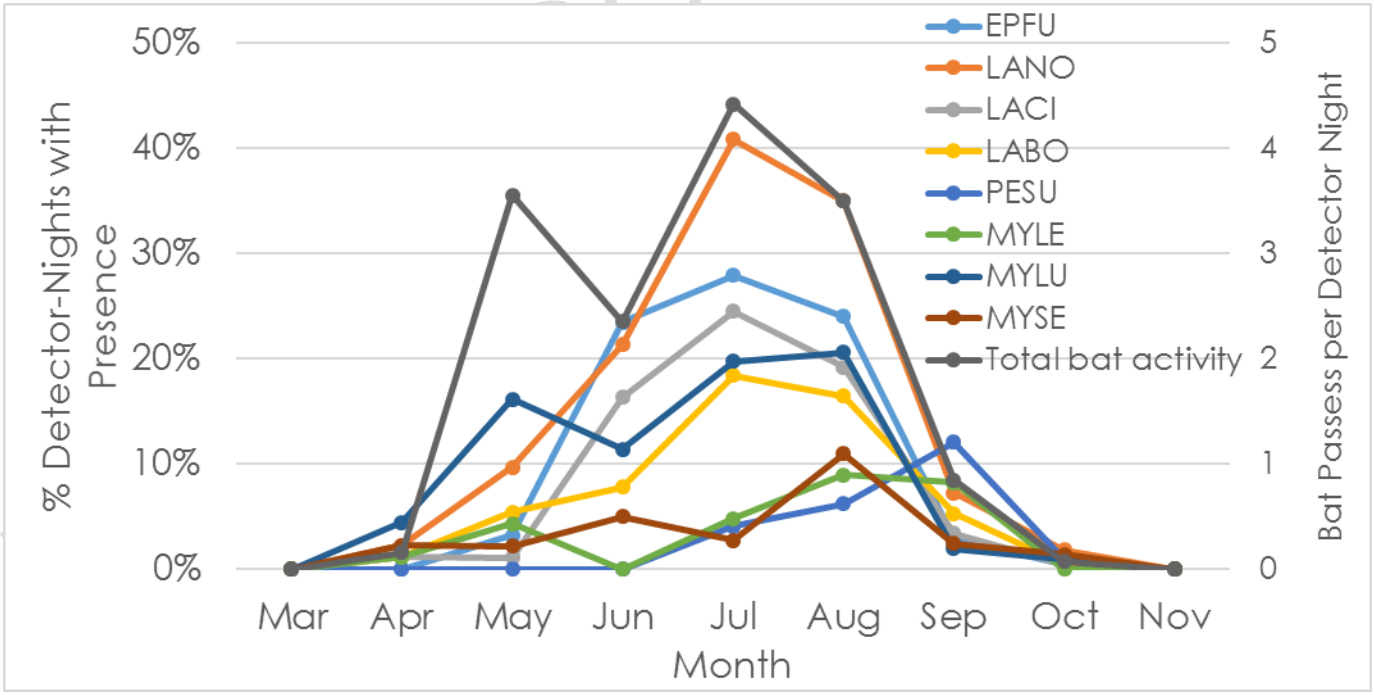


Figure 3-2. Activity timing at ground detectors by month based on the proportion of detector-nights with species presence as determined by BCID, 2015-2016.

3.1.1.3 Bat Activity and Habitat

According to KPro and BCID, the greatest proportion of detector-nights with bat species presence occurred in the pond habitat (72.2% of detector-nights sampled in pond habitat; n = 281 and 90.0%; n = 350, respectively), followed by the hedgerow in barren habitat (52.8%; n = 217 and 64.2%; n = 264, respectively). The lowest proportion of detector-nights with species presence occurred in the blueberry barren habitat (26.4%; n = 66 and 30.4%; n = 76, respectively). LACI was present on the greatest proportion of nights within all three habitats, followed by EPFU in the blueberry barren habitat and LABO in the hedgerow and pond habitats. Among habitats, based on KPro, the pond habitat had the highest species richness; based on BCID each species was present within each habitat (Table 3-3; Table 3-4).

MYLE and MYLU were present on the greatest proportion of detector nights in pond habitats according to both programs. MYSE was present on the greatest proportion of detector nights in hedgerow in barren habitat according to KPro and in pond habitat according to BCID (Table 3-3; Table 3-4).

Table 3-3. Proportion of nights with species presence at ground detectors by habitat based on KPro, 2015-2016 (highest proportions shaded).

Habitat	Detector-nights	Species								
		EPFU	LANO	LACI	LABO	PESU	MYLE	MYLU	MYSE	TOTAL
blueberry barren	250	6.0%	1.2%	15.6%	1.6%	0.4%	0.8%	0.0%	0.8%	**26.4%**
hedgerow in barren	411	7.8%	2.2%	26.8%	11.4%	0.5%	0.2%	1.9%	1.9%	**52.8%**
pond	389	4.9%	5.9%	31.1%	17.7%	0.3%	1.3%	9.8%	1.3%	**72.2%**
Total	**1,050**	**6.3%**	**3.3%**	**25.7%**	**11.4%**	**0.4%**	**0.8%**	**4.4%**	**1.4%**	

Table 3-4. Proportion of nights with species presence at ground detectors by habitat based on BCID, 2015-2016 (highest proportions shaded).

Habitat	Detector-nights	Species								
		EPFU	LANO	LACI	LABO	PESU	MYLE	MYLU	MYSE	TOTAL
blueberry barren	250	8.8%	9.6%	4.8%	2.0%	1.6%	1.2%	1.6%	0.8%	**30.4%**
hedgerow in barren	411	13.1%	15.3%	9.0%	9.5%	4.6%	3.6%	4.9%	4.1%	**64.2%**
pond	389	11.1%	21.6%	12.3%	9.3%	4.9%	6.2%	19.5%	5.1%	**90.0%**
Total	**1,050**	**11.3%**	**16.3%**	**9.2%**	**7.6%**	**4.0%**	**4.0%**	**9.5%**	**3.7%**	

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3.1.2 Vetting of Listed Species

3.1.2.1 Listed Bat Species Composition

Vetting of ground detector call files identified as MYLE, MYLU, and MYSE generally confirmed the plausibility of presence of each species at multiple sites (Table 3-5). There were call files identified as a listed species by both programs that were determined to be a combination of noise or high frequency portions of non-listed species such as tri-colored bat or eastern red bat; however, there were call files identified by both programs that contained call characteristics consistent with identified listed species, indicating possible/probable presence of those species.

Table 3-5. Proportion of nights with listed species presence based on KPRO, BCID, and KPro or BCID plus vetting at ground detectors, 2015-2016 (highest propostions shaded).

Detector	Detector -Nights	MYLE			MYLU			MYSE		
		Kpro	BCID	KPRo or BCID + vetting	Kpro	BCID	KPRo or BCID + manual vetting	Kpro	BCID	KPRo or BCID + vetting
Met Low	250	0.8%	1.2%	0.0%	0.0%	1.6%	1.6%	0.8%	0.8%	0.0%
Central 1	250	2.0%	9.2%	0.0%	13.2%	24.0%	24.4%	0.0%	5.2%	0.0%
Central 2	262	0.0%	4.2%	0.8%	0.8%	2.3%	2.7%	0.8%	3.1%	0.4%
New Black Brook Pond	139	0.0%	0.7%	0.7%	3.6%	11.5%	11.5%	3.6%	5.0%	2.9%
New Northwest	149	0.7%	2.7%	0.7%	4.0%	9.4%	8.7%	4.0%	6.0%	4.7%
Total	**1,050**	**0.8%**	**4.0%**	**0.4%**	**4.5%**	**9.5%**	**9.6%**	**1.4%**	**3.7%**	**1.1%**

Of the three listed species, MYLU was detected most frequently at ground detectors, and after vetting was considered plausibly present during 1.6 – 24.4% (n = 4 – 61) of detector-nights. After vetting, MYLE were plausibly present during 0 – 0.8% (n = 0 – 2) of detector-nights and MYSE were plausibly present during 0 – 4.7% (n = 0 – 7) of detector-nights. Overall, the percent of detector-nights with possible/probable presence of listed species after vetting represents a small proportion of total detector-nights sampled (11.1%; n = 117), largely represented by MYLU presence (9.6%; n = 101; Table 3-5).

3.1.2.2 Listed Bat Species Activity Timing

For nights with listed species presence as determined by either KPro or BCID and vetting, seasonal patterns differed slightly among listed species. Relative to other months, MYLU were detected on the greatest proportion of detector nights in July and August. MYSE were detected on the greatest proportion of detector nights in August and MYLE were detected on the greatest proportion of detector nights in September (Figure 3-3). Of the nights with possible/probable MYSE, MYLE, and MYLU presence after vetting, 68% (n = 79) occurred during the peak activity months July – September.

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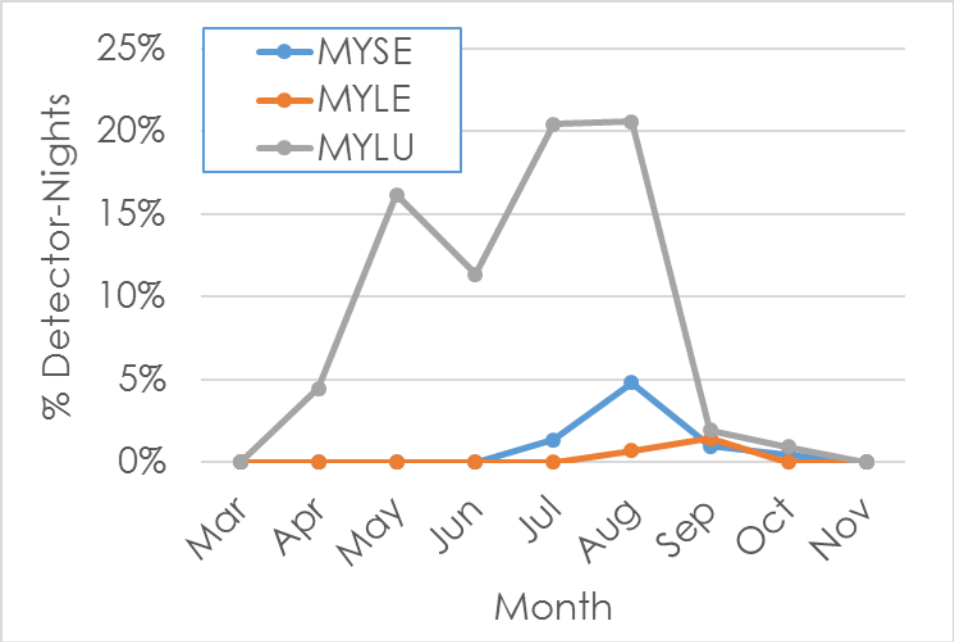


Figure 3-3. Proportion of nights at ground detectors with listed species presence based on KPro and/or BCID after vetting, 2015-2016.

3.2 ELEVATED DETECTORS

3.2.1 Automated Analysis

3.2.1.1 Bat Species Composition

Based on KPro, LACI was detected most often (19.7% of detector-nights; n = 93) followed by EPFU (8.2%; n = 39; Table 3-6). According to BCID, LANO was detected most often (12.7%; n = 60), followed by LACI (12.3%; n = 58; Table 3-7).

Table 3-6. Proportion of nights with species presence at elevated detectors based on KPro, 2015-2016 (highest proportions shaded).

Detector	Detector-Nights	Species							
		EPFU	LANO	LACI	LABO	PESU	MYLE	MYLU	MYSE
Met High	213	0.0%	2.3%	21.1%	0.9%	0.0%	0.0%	0.0%	0.0%
Met Mid	260	15.0%	1.9%	18.5%	4.6%	0.0%	0.0%	1.2%	0.4%
Total	**473**	**8.2%**	**2.1%**	**19.7%**	**3.0%**	**0.0%**	**0.0%**	**0.6%**	**0.2%**

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Table 3-7. Proportion of nights with species presence at elevated detectors based on BCID, 2015-2016 (highest proportions shaded).

Detector	Detector-Nights	Species							
		EPFU	LANO	LACI	LABO	PESU	MYLE	MYLU	MYSE
Met High	213	4.2%	8.5%	8.9%	1.9%	0.0%	0.0%	0.5%	0.0%
Met Mid	260	14.6%	16.2%	15.0%	6.9%	3.8%	0.8%	4.2%	0.4%
Total	**473**	**9.9%**	**12.7%**	**12.3%**	**4.7%**	**2.1%**	**0.4%**	**2.5%**	**0.2%**

3.2.1.2 Bat Activity Timing

Based on KPro, among months, EPFU and MYLU were present on the greatest proportion of nights in July, LANO, LACI, and LABO were present on the greatest proportion of nights in August, and MYSE were present on the greatest proportion of nights in September. Based on KPro, PESU or MYLE were not detected by elevated detectors (Figure 3-4). Based on BCID, LACI were present on the greatest proportion of nights in July, EPFU, LANO, LABO, MYLE, and MYLU were present on the greatest proportion of nights in August, and PESU and MYSE were present on the greatest proportion of nights in September (Figure 3-5).

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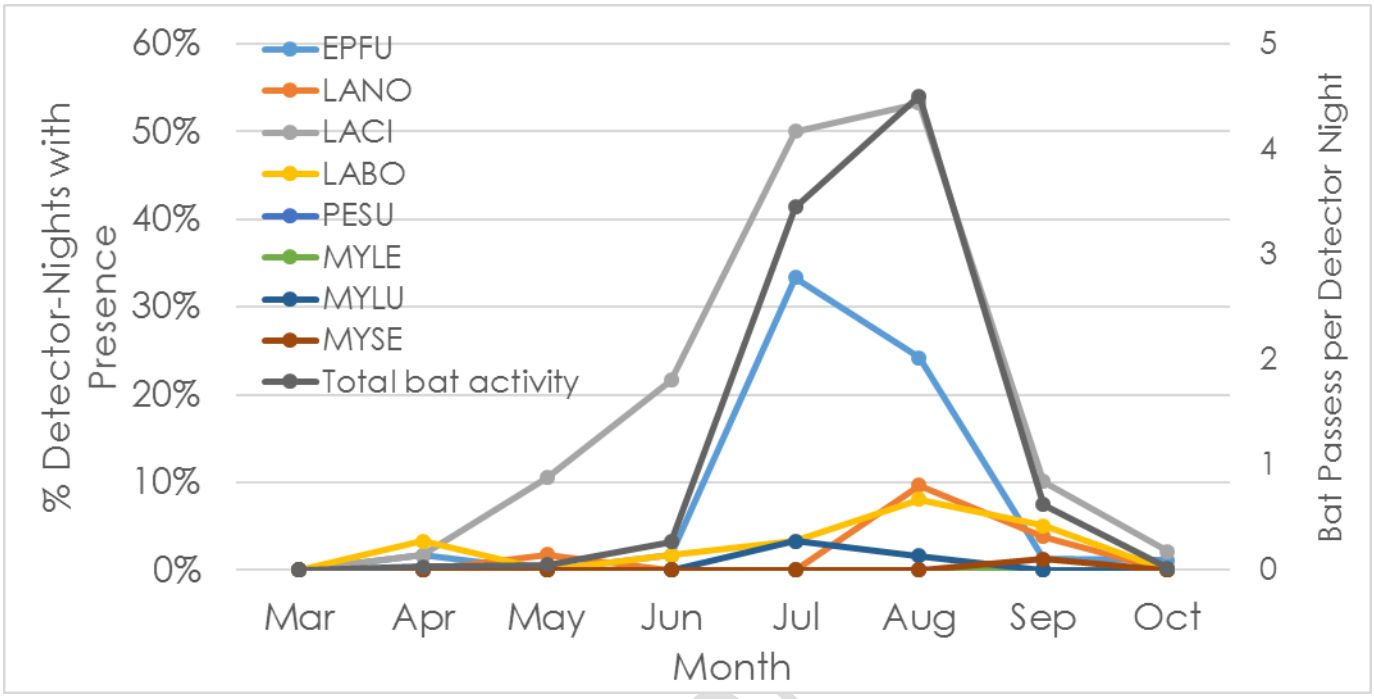


Figure 3-4. Activity timing by month at elevated detectors based on the proportion of detector-nights with species presence as determined by KPro, 2015-2016.

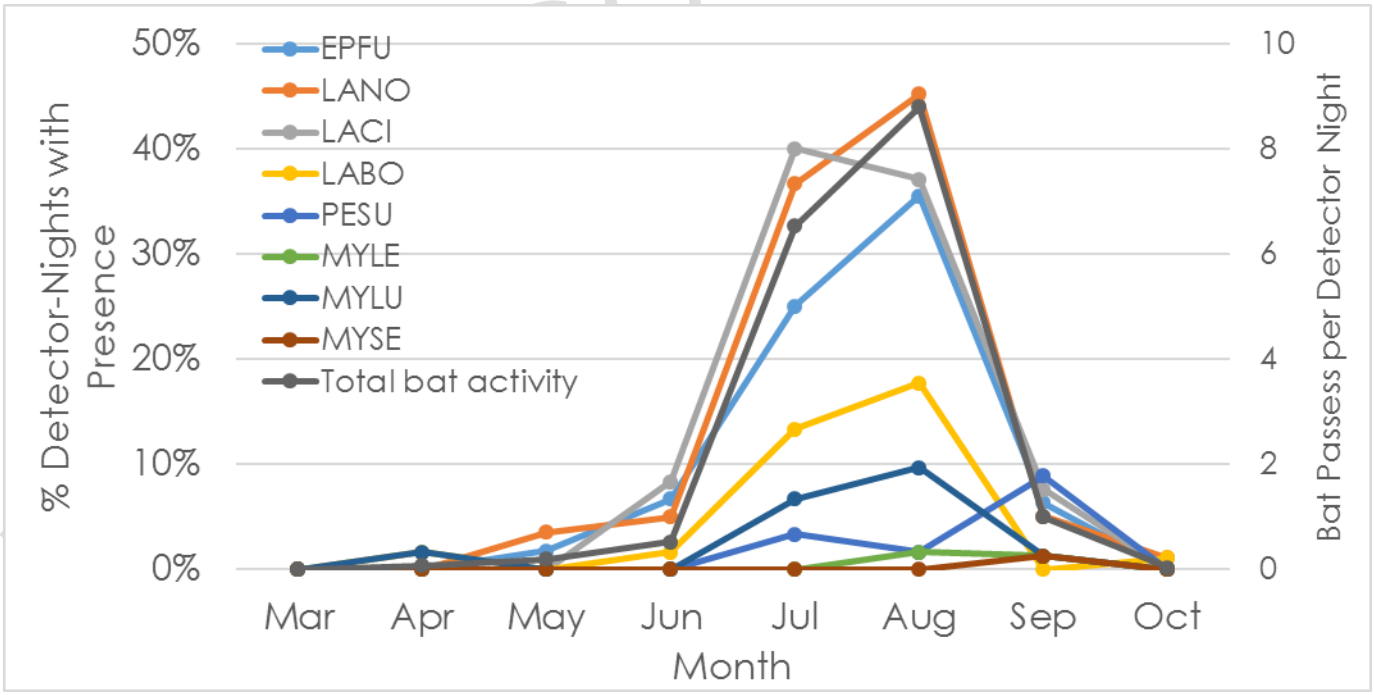


Figure 3-5. Activity timing by month at elevated detectors based on the proportion of detector-nights with species presence as determined by BCID, 2015-2016.

3.2.2 Vetting of Listed Species

3.2.2.1 Listed Bat Species Composition

Vetting of call files identified by either program as MYLE, MYLU, and MYSE generally confirmed the plausibility of presence of MYLU at low levels at both elevated detectors and of all 3 species at Met Mid (Table 3-8). Both programs identified some listed species call files that were determined to be a combination of noise or high frequency portions of non-listed species such as tri-colored bat or eastern red bat. However, both programs identified enough call files as a listed species that contained call characteristics that could belong to those species, indicating possible/probable presence of those species.

Of the three state-listed species, MYLU was detected most frequently, and after vetting was considered plausibly present during 0.5% (n = 1) of detector-nights sampled at Met High and 3.8% (n = 10) of detector-nights sampled at Met Mid. After vetting of KPro and BCID data, MYLE and MYSE were each plausibly present during 0.4% (n = 1) of detector-nights sampled at Met Mid, but not at Met High. Overall, the percent of detector-nights with possible/probable presence of listed species after vetting represents a small proportion of total detector-nights sampled (2.7%; n = 13 [2.3%; n = 11 represented by MYLU presence]; Table 3-8).

Table 3-8. Proportion of nights with listed species presence at elevated detectors based on KPRO, BCID, and KPro and/or BCID plus vetting, 2015-2016.

Detector	Detector-Nights	MYLE			MYLU			MYSE		
		Kpro	BCID	KPRo or BCID + vetting	Kpro	BCID	KPRo or BCID + manual vetting	Kpro	BCID	KPRo or BCID + vetting
Met High	213	0.0%	0.0%	0.0%	0.0%	0.5%	0.5%	0.0%	0.0%	0.0%
Met Mid	260	0.0%	0.8%	0.4%	0.0%	4.2%	3.8%	0.4%	0.4%	0.4%
Total	**473**	**0.0%**	**0.4%**	**0.2%**	**0.0%**	**2.5%**	**2.3%**	**0.2%**	**0.2%**	**0.2%**

Based on either KPro or BCID plus vetting, MYLE had plausible presence during 1 detector-night in August and MYSE had plausible presence during 1 detector-night in September. MYLU occurred on the greatest proportion of nights in August (8%; Figure 3-6). Of the nights with possible/probable MYLU presence, 82% (n = 9) occurred in July and August.

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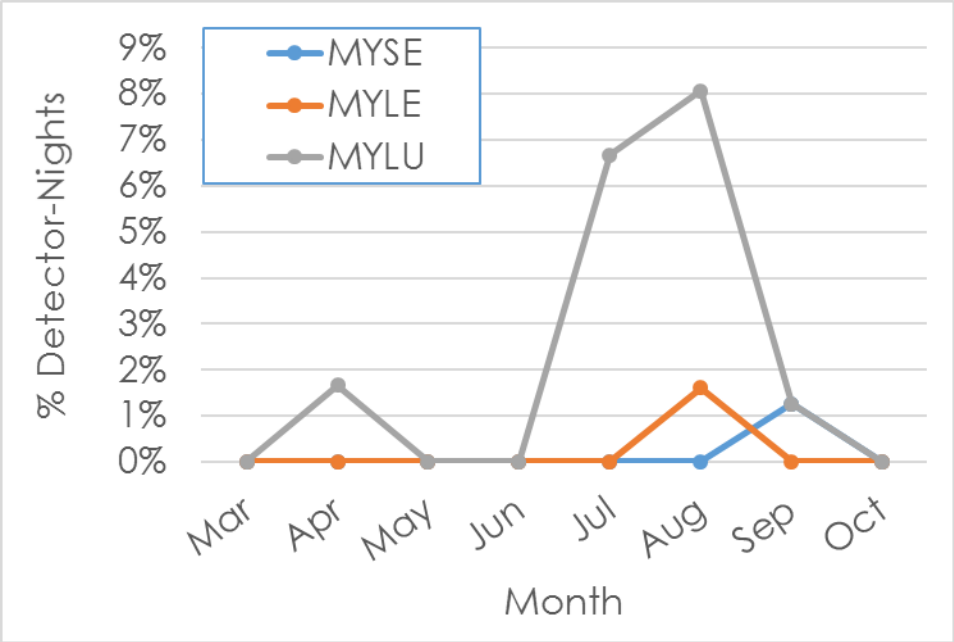


Figure 3-6. Proportion of nights with listed species presence at elevated detectors based on KPro and/or BCID after vetting, 2015-2016.

3.2.3 Visual analysis

3.2.3.1 Bat Species Composition

Most bat activity documented at the elevated detectors was represented by the BBSH species group (42.6%; n = 454), of which 79% (n =358) of passes were recorded at Met Mid. Bat passes identified to species included LACI (n = 305), EPFU (n = 147), LANO (n = 101), LABO (n = 33), and PESU (n = 3). The MYSP[7] species group represented 2.1% (n = 22) of bat passes recorded at elevated detectors. LFUN passes made up 91% of the UNKN passes recorded at elevated detectors (n = 217) and HFUN made up 9% (n = 21).

Table 3-9. Proportion of detections by species group at elevated detectors based on visual analysis, 2015-2016 (highest proportions shaded).

Detector	Species Group						Total
	BBSH	HB	MYSP	RBTB	HFUN	LFUN	
Met High	96	134	3	3	7	121	364
Met Mid	358	171	19	43	14	96	701
Total	**454**	**305**	**22**	**46**	**21**	**217**	**1,065**
Species Group Composition %	**42.6%**	**28.6%**	**2.1%**	**4.3%**	**2.0%**	**20.4%**	

[7] Myotis species are not identified to species during manual analysis due to overlapping call characteristics among species within this group.

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3.2.3.2 Bat Activity Timing

Elevated detectors functioned on 98% (n = 473) of the total calendar nights during the survey periods. Elevated detectors recorded 1,065 bat passes over the 2015 –2016 survey periods resulting in an overall detection rate of 2.3 passes/detector-night (Appendix B Tables 1 and 2; Table 3-10).

Table 3-10. Summary of survey effort and results at elevated detectors based on visual analysis, 2015-2016.

Detector Name	Operation Dates	Calendar Nights	Detector-Nights[1]	Recorded Sequences	Detection Rate[2]	Maximum Sequences recorded[3]
Met High	2016 (3/31-10/31)	215	213	364	1.7	39
Met Mid	2015 (9/10-10/31); 2016 (3/31-10/31)	267	260	701	2.7	35
Overall Results		***482***	***473***	***1,065***	***2.3***	
[1] One detector-night is equal to a one detector successfully operating throughout the night.						
[2] Number of bat echolocation sequences recorded per detector-night.						
[3] Maximum number of bat passes recorded from any single detector for a detector-night.						

Met Mid had proportionally higher monthly detection rates than Met High (Figure 3-7). At both detectors detection rates peaked in August (10.2 passes/detector night at Met Mid and 7.4 passes/detector night at Met High; Table 3-11). At both detectors, 88% (n = 937) of bat passes occurred during the peak activity months July and August (Table 3-11). The earliest recorded bat pass at elevated detectors occurred on 24 April 2016 and the latest occurred on 8 October 2016, and both were produced by MYSP. However, most MYSP and HFUN activity recorded at the elevated detectors (63%; n = 27) occurred during July and August (Appendix B Tables 1 and 2).

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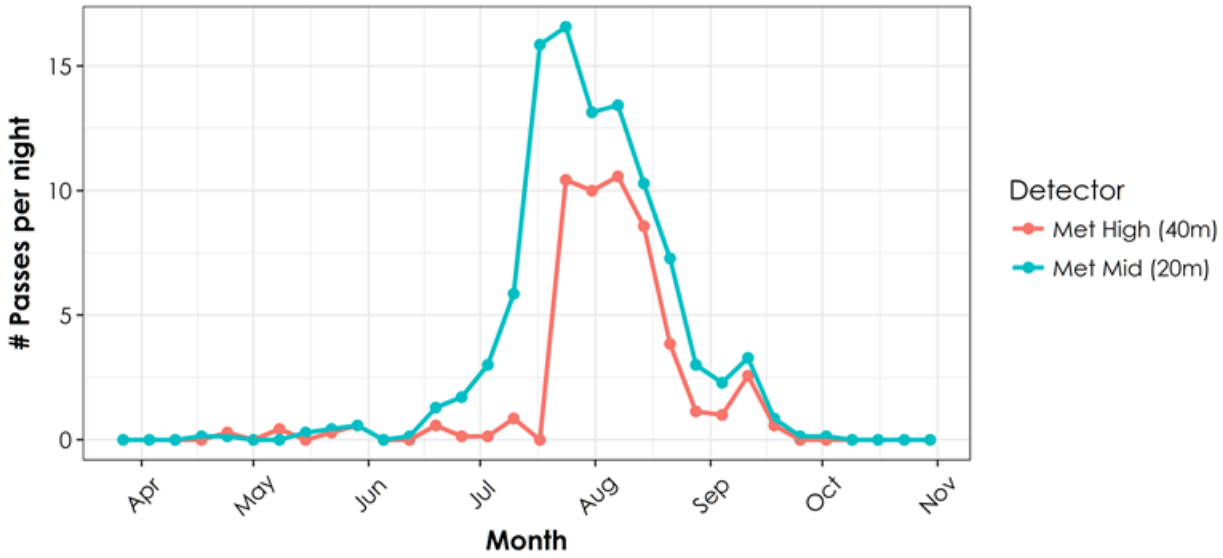


Figure 3-7. Seasonal bat detection rates at elevated detectors based on visual analysis, 2016.

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Table 3-11. Monthly activity rates at elevated detectors based on visual analysis, 2015-2016 (highest rates shaded).

Month	Operation Dates	Calendar Nights	Detector-Nights[1]	Recorded Passes	Detection Rate[2]	Maximum Passes recorded[3]
Met High						
March 2016	3/31–3/31	1	1	0	0.0	0
April 2016	4/1–4/30	30	30	2	0.1	1
May 2016	5/1–5/31	31	31	6	0.2	2
June 2016	6/1–6/30	30	30	8	0.3	1
July 2016	7/1–7/31	31	29	89	3.1	22
August 2016	8/1–8/31	31	31	229	7.4	39
September 2016	9/1–9/30	30	30	30	1.0	15
October 2016	10/1–10/31	31	31	0	0.0	0
Met High Results		***215***	***213***	***364***	***1.7***	
Met Mid						
September 2015	9/10–9/30	21	19	0	0.0	0
October 2015	10/1–10/31	31	31	2	0.1	2
March 2016	3/31–3/31	1	1	0	0.0	0
April 2016	4/1–4/30	30	30	2	0.1	1
May 2016	5/1–5/31	31	26	5	0.2	2
June 2016	6/1–6/30	30	30	23	0.8	4
July 2016	7/1–7/31	31	31	303	9.8	25
August 2016	8/1–8/31	31	31	316	10.2	35
September 2016	9/1–9/30	30	30	49	1.6	17
October 2016	10/1–10/31	31	31	1	0.0	1
Met Mid Results		***267***	***260***	***701***	***2.7***	
Overall Results		***482***	***473***	***1,065***	***2.3***	

[1] One detector-night is equal to a one detector successfully operating throughout the night.

[2] Number of bat echolocation sequences recorded per detector-night.

[3] Maximum number of bat passes recorded from any single detector for a detector-night.

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On a nightly basis, detection rates peaked 1 hour after sunset then declined until sunrise (Figure 3-8). Species group composition was relatively consistent regardless of hour past sunset. Seventy-two percent of the BBSH species group, 87% of the HB species group, and 77% of all bat passes occurred within the first 3 hours after sunset.

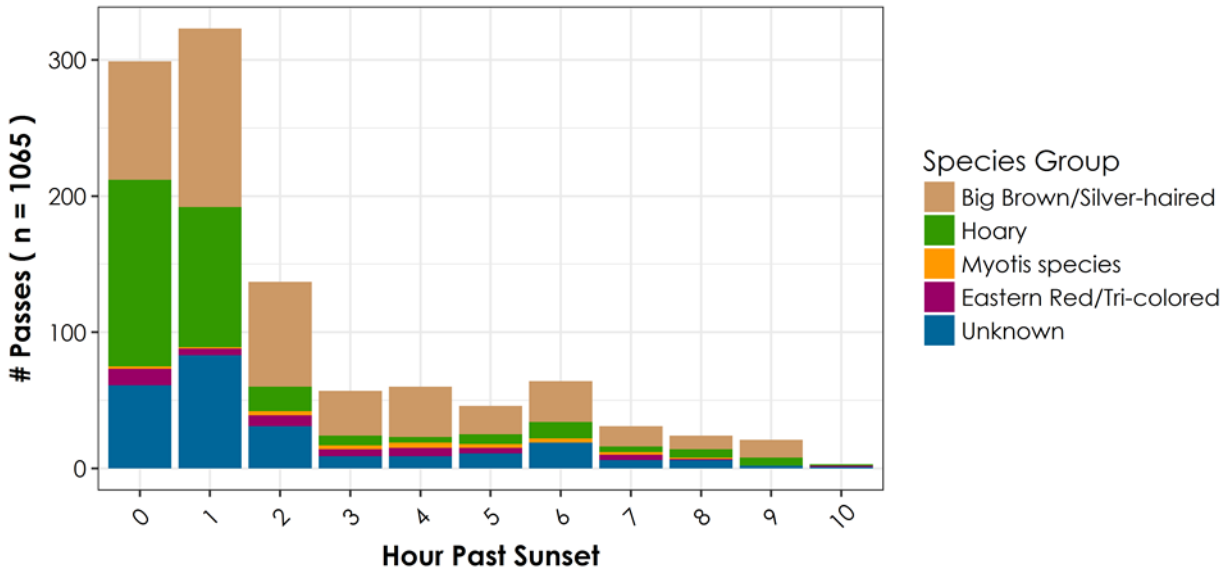


Figure 3-8. Bat passes at elevated detectors by species and hour after sunset based on visual analysis, 2015-2016.

3.2.3.3 Weather Data and Bat Activity Patterns

Ten-minute average wind speed and temperature data were available for 1,014 bat passes[8]. Eighty-three percent of bat passes (n = 839)occurred when mean wind speed was ≤ 6.9 m/s (Figure 3-9,) 96% (n = 975) occurred when mean temperature was ≥ 10 degrees Celsius (°C; Figure 3-10, Figure 3-11), and 80% occurred when both conditions were present. These conditions occurred during 40% (n = 6,544) of the total 10-minute increments, and most often in the months of July, August, and September (68%; n = 4,418). Mean temperature was >10 °C during 55% (n = 9,004) of the total 10-minute increments. Species composition was relatively consistent regardless of wind speed and temperature. MYSP was not recorded when mean wind speed was > 7.4 m/s.

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[8] 10-minute average wind or temperature values were not available for 51 bat passes.

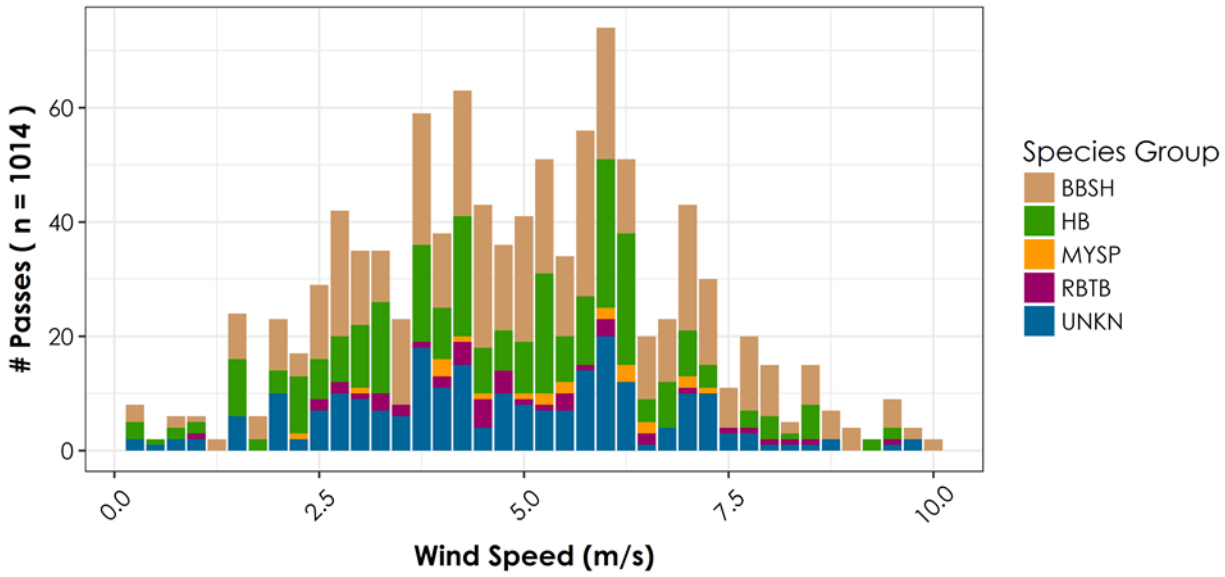


Figure 3-9. Number of bat passes per 10-minute average wind speed value at elevated detectors based on visual analysis, 2015-2016.

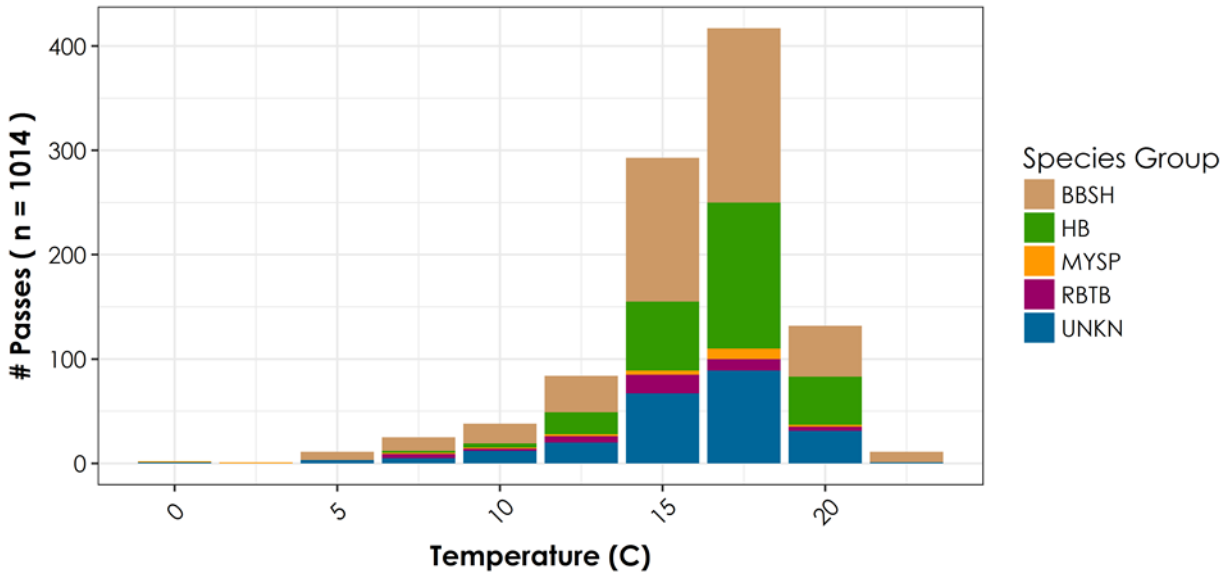


Figure 3-10. Number of bat passes per 10-minute average temperature value at elevated detectors based on visual analysis, 2015-2016.

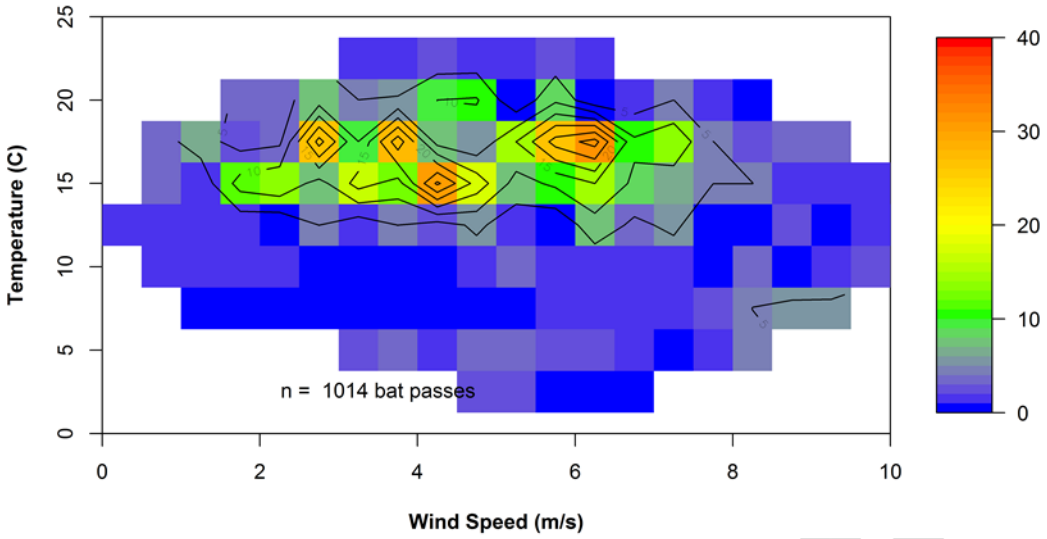


Figure 3-11. Heat map illustrating the number of recorded bat passes per 10-minute average temperature and wind speed at elevated detectors based on visual analysis, 2015-2016.

4.0 DISCUSSION

At ground detectors, detection rates of each bat species peaked in July and August, with the exception of small-footed bat, which also peaked in May according to KPro and August according to BCID, and PESU which peaked in September according to BCID. The greatest proportion of detector-nights with bat species presence occurred in the pond habitat, followed by the hedgerow in barren habitat. Of the three habitats, pond habitat had the highest species richness. The lowest proportion of detector-nights with species presence occurred in the blueberry barren habitat. Species composition varied by habitat, with LACI detected on the greatest proportion of nights within all three habitats.

Pre-White Nose Syndrome, Myotis bat activity dominated ground detector acoustic datasets in Maine (Peterson 2017). Post-WNS effects on Myotis bats, there is some evidence that other bat species including LACI are replacing the temporal or spatial niches of Myotis; for example, LACI have been shown to forage longer after sunset than during pre-WNS (Jachowski et al. 2014). Results at DOW indicated that LACI and bats in the BBSH group were most common, and foraged up to 9 hours after sunset. Myotis species were detected on low proportions of nights. Of the Myotis species, small-footed bat and little-brown bat were present on the greatest proportion of detector nights in the pond habitat. Northern long-eared bat was present on the greatest proportion of detector nights in the hedgerow in barren habitat according to KPro and in the pond habitat according to BCID. The presence of Myotis near water is consistent with the species' known behaviors.

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Of the elevated detectors, overall detection rates were lower at Met High (34% of bat passes) than Med Mid (66% of bat passes), indicating that bat activity is lower within the rotor zone (40 m agl) than at or below 20 m agl. This is consistent with spatial activity patterns at other wind projects with detectors near tree canopy and rotor height. Detection rates at elevated detectors peaked in August, and most activity at the elevated detectors were from BBSH and HB groups, which is expected based on their migratory behavior and consistent with species composition documented with detectors near rotor height at other proposed and operational wind projects.

Temporal patterns in activity also were similar to those documented at other proposed and operational projects, with most bat activity occurring at the elevated detectors in July and August, and most Myotis activity occurring at elevated detectors during this timeframe. Within nights, 77% of activity by all bats occurred within 3 hours after sunset. As at other operational wind projects in Maine and in the East, the greatest proportion of fatalities at DOW would be expected to be represented by the long-distance migratory bats (LACI, LABO, and LANO). Myotis bat fatalities are expected to be low regardless, and implementation of avoidance measures may reduce these to a discountable level. To date, 18 Myotis fatalites have been documented at 6 operating wind projects in Maine (Normandeau 2010; Stantec 2008; Stantec 2010; Stantec 2012; Stantec 2014; and TetraTech 2015), with the most recent fatality in 2014 (TetraTech 2015). Most Myotis mortalities were MYLU found in July (n = 5) and August (n = 9), but some were also found in other months (April (n = 1), June (n = 1), and September (n = 2)). These 18 MYSP reflect 11.5% of total bats found all operational wind projects in Maine with publicly available fatality data. Since the occurrence of WNS in Maine in 2010 – 2011, 11 Myotis bat fatalities have been documented, representing 7.1% of total bats found. Operational adjustment during time periods and conditions when activity from these bats occurred should substantially minimize risk to state-listed bat species.

Bat activity patterns related to conditions were similar to those observed at other studies, i.e., bat activity was positively correlated with nightly mean temperatures and negatively correlated with average nightly wind speed (Fiedler 2004, Reynolds 2006). Bat activity was substantially reduced at very high wind speeds (> 6.5 m/s) and very low wind speeds (< 2 m/s) wind speeds. If a hypothetical curtailment regime was implemented to address periods of greatest bat activity during the 2015-2016 bat study at DOW, consisting of feathering turbines during the active periods of July and August, within 6 hours of sunset, when wind speed was < 6.9 m/s (the USFWS's current standard avoidance cut in speed), and temperature was >10 °C, 66% of bat passes at the elevated detectors would have been avoided and 45% of the state-listed bat passes would have been avoided. MDIFW currently recommends 6.0 m/s as a curtailment threshold from 20 April to 15 October but does not recommend a temperature or time of night threshold. Curtailing at 6.0 m/s from April to October would have avoided 67% of bat passes at the elevated detectors. These data suggest that further refinement of MDIFW's recommendations could greatly reduce bat impacts while maximizing electrical generation at the Project.

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4.1 CONCLUSIONS

As measured using acoustic detectors at DOW in two bat activity periods spanning two calendar years, bat detection rates, species composition, and activity patterns related to habitat and conditions are similar to what has been documented at other proposed and operational wind energy projects in Maine and in the Northeast. Bat fatality patterns such as seasonal timing and species composition of mortality at DOW are expected to be similar to those documented at operational wind energy projects in Maine and in the Northeast with no avoidance measures implemented. Based on this fairly robust and site-specific acoustic dataset, it is reasonable to expect that operational adjustment during the periods of greatest bat activity: seasonal periods (July and August), time periods (within 6 hours of sunset), wind conditions (<6.9 m/s) and temperature conditions (>10 °C), would greatly reduce potential impacts to bats at the site. Standard monitoring of bat mortality during the first year of operations should be implemented to evaluate the effectiveness of such a measure if implemented.

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5.0 REFERENCES

Fiedler, J. K. 2004. Assessment of bat mortality and activity at Buffalo Mountain Windfarm, eastern Tennessee. Thesis, University of Tennessee, Knoxville, Tennessee, USA.

Gawler, S., and Cutko, A. 2010. Natural Landscapes of Maine: A Guide to Natural Communities and Ecosystems. Maine Natural Areas Program, Augusta.

Jachowski, D. S., C. A. Dubony, L. S. Coleman, W. M. Ford, E. R. Britzke, and J. L. Rodrigue. 2014. Disease and community structure: white-nose syndrome alters spatial and temporal niche partitioning in sympatric bat species. Diversity and Distributions (2014) 1 – 14.

MDIFW (Maine Department of Inland Fisheries and Wildlife). 2005. Maine's Comprehensive Wildlife Conservation Strategy. Augusta, Maine.

MDFIW. 2015. Curtailment Policy and Wind Power Preconstruction Study Recommendations. June 2015.

MDIFW. 2016. Endangered and threatened Wildlife. <http://www.maine.gov/ifw/wildlife/endangered>. Accessed 21 December 2016.

Maine Geological Survey. 2003. Maine's Glacial Deltas. <http://www.maine.gov/dacf/mgs/explore/surficial/facts/dec03.pdf>. Accessed 25 January 2017.

Normandeau Associates. 2010. Stetson Mountain II Wind Project Year 1 Post-Construction Avian and Bat Mortality Monitoring. Prepared for First Wind, LLC.

Peterson, T. S. 2017. Unprecedented change in northeastern bats: acoustic evidence of the widespread effects of white-nose syndrome. Presentation during proceedings of the conference Adapt, Adopt, Advance: Resiliency in Natural Resource Management, Bangor, Maine, 8 Mar – 10 Mar 2017.

Reynolds, D.S. 2006. Monitoring the potential impacts of a wind development site on bats in the Northeast. Journal of Wildlife Management 70(5):1219–1227.

Stantec. 2008. Spring, Summer, and Fall Post-Construction Bird and Bat Mortality Study at the Mars Hill Wind Farm, Maine. Unpublished report prepared for UPC Wind Management, LLC.

Stantec. 2010. Stetson I Mountain Wind Project Year 1 Post-Construction Monitoring Report, 2009, for the Stetson Mountain Wind Project. Prepared for First Wind Management, LLC.

Stantec. 2012. 2011 Post-Construction Monitoring Report, Kibby Wind Power Project, Franklin

County, Maine. Prepared for TransCanada Hydro Northeast, Inc.

Stantec Consulting. 2014. Bull Hill Year 1 Post-Construction Wildlife Monitoring Report, 2013. Prepared for First Wind, LLC.

TetraTech. 2015. Post-construction Monitoring Report 2014. Spruce Mountain Wind Project, Woodstock, Maine. Prepared for Patriot Renewables and Spruce Mountain Wind. Tetra Tech, Inc. Portland, Maine.

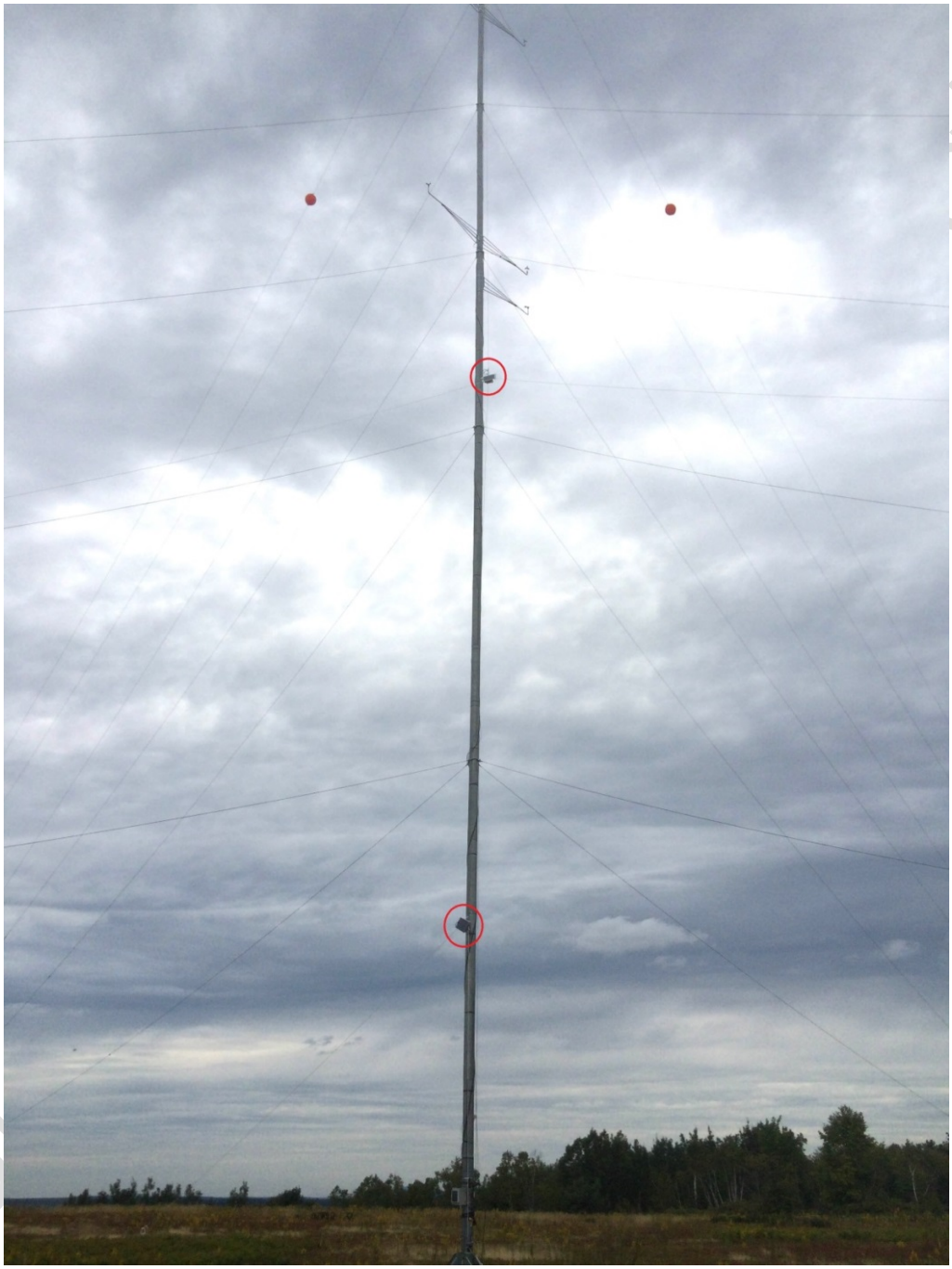
U.S. Fish and Wildlife Service. 2016. 2016 Range-Wide Indiana Bat Summer Survey Guidelines. April 2016.

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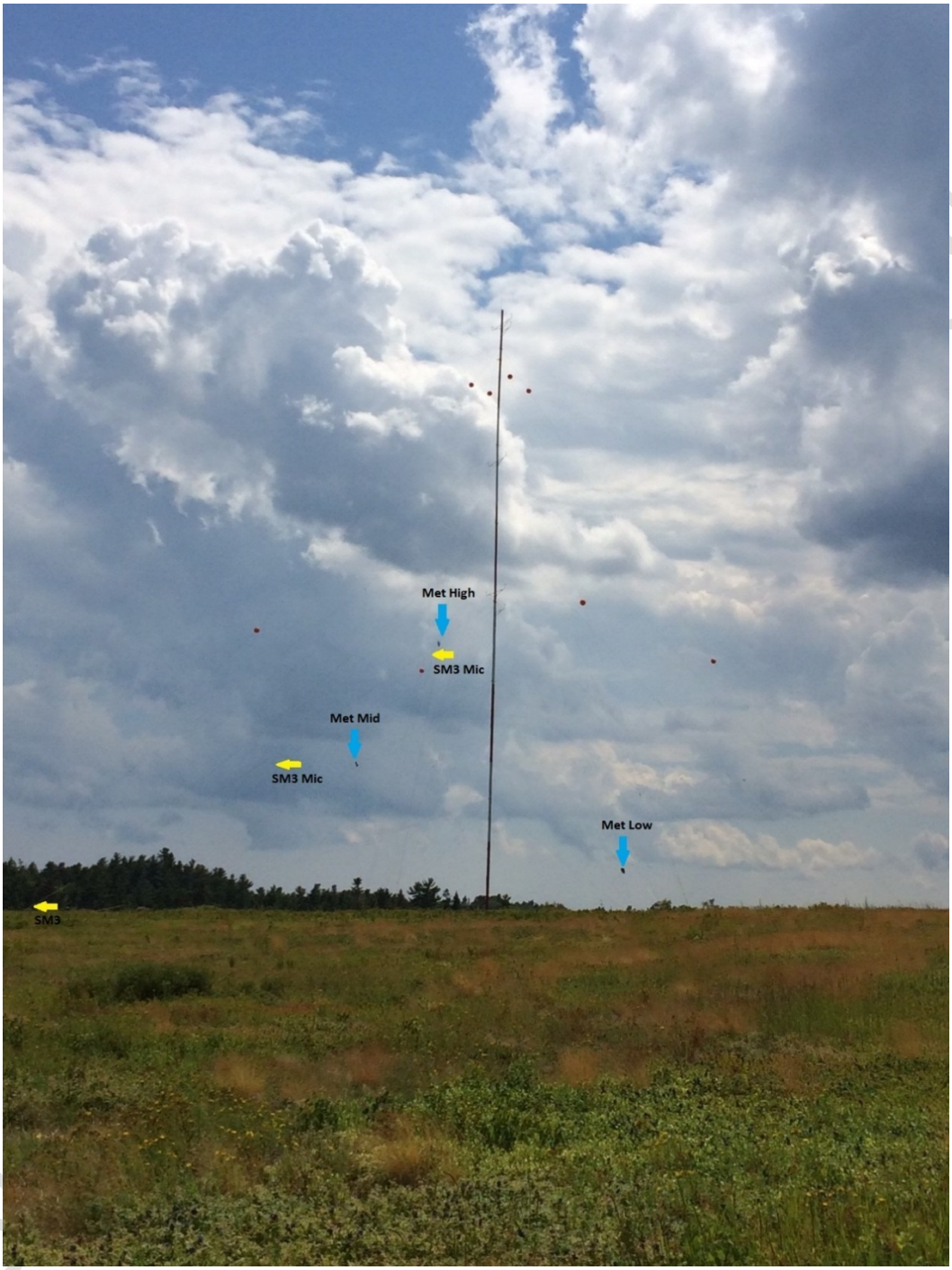
APPENDICES

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Appendix A DETECTOR SETUP PHOTOGRAPHS



Appendix A Figure 1. 2015 Elevated Detectors, Met Mid and Met High, 10 September 2015.



Appendix A Figure 2. 2016 Met Low, Met Mid, and Met High Anabat units indicated by blue arrows, Met Mid and Met High SM3 microphones indicated by yellow arrows. SM3 base unit indicated by yellow arrow near ground level, 26 July 2016.



Appendix A Figure 3. Central 1 detector setup (inset: close-up of waterproof housing and solar panel setup), southern pond of Myers Ponds, 10 September 2015.



Appendix A Figure 4. Central 2 detector setup, 10 September 2015.



Appendix A Figure 5. New Black Brook Pond detector setup, 5 June 2016.



Appendix A Figure 6. New Northwest detector setup, 6 June 2016.

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Appendix B NIGHTLY DATA AT ELEVATED DETECTORS 2016

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Appendix B Table 1. Summary of acoustic bat data and weather during each survey night at Met High, 2016.

Night of	Operational?	BBSH			HB	MYSP	RBTB			UNKN			Total	Temperature (celsius)	Wind Speed (m/s)	Air Density (kg/m^3)
		BBSH	Big brown	Silver-haired	Hoary	MYSP	Eastern red	Tri-colored	RBTB	HFUN	LFUN	UNKN				
3/31/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.17895	9.717105	1.230211
4/1/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.111765	5.53575	1.235085
4/2/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	2.61194	5.046463	1.265203
4/3/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-8.843939	11.16832	1.321085
4/4/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-5.983333	6.158197	1.306823
4/5/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-7.804545	6.469833	1.315867
4/6/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.042424	8.055621	1.272623
4/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.145455	14.07212	1.239489
4/8/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	2.490769	4.914062	1.265758
4/9/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-2.044615	8.384523	1.287449
4/10/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-1.773846	4.473	1.286114
4/11/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.61875	9.703406	1.241888
4/12/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.548438	6.266156	1.270231
4/13/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0.646032	7.803397	1.274522
4/14/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.8475	7.410325	1.268815
4/15/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-0.308571	9.293829	1.279029
4/16/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0.212698	4.254175	1.276594
4/17/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.439683	6.996587	1.247329
4/18/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.711111	3.628222	1.255327
4/19/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	2.581967	7.900803	1.265354
4/20/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.316393	6.593705	1.261889
4/21/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.98033	6.425852	1.226623
4/22/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.445902	4.041754	1.238097
4/23/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.536066	7.979885	1.260944
4/24/2016	1	0	0	0	0	1	0	0	0	0	0	0	1	1.72623	6.355295	1.26939
4/25/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0.31	6.13195	1.276175
4/26/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-1.433333	6.938933	1.284458
4/27/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0.581356	6.936932	1.274902
4/28/2016	1	0	0	0	0	1	0	0	0	0	0	0	1	-1.99322	4.709593	1.287237
4/29/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.149153	5.647	1.272093
4/30/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.266102	5.641424	1.262102
5/1/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	5.840678	3.768864	1.250092
5/2/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.643103	6.199259	1.255645
5/3/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.003448	4.140241	1.249328
5/4/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.481034	6.7265	1.256391
5/5/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.742105	9.72493	1.255181
5/6/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.796491	4.188544	1.254944
5/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.868421	2.258263	1.245321
5/8/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	2.170175	10.03786	1.267263
5/9/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.583929	8.315054	1.255932
5/10/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.528571	6.181821	1.237811
5/11/2016	1	1	0	0	0	0	0	0	0	0	0	0	1	8.344643	5.376071	1.238627
5/12/2016	1	0	0	0	0	0	0	0	0	0	2	0	2	8.564286	5.999196	1.237634
5/13/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.529091	3.887055	1.233158
5/14/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.98	5.135491	1.231149
5/15/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	5.86	8.635036	1.250015
5/16/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.865455	7.527964	1.254605
5/17/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.852727	6.037673	1.245476
5/18/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.583333	4.596074	1.242063
5/19/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.361111	4.3945	1.238474
5/20/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	12.08333	7.101944	1.221613
5/21/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.12593	5.361704	1.230474
5/22/2016	1	1	0	0	0	0	0	0	0	1	0	0	2	12.67358	6.904528	1.218951
5/23/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.16792	2.588075	1.225728
5/24/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.61509	2.109264	1.228226
5/25/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.30943	6.572528	1.225102
5/26/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.530189	4.522925	1.233172
5/27/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.413208	2.442094	1.233685
5/28/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.44528	5.114906	1.224479
5/29/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.032075	4.191925	1.239987
5/30/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	13.41346	4.121904	1.215644
5/31/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	16.2	6.550827	1.203271
6/1/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	9.519231	5.384423	1.233233
6/2/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	8.494118	4.578882	1.237873
6/3/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	11.62157	3.977882	1.223676
6/4/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.30784	1.997922	1.229627
6/5/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.864706	8.423686	1.231637
6/6/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.02941	2.450098	1.230894
6/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	12.12549	3.282216	1.221427
6/8/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.80784	9.032176	1.227376
6/9/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.045098	7.251353	1.235365
6/10/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.623529	6.506373	1.232741
6/11/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.72941	3.520333	1.227708
6/12/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.613725	6.327235	1.232775
6/13/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.566667	7.155137	1.232988
6/14/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.21961	5.49	1.225504
6/15/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.15882	4.591314	1.225784
6/16/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.07843	3.459647	1.230735
6/17/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.87255	6.393706	1.227118
6/18/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.79412	8.456843	1.222912
6/19/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	13.19804	6.698725	1.216614
6/20/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	11.77451	8.152588	1.223

Appendix B Table 1. Summary of acoustic bat data and weather during each survey night at Met High, 2016.

Night of	Operational?	BBSH			HB	MYSP	RBTB			UNKN			Total	Temperature (celsius)	Wind Speed (m/s)	Air Density (kg/m^3)
		BBSH	Big brown	Silver-haired	Hoary	MYSP	Eastern red	Tri-colored	RBTB	HFUN	LFUN	UNKN				
6/21/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	16.21765	3.587176	1.203198
6/22/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.66667	5.995275	1.223482
6/23/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	12.31176	5.172902	1.220598
6/24/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	12.71569	5.077431	1.218788
6/25/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	14.03922	5.206294	1.212851
6/26/2016	1	0	1	0	0	0	0	0	0	0	0	0	1	14.12941	5.048882	1.212461
6/27/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.96863	7.185059	1.2087
6/28/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.31373	3.783725	1.211616
6/29/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.75098	3.256706	1.209675
6/30/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.18654	5.261827	1.203292
7/1/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	15.47308	6.410192	1.206462
7/2/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	12.89808	7.84225	1.217973
7/3/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.39423	6.502058	1.20239
7/4/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	17.14231	4.844635	1.1991
7/5/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	15.19423	4.547327	1.207696
7/6/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	13.66731	7.024192	1.214533
7/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	12.77115	4.689519	1.218517
7/8/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	12.53462	3.990442	1.219583
7/9/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	12.49615	3.156962	1.219746
7/10/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	11.99615	5.075712	1.222
7/11/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.42308	7.27525	1.211135
7/12/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	18.79808	5.350212	1.191798
7/13/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	15.10377	6.699302	1.208113
7/14/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	18.58491	5.709226	1.192747
7/15/2016	1	0	1	0	1	0	0	0	0	0	1	0	3	19.1283	3.987736	1.190353
7/16/2016	1	0	2	0	0	0	0	0	0	0	1	0	3	19.89811	3.71934	1.187
7/17/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	16.17037	1.943722	1.203372
7/18/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	18.28889	6.588574	1.194037
7/19/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	13.27963	7.467333	1.216244
7/20/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.57963	6.995648	1.20157
7/21/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.46111	7.276185	1.202104
7/22/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	20.02778	5.827481	1.186419
7/23/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	19.34364	5.848164	1.189415
7/24/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	19.16909	4.9322	1.190173
7/25/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	17.28	3.7778	1.198469
7/26/2016	1	1	0	5	10	0	0	0	0	1	5	0	22	19.00545	5.131345	1.190893
7/27/2016	1	1	0	0	8	0	0	0	0	0	5	0	14	17.65179	4.829446	1.19685
7/28/2016	1	0	0	0	4	0	0	0	0	0	1	0	5	17.53571	1.757036	1.197339
7/29/2016	1	2	0	0	5	0	0	0	0	0	8	0	15	16.90714	3.601821	1.200116
7/30/2016	1	3	1	0	6	0	0	0	0	0	7	0	17	16.53214	3.273696	1.201811
7/31/2016	1	1	2	0	3	0	0	0	0	0	3	0	9	14.94107	2.676929	1.208841
8/1/2016	1	1	0	0	12	0	0	0	0	0	6	0	19	17.21228	5.12014	1.19877
8/2/2016	1	1	1	1	5	0	0	0	0	1	1	0	10	14.9193	3.670719	1.208939
8/3/2016	1	0	0	0	4	0	0	0	0	0	1	0	5	15.48421	6.241105	1.206421
8/4/2016	1	0	0	0	2	0	0	0	0	0	0	0	2	16.11379	6.563448	1.203622
8/5/2016	1	0	0	0	4	0	0	0	0	0	0	0	4	17.46207	7.942138	1.197655
8/6/2016	1	2	5	0	8	0	0	0	0	0	6	0	21	17.22414	6.548603	1.198741
8/7/2016	1	1	0	0	6	0	0	0	0	0	6	0	13	15.36379	6.803069	1.206971
8/8/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	14.42414	6.388931	1.211178
8/9/2016	1	2	0	0	2	0	0	0	0	0	2	0	6	14.04746	4.544797	1.212808
8/10/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	16.88305	3.656186	1.200207
8/11/2016	1	4	3	0	14	1	0	0	0	0	17	0	39	18.765	3.956267	1.191943
8/12/2016	1	1	1	1	0	0	1	0	0	2	6	0	12	16.63667	4.90225	1.201302
8/13/2016	1	1	0	0	1	0	0	0	0	0	0	0	2	14.51333	3.9988	1.210733
8/14/2016	1	3	0	0	1	0	0	0	0	0	6	0	10	18.725	2.2107	1.192133
8/15/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	15.46333	4.225283	1.206513
8/16/2016	1	0	0	0	1	0	0	0	0	0	1	0	2	17.89667	6.5857	1.195772
8/17/2016	1	1	4	0	2	0	0	0	0	0	4	0	11	16.51026	6.373308	1.201864
8/18/2016	1	3	0	0	17	0	1	0	0	0	6	0	27	15.89429	5.976657	1.204594
8/19/2016	1	0	0	2	3	0	0	0	0	0	1	0	6	14.08226	2.296161	1.212685
8/20/2016	1	0	0	1	1	0	0	0	0	1	1	0	4	14.94677	4.015919	1.208803
8/21/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.44839	4.490903	1.202147
8/22/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	12.31935	8.230419	1.220556
8/23/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	15.13492	6.768381	1.20797
8/24/2016	1	0	1	0	0	0	0	0	0	0	3	0	4	16.67619	7.313714	1.201144
8/25/2016	1	0	2	0	0	0	0	0	0	0	2	0	4	18.16349	5.574079	1.194589
8/26/2016	1	8	1	0	0	0	0	0	0	0	2	0	11	18.88906	6.737375	1.191422
8/27/2016	1	1	0	2	2	0	0	0	0	0	2	0	7	15.09531	4.675594	1.208177
8/28/2016	1	0	0	0	0	0	1	0	0	0	1	0	2	16.59385	7.049846	1.201498
8/29/2016	1	0	0	1	0	0	0	0	0	0	0	0	1	14.35385	7.113185	1.211449
8/30/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.17846	4.963108	1.203352
8/31/2016	1	2	0	0	1	0	0	0	0	0	1	0	4	16.30462	3.626277	1.202785
9/1/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	15.20615	6.7596	1.207677
9/2/2016	1	0	1	0	0	0	0	0	0	0	0	0	1	12.81692	5.070154	1.218337
9/3/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.66119	1.768567	1.223534
9/4/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	11.99104	3.960119	1.222055
9/5/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	15.22985	5.001478	1.207546
9/6/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	16.28955	3.61703	1.202845
9/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	18.02239	3.137896	1.195203
9/8/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	17.72794	3.828324	1.196494
9/9/2016	1	0	1	1	0	0	0	0	0	0	0	0	2	18.55882	6.205485	1.192903
9/10/2016	1	0	1	0	0	0	0	0	0	0	1	0	2	17.13529	5.761956	1.199096

Appendix B Table 1. Summary of acoustic bat data and weather during each survey night at Met High, 2016.

Night of	Operational?	BBSH			HB	MYSP	RBTB			UNKN			Total	Temperature (celsius)	Wind Speed (m/s)	Air Density (kg/m^3)
		BBSH	Big brown	Silver-haired	Hoary	MYSP	Eastern red	Tri-colored	RBTB	HFUN	LFUN	UNKN				
9/11/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	10.98676	7.514794	1.226593
9/12/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	12.41739	5.813986	1.220126
9/13/2016	1	0	1	0	0	0	0	0	0	0	0	0	1	14.59857	6.819886	1.210346
9/14/2016	1	4	1	7	0	0	0	0	0	0	3	0	15	9.471429	7.3337	1.233473
9/15/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.4	3.115129	1.238364
9/16/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.88	6.928243	1.222526
9/17/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.14714	7.651686	1.203464
9/18/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	15.33662	3.136225	1.207065
9/19/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.28451	3.194028	1.202875
9/20/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	16.3493	4.501127	1.202582
9/21/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.55972	7.210056	1.210563
9/22/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.62083	6.274014	1.210257
9/23/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	6.868493	6.73989	1.245355
9/24/2016	1	0	0	0	0	0	0	0	0	1	0	0	1	5.517808	6.800466	1.251625
9/25/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	5.128767	6.884808	1.253414
9/26/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.265753	7.311671	1.234374
9/27/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.536986	5.752041	1.233136
9/28/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.715068	7.609863	1.241481
9/29/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	5.469333	4.52296	1.251859
9/30/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.805333	2.32184	1.241039
10/1/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.21333	3.378893	1.225541
10/2/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.20133	3.661587	1.225572
10/3/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	5.646667	4.207973	1.251093
10/4/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.536842	3.451737	1.260876
10/5/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.298684	6.195487	1.238783
10/6/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.22368	6.649066	1.225501
10/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.04026	3.858831	1.226334
10/8/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.21039	5.920545	1.212078
10/9/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.523377	9.582481	1.246943
10/10/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.265385	7.010282	1.257441
10/11/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.084615	4.91909	1.244347
10/12/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.42436	5.901205	1.229097
10/13/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.3	7.615897	1.229767
10/14/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.058974	7.197821	1.272569
10/15/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.432911	6.500038	1.256635
10/16/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.85875	6.272625	1.222623
10/17/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.48125	5.169838	1.242546
10/18/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.355	6.639888	1.211441
10/19/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.94375	5.5669	1.23589
10/20/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.74375	6.360863	1.227658
10/21/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.0275	7.48565	1.203995
10/22/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.320732	10.96993	1.2342
10/23/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.007317	9.597707	1.249309
10/24/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.4	7.881354	1.26147
10/25/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.17561	6.291317	1.262516
10/26/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	2.336585	5.993841	1.266485
10/27/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.719512	7.538841	1.259977
10/28/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.408537	9.066159	1.261422
10/29/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	5.736145	4.142084	1.250569
10/30/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.855952	5.198107	1.25466
10/31/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.3475	7.08665	1.27116
By Species		**45**	**30**	**21**	**134**	**3**	**3**	**0**	**0**	**7**	**121**	**0**	**364**			
By Guild		**BBSH**		**96**	**HB** 134	**MYSP** 3	**RBTB**		**3**	**UNKN**		**128**	**Total**			

* 1 = Detector functioned for the entire night; 0 = Non-operational for all or part of the night.

Appendix B Table 2. Summary of acoustic bat data and weather during each survey night at Met Mid, 2015-2016.

Night of	Operational?	BBSH			HB	MYSP	RBTB			UNKN			Total	Temperature (celsius)	Wind Speed (m/s)	Air Density (kg/m^3)
		BBSH	Big brown	Silver-haired	Hoary	MYSP	Eastern red	Tri-colored	RBTB	HFUN	LFUN	UNKN				
9/10/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	17.54559	5.547279	1.197313
9/11/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	10.92794	7.301765	1.209107
9/12/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA
9/13/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA
9/14/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	14.22571	7.249214	1.212007
9/15/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	16.87714	7.194429	1.200259
9/16/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	17.83714	4.972714	1.196044
9/17/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	18.03571	6.101071	1.195144
9/18/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	14.99143	5.605929	1.20862
9/19/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	16.80141	5.568732	1.20058
9/20/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	8.347887	7.590775	1.23859
9/21/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	9.973239	3.210986	1.231165
9/22/2015	0	0	0	0	0	0	0	0	0	0	0	0	0	10.5875	2.853403	1.228379
9/23/2015	0	0	0	0	0	0	0	0	0	0	0	0	0	12.675	7.343889	1.218956
9/24/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	7.868493	6.764521	1.240821
9/25/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	6.310959	7.049932	1.247955
9/26/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	6.161644	5.675479	1.248605
9/27/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	10.50274	7.867808	1.228745
9/28/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	15.56438	6.90089	1.20606
9/29/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	18.2274	7.426438	1.194314
9/30/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	11.58	9.603867	1.223921
10/1/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	8.194667	7.834267	1.239253
10/2/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	6.830667	8.470267	1.245521
10/3/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	2.569333	6.947667	1.265437
10/4/2015	1	0	0	1	0	0	0	0	0	0	1	0	2	6.031915	4.622766	1.249228
10/5/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	5.6125	4.68725	1.25116
10/6/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	7.222368	6.174408	1.243755
10/7/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	9.268421	6.632368	1.234397
10/8/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	4.503896	5.563896	1.25633
10/9/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	8.835065	8.684805	1.236435
10/10/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	3.688312	5.677922	1.260131
10/11/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	9.582051	4.413782	1.232932
10/12/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	11.45	5.648846	1.224463
10/13/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	13.74615	5.844103	1.214156
10/14/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	6.617949	5.518782	1.246567
10/15/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	7.25102	7.855714	1.243571
10/16/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA
10/17/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA
10/18/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	-4.07381	6.319643	1.297298
10/19/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	4.3175	7.859188	1.257239
10/20/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	6.81875	6.504625	1.245668
10/21/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	4.0675	5.52175	1.258396
10/22/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	8.34125	7.03225	1.238695
10/23/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	0.502439	7.385488	1.275233
10/24/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	8.326829	6.777927	1.238649
10/25/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	6.696078	7.508529	1.246208
10/26/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA
10/27/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	0.730233	3.981512	1.274093
10/28/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	10.37927	12.0997	1.229366
10/29/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	9.420732	8.724268	1.233717
10/30/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	1.305	6.816	1.271355
10/31/2015	1	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA
3/31/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.17895	9.717105	1.230211
4/1/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.111765	5.53575	1.235085
4/2/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	2.61194	5.046463	1.265203
4/3/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-8.843939	11.16832	1.321085
4/4/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-5.983333	6.158197	1.306823
4/5/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-7.804545	6.469833	1.315867
4/6/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.042424	8.055621	1.272623
4/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.145455	14.07212	1.239489
4/8/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	2.490769	4.914062	1.265758
4/9/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-2.044615	8.384523	1.287449
4/10/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-1.773846	4.473	1.286114
4/11/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.61875	9.703406	1.241888
4/12/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.548438	6.266156	1.270231
4/13/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0.646032	7.803397	1.274522
4/14/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.8475	7.410325	1.268815
4/15/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-0.308571	9.293829	1.279029
4/16/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0.212698	4.254175	1.276594
4/17/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.439683	6.996587	1.247329
4/18/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.711111	3.628222	1.255327
4/19/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	2.581967	7.900803	1.265354
4/20/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.316393	6.593705	1.261889
4/21/2016	1	1	0	0	0	0	0	0	0	0	0	0	1	10.98033	6.425852	1.226623
4/22/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.445902	4.041754	1.238097
4/23/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.536066	7.979885	1.260944
4/24/2016	1	0	0	0	0	0	0	0	0	1	0	0	1	1.72623	6.355295	1.26939
4/25/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0.31	6.13195	1.276175
4/26/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-1.433333	6.938933	1.284458
4/27/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0.581356	6.936932	1.274902
4/28/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	-1.99322	4.709593	1.287237
4/29/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.149153	5.647	1.272093

Appendix B Table 2. Summary of acoustic bat data and weather during each survey night at Met Mid, 2015-2016.

Night of	Operational?	BBSH			HB	MYSP	RBTB			UNKN			Total	Temperature (celsius)	Wind Speed (m/s)	Air Density (kg/m^3)
		BBSH	Big brown	Silver-haired	Hoary	MYSP	Eastern red	Tri-colored	RBTB	HFUN	LFUN	UNKN				
4/30/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.266102	5.641424	1.262102
5/1/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	5.840678	3.768864	1.250092
5/2/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.643103	6.199259	1.255645
5/3/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.003448	4.140241	1.249328
5/4/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.481034	6.7265	1.256391
5/5/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.742105	9.72493	1.255181
5/6/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.796491	4.188544	1.254944
5/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.868421	2.258263	1.245321
5/8/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	2.170175	10.03786	1.267263
5/9/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.583929	8.315054	1.255932
5/10/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.528571	6.181821	1.237811
5/11/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	8.344643	5.376071	1.238627
5/12/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	8.564286	5.999196	1.237634
5/13/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	9.529091	3.887055	1.233158
5/14/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	9.98	5.135491	1.231149
5/15/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	5.86	8.635036	1.250015
5/16/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.865455	7.527964	1.254605
5/17/2016	1	0	0	0	0	0	0	0	0	1	0	0	1	6.852727	6.037673	1.245476
5/18/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.583333	4.596074	1.242063
5/19/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.361111	4.3945	1.238474
5/20/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	12.08333	7.101944	1.221613
5/21/2016	1	0	0	0	0	0	0	0	0	1	0	0	1	10.12593	5.361704	1.230474
5/22/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	12.67358	6.904528	1.218951
5/23/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.16792	2.588075	1.225728
5/24/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.61509	2.109264	1.228226
5/25/2016	1	2	0	0	0	0	0	0	0	0	0	0	2	11.30943	6.572528	1.225102
5/26/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	9.530189	4.522925	1.233172
5/27/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.413208	2.442094	1.233685
5/28/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.44528	5.114906	1.224479
5/29/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.032075	4.191925	1.239987
5/30/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	13.41346	4.121904	1.215644
5/31/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.2	6.550827	1.203271
6/1/2016	1	0	1	0	0	0	0	0	1	0	0	0	2	9.519231	5.384423	1.233233
6/2/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.494118	4.578882	1.237873
6/3/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	11.62157	3.977882	1.223676
6/4/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	10.30784	1.997922	1.229627
6/5/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.864706	8.423686	1.231637
6/6/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.02941	2.450098	1.230894
6/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	12.12549	3.282216	1.221427
6/8/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.80784	9.032176	1.227376
6/9/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.045098	7.251353	1.235365
6/10/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.623529	6.506373	1.232741
6/11/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.72941	3.520333	1.227708
6/12/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.613725	6.327235	1.232775
6/13/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.566667	7.155137	1.232988
6/14/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.21961	5.49	1.225504
6/15/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.15882	4.591314	1.225784
6/16/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.07843	3.459647	1.230735
6/17/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.87255	6.393706	1.227118
6/18/2016	1	1	0	0	0	0	0	0	0	0	0	0	1	11.79412	8.456843	1.222912
6/19/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	13.19804	6.698725	1.216614
6/20/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	11.77451	8.152588	1.223
6/21/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	16.21765	3.587176	1.203198
6/22/2016	1	1	0	0	0	0	0	0	0	0	0	0	1	11.66667	5.995275	1.223482
6/23/2016	1	1	0	0	2	0	0	0	0	1	0	0	4	12.31176	5.172902	1.220598
6/24/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	12.71569	5.077431	1.218788
6/25/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	14.03922	5.206294	1.212851
6/26/2016	1	0	1	0	0	0	0	0	0	0	0	0	1	14.12941	5.048882	1.212461
6/27/2016	1	1	1	0	1	0	0	0	0	0	0	0	3	14.96863	7.185059	1.2087
6/28/2016	1	0	0	0	1	0	0	0	0	0	0	0	1	14.31373	3.783725	1.211616
6/29/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.75098	3.256706	1.209675
6/30/2016	1	2	1	0	1	0	0	0	0	0	0	0	4	16.18654	5.261827	1.203292
7/1/2016	1	0	0	0	0	0	0	0	0	0	1	0	1	15.47308	6.410192	1.206462
7/2/2016	1	1	0	0	1	0	0	0	0	0	0	0	2	12.89808	7.84225	1.217973
7/3/2016	1	1	0	0	0	0	0	0	0	0	0	0	1	16.39423	6.502058	1.20239
7/4/2016	1	3	3	0	0	0	0	0	0	0	1	0	7	17.14231	4.844635	1.1991
7/5/2016	1	0	2	0	2	0	0	0	0	0	0	0	4	15.19423	4.547327	1.207696
7/6/2016	1	1	0	0	0	0	0	0	0	0	0	0	1	13.66731	7.024192	1.214533
7/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	12.77115	4.689519	1.218517
7/8/2016	1	1	1	0	1	0	0	0	0	0	1	0	4	12.53462	3.990442	1.219583
7/9/2016	1	0	1	0	1	1	0	0	0	0	1	0	4	12.49615	3.156962	1.219746
7/10/2016	1	0	0	0	1	0	0	0	0	0	1	0	2	11.99615	5.075712	1.222
7/11/2016	1	0	4	1	1	0	0	0	0	0	0	0	6	14.42308	7.27525	1.211135
7/12/2016	1	2	3	1	3	0	0	0	0	0	2	0	11	18.79808	5.350212	1.191798
7/13/2016	1	0	1	0	0	0	0	0	0	0	0	0	1	15.10377	6.699302	1.208113
7/14/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	18.58491	5.709226	1.192747
7/15/2016	1	0	2	0	3	2	0	0	0	0	1	0	8	19.1283	3.987736	1.190353
7/16/2016	1	1	7	4	0	0	0	0	0	0	1	0	13	19.89811	3.71934	1.187
7/17/2016	1	1	1	0	2	0	0	0	0	0	0	0	4	16.17037	1.943722	1.203372
7/18/2016	1	4	4	2	10	1	0	0	0	0	2	0	23	18.28889	6.588574	1.194037
7/19/2016	1	1	2	4	3	0	1	0	0	0	1	0	12	13.27963	7.467333	1.216244
7/20/2016	1	1	2	3	6	0	0	0	0	0	3	0	15	16.57963	6.995648	1.20157

Appendix B Table 2. Summary of acoustic bat data and weather during each survey night at Met Mid, 2015-2016.

Night of	Operational?	BBSH			HB	MYSP	RBTB			UNKN			Total	Temperature (celsius)	Wind Speed (m/s)	Air Density (kg/m^3)
		BBSH	Big brown	Silver-haired	Hoary	MYSP	Eastern red	Tri-colored	RBTB	HFUN	LFUN	UNKN				
7/21/2016	1	1	1	2	9	0	0	0	0	0	1	0	14	16.46111	7.276185	1.202104
7/22/2016	1	0	3	2	4	4	1	0	0	0	4	0	18	20.02778	5.827481	1.186419
7/23/2016	1	2	2	4	12	1	2	0	0	0	2	0	25	19.34364	5.848164	1.189415
7/24/2016	1	0	0	3	12	0	4	1	0	1	1	0	22	19.16909	4.9322	1.190173
7/25/2016	1	1	1	1	4	0	2	0	0	0	1	0	10	17.28	3.7778	1.198469
7/26/2016	1	7	0	4	10	0	1	0	0	0	3	0	25	19.00545	5.131345	1.190893
7/27/2016	1	7	1	0	7	0	1	0	0	0	3	0	19	17.65179	4.829446	1.19685
7/28/2016	1	2	1	0	4	0	0	0	0	0	0	0	7	17.53571	1.757036	1.197339
7/29/2016	1	2	3	1	4	0	0	0	0	0	4	0	14	16.90714	3.601821	1.200116
7/30/2016	1	5	2	2	3	0	0	0	0	0	7	0	19	16.53214	3.273696	1.201811
7/31/2016	1	1	5	1	3	0	0	0	1	0	0	0	11	14.94107	2.676929	1.208841
8/1/2016	1	6	1	5	11	1	1	0	0	0	2	0	27	17.21228	5.12014	1.19877
8/2/2016	1	5	1	1	5	0	1	0	0	0	2	0	15	14.9193	3.670719	1.208939
8/3/2016	1	0	1	0	2	0	1	0	0	0	1	0	5	15.48421	6.241105	1.206421
8/4/2016	1	2	0	0	2	0	0	0	0	0	4	0	8	16.11379	6.563448	1.203622
8/5/2016	1	0	0	0	2	0	0	0	0	0	0	0	2	17.46207	7.942138	1.197655
8/6/2016	1	4	6	0	3	1	1	0	0	0	9	0	24	17.22414	6.548603	1.198741
8/7/2016	1	5	1	2	3	0	0	0	0	0	4	0	15	15.36379	6.803069	1.206971
8/8/2016	1	0	0	0	1	1	1	0	0	0	0	0	3	14.42414	6.388931	1.211178
8/9/2016	1	2	1	0	2	0	0	0	0	0	2	0	7	14.04746	4.544797	1.212808
8/10/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.88305	3.656186	1.200207
8/11/2016	1	13	7	2	8	0	0	0	0	0	5	0	35	18.765	3.956267	1.191943
8/12/2016	1	10	11	3	0	2	2	0	0	0	1	0	29	16.63667	4.90225	1.201302
8/13/2016	1	0	2	0	1	0	2	0	0	0	0	0	5	14.51333	3.9988	1.210733
8/14/2016	1	7	4	1	0	0	0	1	0	0	4	0	17	18.725	2.2107	1.192133
8/15/2016	1	0	1	0	0	0	2	0	0	0	0	0	3	15.46333	4.225283	1.206513
8/16/2016	1	3	0	0	0	0	0	0	0	0	1	0	4	17.89667	6.5857	1.195772
8/17/2016	1	4	5	1	2	0	0	0	0	0	0	0	12	16.51026	6.373308	1.201864
8/18/2016	1	9	4	0	9	0	0	0	0	0	5	0	27	15.89429	5.976657	1.204594
8/19/2016	1	0	0	4	0	0	0	0	0	0	2	0	6	14.08226	2.296161	1.212685
8/20/2016	1	1	0	0	0	1	0	0	0	0	1	0	3	14.94677	4.015919	1.208803
8/21/2016	1	0	0	0	0	0	0	0	0	1	0	0	1	16.44839	4.490903	1.202147
8/22/2016	1	0	0	0	1	0	1	0	0	0	0	0	2	12.31935	8.230419	1.220556
8/23/2016	1	0	0	0	0	1	1	0	0	0	0	0	2	15.13492	6.768381	1.20797
8/24/2016	1	7	2	1	0	0	0	0	0	0	1	0	11	16.67619	7.313714	1.201144
8/25/2016	1	7	1	0	0	0	0	0	0	0	0	0	8	18.16349	5.574079	1.194589
8/26/2016	1	9	3	10	0	0	0	0	0	0	0	0	22	18.88906	6.737375	1.191422
8/27/2016	1	0	1	2	0	0	0	0	0	0	2	0	5	15.09531	4.675594	1.208177
8/28/2016	1	1	0	0	0	0	1	0	0	0	1	0	3	16.59385	7.049846	1.201498
8/29/2016	1	0	0	2	0	0	0	0	2	0	1	0	5	14.35385	7.113185	1.211449
8/30/2016	1	1	0	0	0	0	0	0	0	0	0	0	1	16.17846	4.963108	1.203352
8/31/2016	1	3	2	0	0	0	0	0	0	3	1	0	9	16.30462	3.626277	1.202785
9/1/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	15.20615	6.7596	1.207677
9/2/2016	1	0	1	0	0	0	0	0	0	0	0	0	1	12.81692	5.070154	1.218337
9/3/2016	1	0	0	0	0	0	0	0	1	1	0	0	2	11.66119	1.768567	1.223534
9/4/2016	1	0	0	0	1	0	0	0	1	1	0	0	3	11.99104	3.960119	1.222055
9/5/2016	1	0	0	0	0	0	0	0	1	0	1	0	2	15.22985	5.001478	1.207546
9/6/2016	1	3	0	0	1	1	1	0	0	0	0	0	6	16.28955	3.61703	1.202845
9/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	18.02239	3.137896	1.195203
9/8/2016	1	0	0	0	0	0	1	0	1	0	0	0	2	17.72794	3.828324	1.196494
9/9/2016	1	0	1	1	0	0	0	0	0	0	0	0	2	18.55882	6.205485	1.192903
9/10/2016	1	0	1	0	0	0	0	0	0	0	0	0	1	17.13529	5.761956	1.199096
9/11/2016	1	1	0	0	0	1	0	0	1	0	0	0	3	10.98676	7.514794	1.226593
9/12/2016	1	0	0	0	0	0	0	0	0	1	0	0	1	12.41739	5.813986	1.220126
9/13/2016	1	0	1	0	0	0	0	0	0	0	0	0	1	14.59857	6.819886	1.210346
9/14/2016	1	4	3	9	0	0	0	0	0	0	1	0	17	9.471429	7.3337	1.233473
9/15/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.4	3.115129	1.238364
9/16/2016	1	0	0	0	0	0	0	0	0	1	0	0	1	11.88	6.928243	1.222526
9/17/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.14714	7.651686	1.203464
9/18/2016	1	0	0	0	0	0	1	0	0	0	1	0	2	15.33662	3.136225	1.207065
9/19/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.28451	3.194028	1.202875
9/20/2016	1	0	0	0	1	0	0	1	0	0	0	0	2	16.3493	4.501127	1.202582
9/21/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.55972	7.210056	1.210563
9/22/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.62083	6.274014	1.210257
9/23/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.868493	6.73989	1.245355
9/24/2016	1	0	0	0	0	0	0	0	1	1	0	0	2	5.517808	6.800466	1.251625
9/25/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	5.128767	6.884808	1.253414
9/26/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.265753	7.311671	1.234374
9/27/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.536986	5.752041	1.233136
9/28/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.715068	7.609863	1.241481
9/29/2016	1	0	0	0	0	0	1	0	0	0	0	0	1	5.469333	4.52296	1.251859
9/30/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.805333	2.32184	1.241039
10/1/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.21333	3.378893	1.225541
10/2/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.20133	3.661587	1.225572
10/3/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	5.646667	4.207973	1.251093
10/4/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.536842	3.451737	1.260876
10/5/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.298684	6.195487	1.238783
10/6/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.22368	6.649066	1.225501
10/7/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.04026	3.858831	1.226334
10/8/2016	1	0	0	0	0	1	0	0	0	0	0	0	1	14.21039	5.920545	1.212078
10/9/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.523377	9.582481	1.246943
10/10/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.265385	7.010282	1.257441

Appendix B Table 2. Summary of acoustic bat data and weather during each survey night at Met Mid, 2015-2016.

Night of	Operational?	BBSH			HB	MYSP	RBTB			UNKN			Total	Temperature (celsius)	Wind Speed (m/s)	Air Density (kg/m^3)
		BBSH	Big brown	Silver-haired	Hoary	MYSP	Eastern red	Tri-colored	RBTB	HFUN	LFUN	UNKN				
10/11/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.084615	4.91909	1.244347
10/12/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.42436	5.901205	1.229097
10/13/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.3	7.615897	1.229767
10/14/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.058974	7.197821	1.272569
10/15/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.432911	6.500038	1.256635
10/16/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	11.85875	6.272625	1.222623
10/17/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	7.48125	5.169838	1.242546
10/18/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	14.355	6.639888	1.211441
10/19/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	8.94375	5.5669	1.23589
10/20/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	10.74375	6.360863	1.227658
10/21/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	16.0275	7.48565	1.203995
10/22/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	9.320732	10.96993	1.2342
10/23/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	6.007317	9.597707	1.249309
10/24/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.4	7.881354	1.26147
10/25/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.17561	6.291317	1.262516
10/26/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	2.336585	5.993841	1.266485
10/27/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.719512	7.538841	1.259977
10/28/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	3.408537	9.066159	1.261422
10/29/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	5.736145	4.142084	1.250569
10/30/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	4.855952	5.198107	1.25466
10/31/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	1.3475	7.08665	1.27116
By Species		**161**	**117**	**80**	**171**	**19**	**30**	**3**	**10**	**14**	**96**	**0**	**701**			
By Guild		**358**			**171**	**19**	**43**			**110**						
		BBSH			**HB**	**MYSP**	**RBTB**			**UNKN**			**Total**			

* 1 = Detector functioned for the entire night; 0 = Non-operational for all or part of the night.

EXHIBIT 7-5: BREEDING BIRD SURVEY REPORT

2016 Breeding Bird Survey Report

Downeast Wind Project
Washington County, Maine



Prepared by:
Stantec Consulting Services Inc.
30 Park Drive
Topsham, ME 04086

January 2017

Stantec

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Executive Summary

Stantec Consulting Services Inc. (Stantec) conducted breeding bird surveys (BBS) for the proposed 30-turbine (90-megawatt) Downeast Wind Project (DOW or Project) in Washington County, Maine. BBS performed as part of pre-construction planning efforts for DOW were conducted in accordance with the Maine Department of Inland Fisheries and Wildlife's *Curtailment Policy and Wind Power Pre-construction Study Recommendations* (June 2015), the US Fish and Wildlife Service's *Land-based Wind Energy Guidelines* (March 2012), and methods that were similar to those employed at other wind energy projects in Maine and the Northeast. The objective of the BBS was to assess species composition, abundance, diversity, and distribution of songbirds relative to available habitat in the Project area during the breeding season.

Stantec conducted BBS at 28 survey points inside and outside the Project area. Survey points were grouped into 6 habitat categories based on dominant vegetation cover and general habitat characteristics: blueberry field, conifer forest, hardwood forest, mixed (hardwood and conifer) forest, man-made clearing (not blueberry field), and wetland. Data collected during the BBS were summarized to provide species and number of observations. The summarized data were used to calculate species richness, relative abundance, frequency, and Shannon Diversity Index (SDI). These indices were calculated for each habitat classification and for the entire survey area.

BBS were conducted in May and June 2016, and one, two, or three BBS were performed at each survey point. Stantec recorded 754 observations of 66 species at the survey points. Excluding flyovers and observations greater than 100 m from the observer, 507 observations of 53 species were recorded. A total of 234 observations (40 species) were recorded at the 10 points inside the Project area. A total of 273 observations (44 species) were recorded at the 18 points outside the Project area. Overall bird use (i.e., number/hour of observation) and species of birds observed was similar at points inside and outside.

Among habitat types in the Project area, survey points in wetland habitats had the highest relative abundance of birds, species richness, and diversity compared to points in blueberry fields and hardwood forest. Survey points in blueberry fields had the lowest overall relative abundance, species richness, and diversity. Bird abundance and species diversity values were similar within blueberry fields located inside and outside the Project area. Of the survey points outside the Project area, those in man-made clearings, which included gravel pits and borrow pits had the highest species richness and diversity.

No federally or state-listed endangered or threatened species were detected. Ten species designated as special concern by MDIFW were detected within the Project area, and 4 additional special concern species were documented outside the Project area. Species

detected during BBS are generally common and typical of the habitats in which they were observed.

1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) completed breeding bird surveys (BBS) for the proposed 30-turbine (90-megawatt) Downeast Wind Project (DOW or Project) in Washington County, Maine. Surveys were completed as part of pre-construction planning efforts for DOW in accordance with the Maine Department of Inland Fisheries and Wildlife's *Curtailment Policy and Wind Power Pre-construction Study Recommendations* (June 2015), the US Fish and Wildlife Service's *Land-based Wind Energy Guidelines* (March 2012), and methods that were similar to those employed at other wind energy projects in Maine and the Northeast. The primary objectives of the BBS were to assess species composition, abundance, diversity, and distribution of songbirds relative to available habitat in the Project area during the breeding season. Secondary objectives of BBS were to provide baseline data of songbird species occurring and breeding within the specific habitat types in the Project area, to assess the likelihood that rare bird species occur in the Project area, and to compare the breeding bird community in the Project area to the typical breeding bird community of the region.

2.0 METHODS

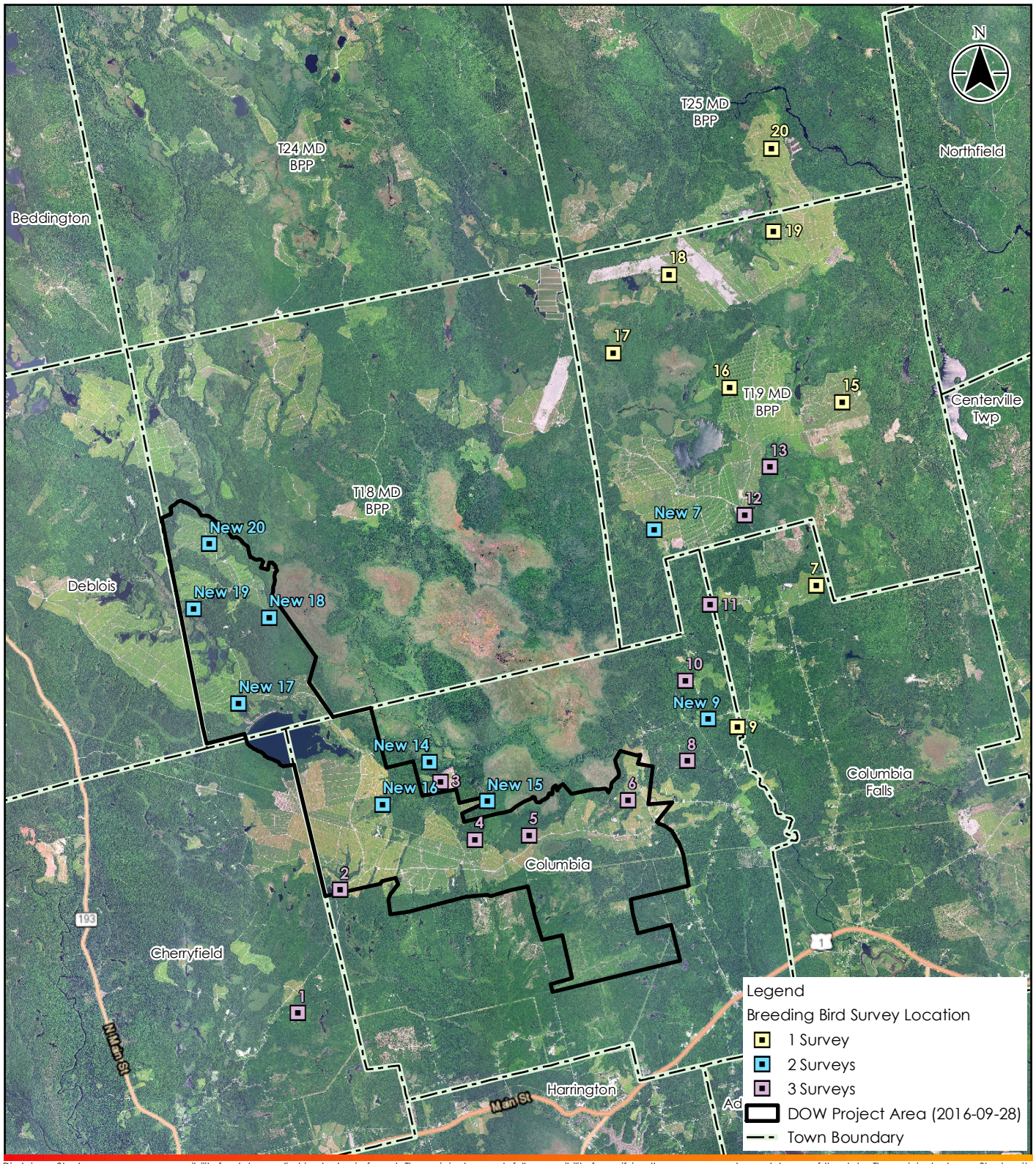
This section describes the field survey and data analysis methods.

2.1 FIELD SURVEYS

Stantec conducted BBS at 28 total survey points, 10 points inside the area currently proposed for development (Project area) and 18 points proximal to but outside the Project area (Figure 1). Points outside the Project area were located in similar habitat as points inside the Project area, and included blueberry fields, conifer forest, man-made clearings, mixed forest and wetlands. Survey point locations were chosen using aerial Project photos and adjusted in the field to sample habitats representative of proposed turbine locations. BBS survey locations were limited to participating landowner parcels with access via roads and trails.

Survey points were grouped into 6 habitat categories based on dominant vegetation cover and general habitat characteristics: blueberry field, conifer forest, hardwood forest, mixed (hardwood and conifer) forest, man-made clearing (not blueberry field), and wetland.

BBS were conducted from sunrise until 11:30 AM targeting weather conditions conducive to hearing birdsong and seeing birds move about in vegetation and in flight. Weather information and general habitat conditions at each survey point were recorded during each survey.



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Prepared by GAC on 2016-07-14
Reviewed by LSB on 2016-07-14

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Client/Project

Apex Clean Energy, Inc.
Apex Downeast Wind Project
Washington County, Maine

Figure No.

1

Title

2016 Breeding Bird Survey Locations

12/9/2016

Birds that were identified by sight or sound, including soaring raptors, waterfowl, and other fly-overs, were recorded during a 10-minute session at each survey point. For each bird, the observer noted the time it was first observed and its approximate distance in 50-meter (m) increments from the observer.

Immediately after each 10-minute period at survey points in forested habitat, the observer broadcasted great horned owl (*Bubo virginianus*) and northern goshawk (*Accipiter gentilis*) calls, alternating between species calls, for 5 minutes to observe any approaching or territorial raptors, which may be indicative of potential breeding raptors proximal to the survey point.

2.2 DATA SUMMARY AND ANALYSIS

Data collected during the BBS were summarized to provide species and number of observations. Due to the potential for double-counting (in cases of adjacent points), and decreased detectability at distances greater than 100 m and, birds observed beyond approximately 100 m of the observer were recorded but excluded from quantitative assessments. Flyovers also were recorded but excluded since their breeding status and location could not be confirmed. The remaining data were used to calculate species richness, relative abundance, frequency, and Shannon Diversity Index (SDI). These indices were calculated by habitat separately for points inside the Project area and outside the Project area.

3.0 RESULTS

3.1 SURVEY EFFORT AND WEATHER SUMMARY

Table 1 presents the dates of survey and weather conditions per survey.

BBS were initiated on May 25 at 19 points[1]. Additional BBS were completed in June; however, revisions to the Project area boundary resulted in some points being surveyed one, two or three times.

The revised boundary eliminated some areas in the eastern portion of the original Project area and added some areas to the northwest of the original Project area (Figure 1). Following on the change in the Project area, 7 survey points (#14–#20) were relocated from the eastern to the northwestern areas of the Project area, and 2 survey points (#7 and #9) remained in the east but were shifted inside the new boundary. Survey points #7, #9, and #15–20 were surveyed once, and the relocated points ("New 7, 9, 14–20") were surveyed twice. The balance of the survey points were surveyed 3 times. Note that the relocated survey points were treated as new points during data analysis. The Project area was further revised post field efforts, resulting in 10 points

[1] Twenty survey points were planned to be surveyed in the May round; however, 1 point, #14, was overlooked by the field biologist. All 10 survey points in the Project area were surveyed during both June survey events.

remaining in the Project area. Points in the Project area that were surveyed 3 times include 2, 4, 5 and 6, and those that were surveyed two times include New 15 – New 20.

Daily average wind speeds ranged from 0 mph to 13–18 mph, and average daily temperatures ranged from 10–21°C during the BBS. Sky conditions ranged from clear to overcast, and periods of mist occurred on 25 May and 7 June (Table 1).

Table 1. Weather summary for breeding bird surveys, Downeast Wind Project, 2016.

Round	Date	Wind Speed[a]	Average Temperature (°C)	Sky Conditions
1	5/25/2016	0, 1	12	Clear to scattered clouds with periods of mist.
	5/26/2016	0, 2, 3	13	Clear to scattered clouds with periods of overcast skies.
2	6/7/2016	0, 3	10	Clear to scattered clouds with periods of mist.
	6/8/2016	0, 1, 2	14	Clear to scattered clouds.
	6/9/2016	2, 3, 4	12	Clear to scattered clouds.
3	6/22/2016	0, 1	21	Partly cloudy to scattered clouds.
	6/23/2016	1, 2	12	Clear to scattered clouds.
	6/24/2016	1, 2, 3	10	Clear skies.
[a] 0=<1 mph; 1=1-3 mph; 2=4-8 mph; 3=9-12 mph; 4=13-18 mph.				

3.2 OBSERVATIONS AND SPECIES OBSERVED

3.2.1 Points Inside the Project Area

Stantec detected 50 species (324 bird observations) at survey points inside the Project area, including flyovers and observations greater than 100 m from the observer. Appendix A Table 1 lists the observed species. Excluding flyovers and observations greater than 100 m from the observer, Stantec recorded 40 species (234 bird observations) (Appendix A Table 2).

At survey points in the Project area within 100 m of the observer and excluding flyovers, the species with the greatest number of observations were common yellowthroat (*Geothlypis trichas*) (n = 30), chestnut-sided warbler (*Setophaga pensylvanica*) (n = 27), and ovenbird (*Seiurus aurocapillus*) (n = 26).

3.2.2 Points Outside the Project Area

Stantec detected 56 species (430 bird observations) at survey points outside the Project area, including flyovers and observations greater than 100 m from the observer. Appendix A Table 1 lists the observed species. Excluding flyovers and observations greater than 100 m from the observer, Stantec recorded 44 species (273 bird observations) (Appendix A Table 2).

At survey points outside the Project area within 100 m of the observer and excluding flyovers, the species with the greatest number of observations were the same as those inside the Project area: common yellowthroat (n = 28), ovenbird (n = 27), and chestnut-sided warbler (n = 17).

3.2.3 Incidentally Observed Species

Species that were not documented during surveys but were observed incidentally to surveys inside and outside the Project area included American black duck (*Anas rubripes,* n = 1), broad-winged hawk (*Buteo platypterus,* n = 1), killdeer (*Charadrius vociferus,* n = 1), and merlin (*Falco columbarius,* n = 1).

Broadcasts of great horned owl and northern goshawk solicited no responses at points inside the Project area and solicited responses from a broad winged hawk (Point 7a), a red-shouldered hawk (*Buteo lineatus*, point 8), and a bald eagle (*Haliaeetus leucocephalus*, Point 20) outside the Project area. The broad-winged hawk was heard calling but was not visually observed. The red-shouldered hawk was observed flying from adjacent forest and perching in a snag. The bald eagle flew over the observer.

3.3 HABITAT RESULTS

The species with the greatest number of observations in common between points inside and outside the Project area (blueberry field, hardwood forest, and wetland) are shown below (Table 2).

Table 2. Species with greatest number of observations at habitats in common between points inside and outside the Project area, Downeast Wind Project, 2016 (bold text indicates species in common between points inside and outside the Project area).

		Blueberry Field		Hardwood Forest		Wetland	
Species	Scientific Name	In	Out	In	Out	In	Out
chestnut-sided warbler	*Setophaga pensylvanica*	4		11		**12**	**3**
common yellowthroat	*Geothlypis trichas*	**7**	**10**	10		**13**	**6**
ovenbird	*Seiurus aurocapilla*		14	**19**	**8**		
savannah sparrow	*Passerculus sandwichensis*	**7**	**14**				

Among habitat types in the Project area, survey points in wetland habitats had the highest relative abundance of birds, species richness, and diversity, and blueberry fields had the lowest overall relative abundance, species richness, and diversity. Bird abundance and species diversity values were similar within blueberry fields located inside and outside the Project area. Of points in blueberry fields, Point 12, outside the Project area, had the highest species richness (SR = 16, Appendix A Table 2). Of all points outside the Project area, those in man-made clearings, which included gravel pits and borrow pits, had the highest species richness and diversity (Table 3).

Table 3. Summary of breeding bird point count results by habitat type, excluding observations of birds greater than 100 m from the observer and flyovers, Downeast Wind Project, 2016.

Habitat Type	# BBS Points	Total Birds Observed	Relative Abundance			Species Richness			Shannon Diversity Index		
			Points surveyed 1 time	Points surveyed 2 times	Points surveyed 3 times	Points surveyed 1 time	Points surveyed 2 times	Points surveyed 3 times	Points surveyed 1 time	Points surveyed 2 times	Points surveyed 3 times
Points Inside											
Blueberry Field	2	32	NA	0.06 ± 0.11	0.16 ± 0.12	NA	4	12	NA	1.33	2.20
Hardwood Forest	4	95	NA	0.17 ± 0.08	0.18 ± 0.12	NA	18	14	NA	2.61	2.30
Wetland	4	107	NA	0.23 ± 0.06	0.21 ± 0.08	NA	28	18	NA	3.08	3.88
All points	**10**	**234**						**40**			
Points Outside											
Blueberry Field	9	102	0.06 ± 0.07	0.06 ± 0.07	0.25 ± 0.09	8	6	23	1.77	1.79	2.85
Hardwood Forest	1	24	NA	NA	0.15 ± 0.12	NA	NA	12	NA	NA	2.20
Conifer Forest	2	44	0.23 ± 0.24	NA	0.20 ± 0.11	7	NA	14	1.86	NA	2.47
Man-made Clearing	2	63	NA	NA	0.20 ± 0.06	NA	NA	28	NA	NA	3.06
Mixed Forest	2	22	0.12 ± 0.21	0.15 ± 0.11	NA	4	10	NA	1.33	2.22	NA
Wetland	2	18	0.08 ± 0.13	0.13 ± 0.14	NA	4	8	NA	1.39	1.87	NA
All points	**18**	**273**						**44**			

NA = Not Applicable.

3.4 RARE, THREATENED AND ENDANGERED SPECIES

Stantec did not detect any federally or state-listed endangered or threatened species[2] in or outside the Project area. Ten state species of special concern were recorded in the Project and an additional 4 species were detected outside the Project area (Table 4).

[2] Maine Department of Fisheries and Wildlife (MDIFW). 2015. Endangered and threatened wildlife. <http://www.maine.gov/ifw/wildlife/endangered>. Accessed 13 July 2016.

Table 4. Maine species of special concern[1] detected during breeding bird surveys at points inside and outside the Project area, Downeast Wind Project, 2016.

Species	Scientific Name	No. Obs Inside	No. Obs Outside	Total
American redstart	*Setophaga ruticilla*	14	7	21
bald eagle	*Haliaeetus leucocephalus*	0	1	1
barn swallow	*Hirundo rustica*	0	1	1
black-and-white warbler	*Mniotilta varia*	12	10	22
brown thrasher	*Toxostoma rufum*	2	3	5
chestnut-sided warbler	*Setophaga pensylvanica*	27	21	48
chimney swift	*Chaetura pelagica*	0	2	2
eastern towhee	*Pipilo erythrophthalmus*	2	0	2
eastern wood-pewee	*Contopus virens*	1	3	4
least flycatcher	*Empidonax minimus*	4	2	6
rusty blackbird	*Euphagus carolinus*	2	0	2
tree swallow	*Tachycineta bicolor*	1	0	1
veery	*Catharus fuscescens*	0	3	3
white-throated sparrow	*Zonotrichia albicollis*	16	22	38
		81	**75**	**156**

[1] Source: http://www.maine.gov/ifw/wildlife/endangered/specialconcern.htm

4.0 DISCUSSION

BBS consisted of point count surveys designed to document birds present in the Project area during the breeding season and to provide baseline data of songbird species occurring and breeding within the specific habitat types in the Project area. The study allows assessment of the likelihood that rare bird species occur in the Project area and evaluation of the degree to which the breeding bird community in the Project area is typical of the region.

Species detected during this BBS included species that are generally common within the habitats surveyed. No federally or state-listed endangered or threatened species were recorded and few state species of special concern were recorded, most in low numbers. Birds observed were regionally abundant, with the possible exception of rusty blackbird, which is a species of special concern in Maine. Two rusty blackbird observations occurred at Point 4, which was in wetland habitat adjacent to a pond and both natural and man-made clearings. This is consistent with known habitat preference for this species.

The great horned owl and northern goshawk broadcasts solicited responses on 3 occasions of 3 different raptor species (broad-winged hawk, red-shouldered hawk, and bald eagle), but only at points outside the Project area. Though these 3 individuals either called or flew toward or near the observer, none of the 3 individuals exhibited aggressive, territorial behavior indicative of

nesting activity. Broad-winged hawks and red-shouldered hawks are common nesters in Maine in relatively continuous deciduous or mixed-deciduous forest near water. Red-shouldered hawks typically nest in older forest than broad-winged hawks. Due to the blueberry barrens, there is little contiguous forest habitat in the Project area.

Habitat impacts to resident birds in and near wind projects have not been well documented. The initial construction of a wind project results in a certain amount of habitat loss or habitat conversion for some species. Direct impacts associated with construction could occur if construction occurs during the breeding/nesting season. Potential indirect effects such as displacement could occur as a result of construction and operation of a project. The degree to which wind turbines deter resident birds from establishing territories nearby varies among bird species and habitats. Some resident birds may be at risk of colliding with turbines once operational, though seasonal timing and species composition of bird fatality in Maine suggest that collision fatality has been greatest during the spring and fall migration periods. Although this study suggests that most bird species potentially affected by the Project are common and windspread in the region, construction of the Project outside the breeding season, and utilization of existing roads and clearings as much as possible, would likely minimize impacts to breeding birds.

APPENDIX A – DATA TABLES

Appendix A DATA TABLES

Table 1. Total number of species and observations detected and distance from observer at 28 point count locations, Downeast Wind Project, 2016.

Common name[a]	Scientific name	0-50 m	50-100 m	> 100 m	Flyovers	Total	0-50 m	50-100 m	> 100 m	Flyovers	Total
		All Points Inside					All Points Outside				
alder flycatcher	*Empidonax alnorum*		2			**2**		2			**2**
American crow	*Corvus brachyrhynchos*		6	16	1	**23**	2	4	16	4	**26**
American goldfinch	*Spinus tristis*	1	3			**4**	3	1		1	**5**
American redstart	*Setophaga ruticilla*	10	3	1		**14**	4	3			**7**
American robin	*Turdus migratorius*	6	6	11	1	**24**	2	8	12	1	**23**
American woodcock	*Scolopax minor*									2	**2**
bald eagle	*Haliaeetus leucocephalus*									1	**1**
barn swallow	*Hirundo rustica*									1	**1**
barred owl	*Strix varia*								2		**2**
belted kingfisher	*Megaceryle alcyon*			1		**1**	2				**2**
black-and-white warbler	*Mniotilta varia*	9	3			**12**	7		3		**10**
black-billed cuckoo	*Coccyzus erythropthalmus*	1				**1**					
black-capped chickadee	*Poecile atricapillus*		3			**3**	8		1		**9**
black-throated blue warbler	*Setophaga caerulescens*	1				**1**	1	2			**3**
black-throated green warbler	*Setophaga virens*	2	1	2		**5**	9	6	4		**19**
blue jay	*Cyanocitta cristata*			3		**3**	3	1	6		**10**
blue-headed vireo	*Vireo solitarius*		2	1		**3**	1		1		**2**
brown thrasher	*Toxostoma rufum*		1	1		**2**	3				**3**
brown-headed cowbird	*Molothrus ater*								1		**1**
Canada goose	*Branta canadensis*								3		**3**
Cape May warbler	*Setophaga tigrina*			1		**1**					
cedar waxwing	*Bombycilla cedrorum*	3	1			**4**	5	1		10	**16**
chestnut-sided warbler	*Setophaga pensylvanica*	15	12			**27**	3	14	4		**21**
chimney swift	*Chaetura pelagica*							2			**2**
chipping sparrow	*Spizella passerina*	2	3			**5**	1	2	2		**5**
common loon	*Gavia immer*								1		**1**
common raven	*Corvus corax*				1	**1**	1	1	3		**5**
common yellowthroat	*Geothlypis trichas*	14	16	1		**31**	13	15	9		**37**
dark-eyed junco	*Junco hyemalis*		1	1		**2**			1		**1**
eastern phoebe	*Sayornis phoebe*	2	1	3		**6**	2	2			**4**
eastern towhee	*Pipilo erythrophthalmus*	2				**2**					
eastern wood-pewee	*Contopus virens*	1				**1**		3			**3**
field sparrow	*Spizella pusilla*		2	2		**4**	2	5	3		**10**
hairy woodpecker	*Picoides villosus*	2				**2**		1			**1**
hermit thrush	*Catharus guttatus*	3	6	7		**16**	1	7	15		**23**
least flycatcher	*Empidonax minimus*	4				**4**	2				**2**
magnolia warbler	*Setophaga magnolia*						8	1			**9**
mourning dove	*Zenaida macroura*			3		**3**		1	3		**4**
Nashville warbler	*Oreothlypis ruficapilla*	2		2		**4**	5	5			**10**
northern flicker	*Colaptes auratus*			1		**1**	1	1	2		**4**
northern parula	*Setophaga americana*	2				**2**	3	3	2		**8**
ovenbird	*Seiurus aurocapilla*	16	10	5		**31**	10	17	13		**40**
palm warbler	*Setophaga palmarum*						1				**1**
pileated woodpecker	*Dryocopus pileatus*						1				**1**
pine warbler	*Setophaga pinus*		1			**1**					
purple finch	*Haemorhous purpureus*		2	1		**3**			1		**1**
red-breasted nuthatch	*Sitta canadensis*	1	2			**3**	3	8	1		**12**
red-eyed vireo	*Vireo olivaceus*		12	7		**19**	2	2	12		**16**
red-winged blackbird	*Agelaius phoeniceus*		1			**1**					
ruby-crowned kinglet	*Regulus calendula*		2			**2**					
ruffed grouse	*Bonasa umbellus*						1		1		**2**
rusty blackbird	*Euphagus carolinus*	2				**2**					
savannah sparrow	*Passerculus sandwichensis*	5	6	2		**13**	5	10	1		**16**
scarlet tanager	*Piranga olivacea*			1		**1**					
song sparrow	*Melospiza melodia*	4	4	1		**9**	2				**2**
swamp sparrow	*Melospiza georgiana*							2			**2**
tree swallow	*Tachycineta bicolor*				1	**1**					
turkey vulture	*Cathartes aura*									1	**1**
veery	*Catharus fuscescens*						1	2			**3**
vesper sparrow	*Pooecetes gramineus*		1			**1**	1	2	1		**4**
white-breasted nuthatch	*Sitta carolinensis*								1		**1**
white-throated sparrow	*Zonotrichia albicollis*	3	5	7	1	**16**	1	15	6		**22**
winter wren	*Troglodytes hiemalis*			1		**1**		2	2		**4**
wood duck	*Aix sponsa*			2		**2**					
yellow-bellied sapsucker	*Sphyrapicus varius*	1		1		**2**			3		**3**
yellow-rumped warbler	*Setophaga coronata*	2				**2**	1	1			**2**
		116	**118**	**85**	**5**	**324**	**121**	**152**	**136**	**21**	**430**

[a] Numbers largely represent singing males but also include male and some female individuals that were visually detected.

Table 2. Total number of observations, relative abundance, and frequency of species at point count locations, Downeast Wind Project, 2016.

Acronym	Definition
RA	Relative Abundance
Fr	Frequency
SR	Species Richness
SDI	Shannon Diversity Index

| Species[a] | Species Total (Inside and Outside) | INSIDE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | OUTSIDE | | | | | | | | | | | | | | | | | | |

EXHIBIT 7-6: GRASSLAND BIRD SURVEY REPORTS

Grassland Bird Surveys Downeast Wind Project - May to September 2016

Washington County, Maine

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January 26, 2017

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APPENDIX A. Revised Work Plan for 2016 Grassland Bird Surveys – Proposed Downeast Wind Project, 16 May 2016

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Executive Summary

Stantec conducted grassland bird surveys for the proposed Downeast Wind Project (DOW or Project) in Washington County, Maine. The Project area includes actively managed blueberry fields and hills that provide habitat for the state-threatened upland sandpiper (UPSA; *Bartramia longicauda*) (Weik 2000), as well as several other grassland bird species. At the request of the Maine Department of Inland Fisheries and Wildlife (MDIFW), a focused study of UPSA and other grassland species (northern harrier (*Circus cyaneus*), vesper sparrow (*Pooecetes gramineus*), eastern whip-poor-will (*Caprimulgus vociferus*) and whimbrel (*Numenius phaeopus*)) was completed. Study objectives included evaluating breeding period behavior and timing of courtship, estimating abundance of breeding UPSA, assessing relationships between UPSA abundance and habitat variables, documenting fall staging areas, and documenting presence of the other target species. The study comprised 2 time periods relevant to UPSA natural history: the breeding season (May and June) and the fall staging period (July, August, and September).

Breeding season surveys for UPSA and target species were conducted between 9 May and 23 June, 2016 at 40 survey sites, including 16 sites within the proposed Project area. UPSA were detected at 26 of 40 sites (65% occurrence). UPSA were detected a total of 79 times (mean = 2 detections/site; range = 0 – 4), 18 times inside the Project area and 61 times outside the Project area. Mean maximum detections/site estimated with the generalized linear Poisson model was 1.3 (95% CI = 1.0 – 1.7) for all sites, and 0.8 (95% CI = 0.4 – 1.3) for sites inside and 1.6 (95% CI = 1.2 – 2.2) for sites outside the Project area. Abundance estimates were calculated using hierarchical models that explicitly account for detection error (i.e., birds present but not detected) and survey effort at each site. Mean detection-adjusted abundance was 5.7 (95% CI = 2.9 – 11.0) for all sites, and 4.0 (95% CI = 1.2 – 12.9) for sites inside the Project area, and 8.6 (95% CI = 2.8 – 26.4) for sites outside the Project area. Given that each site was 48.5 acres (~20 hectares [ha]), the overall density estimate for DOW was 0.25 UPSA/ha.

UPSA courtship behaviors were observed on 6 occasions from May 10 to May 24, including 4 instances in the morning and 2 in the evening. Courtship was observed inside the Project area on 2 occasions at 1 site and outside the Project area at 4 sites. Heights of courtship displays ranged from < 20m to > 200m, and all were > 50m from forest edges.

Vegetation was sampled at 26 of the 40 survey sites (65%), including all 16 in the Project area, to assess relationships between UPSA abundance and vegetation structure. Model-averaged parameter estimates (β) indicated increased abundance with increasing grass height (β = 0.28, 85% UCI = 0.04 – 0.52) and grass cover (β = 0.37, 85% UCI = 0.11 – 0.62), while quadratic models suggested increasing and then decreasing abundance with increasing grass height and cover.

Fall staging surveys for UPSA were conducted between 24 July to 9 September at 26 survey sites, including all 16 sites in the Project area. UPSA were detected 8 times, all within the Project area, but staging behavior was not observed.

Within the Project area, 56 vesper sparrow, 6 eastern whip-poor-will, 3 northern harrier and 0 whimbrel observations were recorded.

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1.0 INTRODUCTION

Stantec conducted grassland bird surveys on land in and adjacent to the proposed Downeast Wind Project (DOW or Project) in Washington County, Maine (Figure 1). Project infrastructure is expected to include utility scale wind turbines, underground collector lines, a collection substation, an above ground transmission line, new and improved roads, an operations and maintenance building, and 2 or 3 permanent meteorological towers.

The Project area largely consists of actively managed blueberry fields and hills with mixed forest habitat. Blueberry cultivation in Maine provides habitat for the state-threatened upland sandpiper (UPSA; *Bartramia longicauda*) (Weik 2000), as well as several other grassland bird species. Region-wide surveys have indicated that the core of the UPSA range in New England and New York includes the blueberry barrens in Washington and Hancock counties (Weik 2000). The Maine Department of Inland Fisheries and Wildlife (MDIFW) has mapped suitable breeding habitat for UPSA throughout the state, including in the Project area. Mapping efforts resulted in GIS polygons depicting suitable habitat where UPSA was confirmed present at the time of mapping, and a 250-ft buffer around the suitable habitat. Since MDIFW's mapping efforts, Stantec is not aware of any studies that have systematically surveyed for presence or absence of the species in the area in and adjacent to the Project area, or quantitatively assessed microhabitat variables (i.e., habitat selection) where UPSA have been observed.

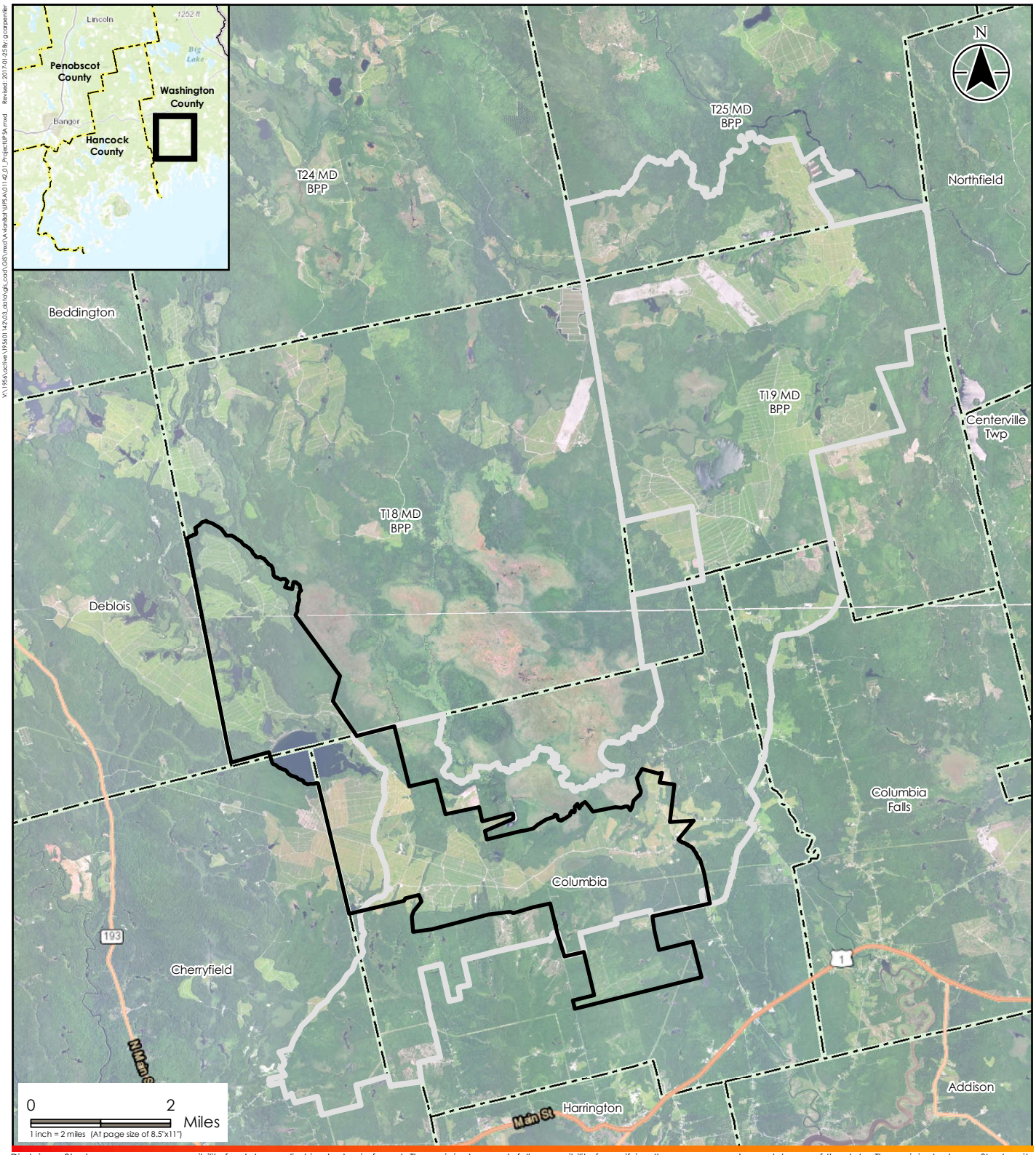
UPSA are potentially at risk at wind projects located in breeding habitat because the species' courtship behavior includes a flight display in which one or more males fly in a circular or elliptical path as high as approximately 200 m above the ground (Wiek 2000). Stantec is not aware of any studies in Maine that have collected data related to UPSA flight patterns during courtship.

Per request of MDIFW, observations of vesper sparrow (*Pooecetes gramineus*) and the following state Species of Special Concern were also recorded during the study: northern harrier (*Circus cyaneus*), eastern whip-poor-will (*Caprimulgus vociferus*) and whimbrel (*Numenius phaeopus*).

Objectives of the grassland bird study were to:

1. Document timing and flight characteristics of displaying UPSA
2. Model abundance of breeding UPSA
3. Model habitat relationships with UPSA abundance
4. Document UPSA staging areas during or preceding fall migration, if present
5. Document other target species, if present.
6. Use results to inform siting, construction, and operational protocols to minimize risk to the target species.

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Legend

- Project Area (9/28/2016)
- Project Area (11/23/2015)

Project

Downeast Wind Project
Washington County, Maine

Figure No.

1

Title

Downeast Wind Project Location

Prepared by GAC on 2017-01-12
Review by SBG on 2017-01-12

01142_01_ProjectUPSA.mxd

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Objectives and methods were determined based on consultation with MDIFW and a third party expert, Dr. Kimberly Peters of DNV GL, an avian biologist with expertise on grassland birds including UPSA. A draft study plan was provided to MDIFW on 21 April 2016 and was revised based on comments received from the MDIFW on 29 April 29 2016 and technical input provided by Dr. Peters.

2.0 METHODS

This section describes the field survey and data analysis methods. Survey methods followed those described in the *Revised Work Plan for 2016 Grassland Bird Surveys – Proposed Downeast Wind Project* dated 16 May 2016 (Appendix A).

2.1 FIELD SURVEYS

Field surveys were conducted by Mark DiGirolamo whose past experience includes conducting presence/absence UPSA surveys in the late 1990s under the direction of Peter Vickery and Massachusetts Audubon and subsequently under Andrew Wiek and MDIFW.

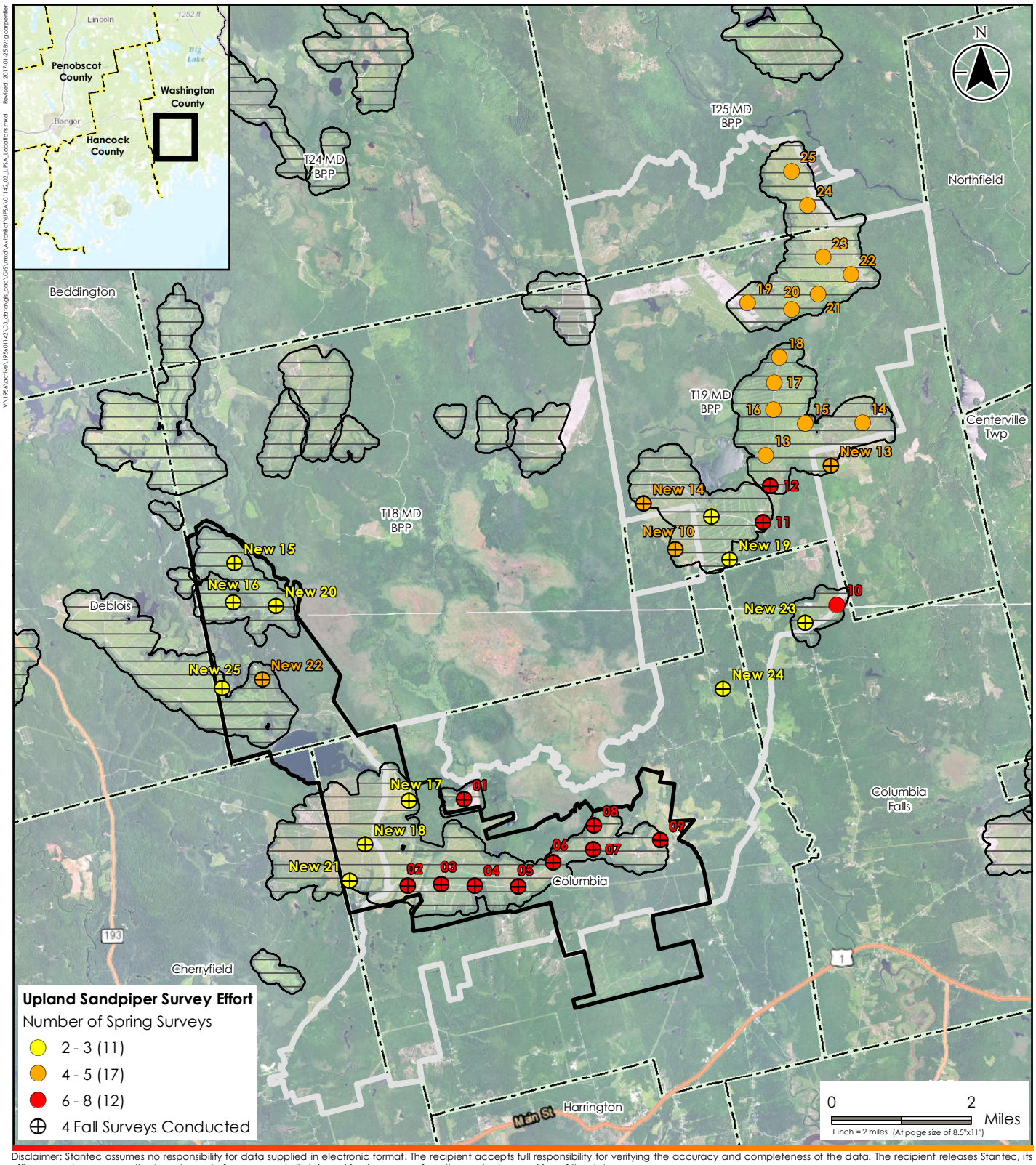
Field surveys occurred from May through September 2016, which included the breeding season of the target species (May – June) and the UPSA fall staging period (late July – September).

Surveys were conducted at 40 sites within and in the vicinity of the Project area, 39 of which were located within MDIFW-mapped UPSA habitat (Figure 1). Sites were selected based on logistical access (i.e., landowner permission) and to provide adequate coverage of the MDIFW-mapped UPSA habitat. Sites consisted of circular plots with 250-m radii and were located far enough apart to be considered independent (minimum distance = 550 m), i.e., individuals were unlikely to be double-counted among sites.

Differing levels of survey effort were completed at each site due to Project area revisions[1] (Figure 2, Table 2-1). Reduction of the Project area resulted in a dataset that allows comparison between Project area and offsite data.

[1] On 7 June, the Project area was revised by removing a large area to the northeast and adding an area to the northwest. At this time surveys were discontinued at Sites 10 and 13–25, and on 8 June and 9 June, surveys were initiated at new Sites 27 and New 10–New 25. Sites 1–9 and Sites 11 and 12 remained within the revised Project area and were surveyed during each round in May through September. Since completion of surveys, on 26 September 2016, the Project area was again reduced to focus development in as small an area as possible and to minimize potential impacts to UPSA habitat in the blueberry barrens.

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- Upland Sandpiper Habitat (MDIFW)
- Project Area (9/28/2016)
- Project Area (11/23/2015)

Project

Downeast Wind Project
Washington County, Maine

Figure No.

2

Title

Grassland Bird Survey Locations and Survey Effort at Each Site

Prepared by GAC on 2017-01-12
Review by SBG on 2017-01-12

01142_02_UPSA_Locations.mxd

V:\1956\active\195601142\03_data\gis_cad\GIS\mxd\Wildlife\UPSA\01142_02_UPSA_Locations.mxd Revised: 2017-01-23 By: gcarpenter

Table 2-1. Survey Effort per Site by Season at DOW, Maine, 2016.

Site	In/Out of Project Area	# Spring Surveys	# Fall Surveys	Total # Surveys
1	Out	8	4	12
2	In	8	4	12
3	In	8	4	12
4	In	8	4	12
5	In	8	4	12
6	In	8	4	12
7	In	8	4	12
8	In	8	4	12
9	In	8	4	12
10	Out	6	0	6
11	Out	8	4	12
12	Out	8	4	12
13	Out	4	0	4
14	Out	5	0	5
15	Out	5	0	5
16	Out	5	0	5
17	Out	5	0	5
18	Out	5	0	5
19	Out	5	0	5
20	Out	5	0	5
21	Out	4	0	4
22	Out	4	0	4
23	Out	4	0	4
24	Out	4	0	4
25	Out	4	0	4
27	Out	2	4	6
10n	Out	4	4	8
13n	Out	4	4	8
14n	Out	4	4	8
15n	In	3	4	7
16n	In	3	4	7
17n	In	3	4	7
18n	In	3	4	7
19n	Out	3	4	7
20n	In	3	4	7
21n	In	3	4	7
22n	In	4	4	8
23n	Out	3	4	7
24n	Out	3	4	7
25n	In	3	4	7
		201	**104**	**305**

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2.1.1 Breeding Season Surveys

Breeding season surveys were initiated on 9 May and continued through 23 June, coinciding with territory establishment, courtship, and nesting for UPSA (Vickery et al. 2010). Sites were surveyed in both morning and evening. Morning surveys occurred 0.5 hour before sunrise until 10:00 AM. Evening surveys occurred 1 hour before sunset until 1 hour after sunset. In early to mid-May, the courtship period, each site was surveyed up to 3 times in the morning and 2 times in the evening (Table 2-1). In late May and June, the nesting period, each site was surveyed up to 2 times in the morning and 1 time in the evening. Sites were surveyed systematically within morning or evening survey rounds based on geographic proximity; however each survey round was initiated at a different site than the previous round, resulting in broad temporal coverage of all sites. Surveys occurred in all weather conditions except for in heavy rain or high winds where visual or auditory detections would be impaired.

Visual surveys were conducted for 10 minutes, scanning 360° with binoculars and/or a spotting scope to search and listen for target species. The surveyor scanned fence posts, sign posts, utility wires, any other potential perches, and over fields. If UPSA were not detected during the initial 10 minutes, the surveyor broadcasted an UPSA call for 1 minute to attempt to elicit and detect territorial or response calls in the subsequent 4 minutes.

The locations of target species were indicated on maps within the 250-m radius circle. Data were recorded on Stantec datasheets. Other non-target bird species detected during grassland surveys were recorded as incidental observations.

Habitat and vegetation data were collected in June when most vegetation expected to be present would be mature, from sites that were surveyed in June, i.e., those sites that were considered inside the Project area at the time, which included Sites 1–12, 27, and New 10–New 25. At each survey site, a 1-m × 1-m quadrat was established 100-m in each cardinal direction from the site center, resulting in 4 total quadrats per site. If a quadrat occurred on or within 25 m of a road, the plot was moved 50 m into the grassland/blueberry field area perpendicularly from the road.

2.1.2 Fall Staging Season Surveys

Surveys were conducted during the fall staging period for UPSA from late 24 July to 9 September at sites that were considered inside the Project area at the time (i.e., Sites 1–9, Sites 11–12, Site 27, and Sites New 10–New 25). Each of these sites was surveyed up to 3 times in the morning: once in late July, once in mid-August, and once in early September (Table 2-1). In addition, each site was surveyed once in the evening. Methodology used in the fall was the same as in spring with the addition of categorizing observations as "staging" as appropriate. Staging behavior was considered any observation of multiple UPSA individuals in close proximity to one another (in a group) feeding or loafing during this time period.

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2.2 STATISTICAL ANALYSIS

A correlation matrix was used to assess multi-collinearity among vegetation variables because relatively high levels of correlation among predictor/independent variables ("covariates") in models can cause variance inflation, reduced statistical power, and biased parameter estimates (Graham 2003, Freckleton 2011). The correlation matrix was constructed by calculating Pearson correlation coefficients (r) for each pair of numeric vectors representing vegetation covariates and removed several covariates from subsequent analyses accordingly. Covariates were not excluded solely on exceeding an arbitrary value of r. Instead, covariate exclusion was based on quantitative evidence (i.e., r) and qualitative biological evidence (i.e., our understanding of the correlative or causative relationships of vegetation structure in the field) (Graham 2003).

Generalized linear Poisson models were fit to the maximum number of UPSA detected among repeated visits, and used to estimate mean abundance and 95% confidence intervals (CI). Primary model assumptions include 1) the likelihood of detecting UPSA was spatiotemporally independent among sites, and 2) detection errors (i.e., false-negative errors/not detecting UPSA that were present) were infrequent enough to cause negligible or no bias in abundance estimates.

The second assumption (i.e., negligible detection error) was addressed and relaxed by fitting hierarchical models of abundance to data representing site-specific detection histories of UPSA. That is, the multiple surveys per site over time represent temporally replicated sampling events that allow for estimation of detection probability and detection-adjusted abundance (Mackenzie et al. 2002, Royle 2004, Royle and Dorazio 2008). The "unmarked" package (Fiske and Chandler 2011) for R (R Development Core Team 2016) was used to fit hierarchical models and estimate detection probability and abundance. First, a set of 12 competing models were fit, containing variables that we hypothesized could influence the detection parameter, but only the *y*-intercept for the abundance parameter. The model set included 1) a null model (i.e., only the *y*-intercept for detection), 2) models containing single covariates representing time-of-day, Julian day, wind speed, and ambient temperature, 3) all models containing combinations of 2 additive covariates, and 4) a global model containing all 4 additive covariates. Influential detection variables were then included in a set of 11 hierarchical abundance models containing vegetation structure covariates. As a post hoc exploration, the following were fit: 1) hierarchical models containing quadratic forms of vegetation variables that appeared to influence abundance, and 2) the model containing site location as a categorical predictor variable to estimate and compare detection-adjusted abundance of sites on and off the Project area. The primary assumption for the hierarchical model is a closed population during the sampling period; i.e., births, deaths, immigration, and emigration were infrequent enough to have negligible or no influence on our abundance estimates and relationships with covariates.

Log likelihoods, Akaike's Information Criteria with second-order bias correction for small sample sizes (AICc), and proportional weights (*w*) were used to select and make inference from the most informative models of abundance (Burnham and Anderson 2002, Anderson 2008). Model coefficients/parameter estimates (β) and abundance (*N*) were model-averaged with the

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AICcmodavg package (Mazerolle 2016) for R (R Core Development Team 2016) to make multi-model inference if model-selection uncertainty was high (i.e., when *w* for the top-ranked model was not ≥ 0.90) (Burnham and Anderson 2002, Anderson 2008). β and *N* with 95% confidence intervals (CI), or 85% unconditional confidence intervals (UCI) for model-averaged estimates (Burnham and Anderson 2002, Arnold 2010) were reported. Covariates were considered to have positive or negative effects on *N* if CI or UCI for β did not overlap zero (Bolker 2008, Arnold 2010).

Results of the analyses provide: (1) an unbiased estimate of abundance, both inside and outside the Project area, and (2) identify habitat characteristics associated with UPSA abundance.

Hierarchical models of UPSA abundance make the most efficient and informative use of the data by providing 1) identification of factors influencing probability of detection (i.e., detection error), which facilitates optimization of future survey design, 2) abundance estimates with reduced bias via adjustment for detection error, 3) identification of vegetation variables influencing detection-adjusted abundance, and 4) comparison of detection-adjusted abundance estimates for survey sites inside and outside the Project area.

3.0 RESULTS

3.1 UPLAND SANDPIPER BREEDING SURVEYS

3.1.1 Occurrence and Unadjusted Abundance

Surveys for UPSA and target species occurred at a total of 40 sites between 9 May and 23 June, 2016 (mean = 5.0 surveys/site; range = 2 – 8), including 16 sites inside and 24 sites outside the Project area (Figure 2). UPSA were detected at 26 of the 40 sites (65% occurrence), and at 8 of 16 (50%) sites inside and 18 of 24 (75%) sites outside the Project area. UPSA were detected 79 times (mean detections/survey/site = 0.4; mean maximum detections/site = 1.3; mean total detections/site = 2.0), including 18 detections inside the Project area (mean detections/survey/site = 0.2; mean maximum detections/site = 0.8; mean total detections/site = 1.1) and 61 detections outside the Project area (mean detections/survey/site = 0.5; mean maximum detections/site = 1.6; mean total detections/site = 2.5).

Mean maximum detections/site estimated with the generalized linear Poisson model was 1.3 (95% CI = 1.0 – 1.7) for all sites, and 0.8 (95% CI = 0.4 – 1.3) for sites inside and 1.6 (95% CI = 1.2 – 2.2) for sites outside the Project area (β_{inside} = - 0.77, 95% CI = -1.42 – - 0.13, p = 0.019).

3.1.2 Courtship Behavior

UPSA courtship behaviors were observed on 6 occasions from May 10 to May 24, 4 in the morning and 2 in the evening (Table 3-1). Courtship was observed inside the Project area on 2 occasions at Site 2, and outside the Project area at 4 sites. Heights of courtship displays ranged from < 20m to > 200m, and all were > 50m from forest edges.

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Table 3-1. Summary of courtship behavior by upland sandpipers at DOW, Maine, 2016.

Courtship Instance	Date	Site	Inside or Outside Project Area	Time	Individuals	Flight Duration > 130 m and < 180 m (sec)	Maximum flight height (m)	Distance to Road (m)	Distance to Forest (m)	Distance to Nearest Perch (m)
1	5/10	13	Out	6:01	1	0	120	200	> 250	150
2	5/12	14	Out	18:51	2	0	> 200	< 50	> 100	< 50
3	5/18	10	Out	7:55	1	0	75	50-100	100-200	100-200
4	5/19	2	In	8:20	2	50	> 150	< 50	100-200	< 50
5	5/24	11	Out	19:00	1	0	25	< 50	50-100	< 50
6*	5/12	2	In	7:21	2	NA	< 20	NA	NA	NA

*incidental observation during drive-through reconnaissance effort between Sites 1-15

3.1.3 Detection-Adjusted Abundance

The hierarchical model with time-of-day and Julian day as detection covariates had the greatest proportional model weight (Table 3-2), so those detection covariates were included in the hierarchical models with vegetation covariates. Probability of detection decreased with increasing time-of-day (β = - 1.15; 95% CI = -2.13 – - 0.18) and Julian day (β = - 0.03; 95% CI = - 0.05 – - 0.02; Figure 3, Figure 4).

Table 3-2. Probability of detection variables, parameters (K), Akaike's Information Criterion (AICc), proportional weight (w), and log likelihood (LL) for hierarchical models of detection-adjusted abundance for upland sandpipers at DOW, Maine, 2016.

	K	AICc	ΔAICc	w	LL
Time.Day	4	350.3	0.0	0.59	-170.6
Global	6	351.8	1.5	0.28	-168.6
Day	3	354.6	4.3	0.07	-174.0
Day.Wind	4	355.5	5.2	0.04	-173.2
Day.Temp	4	357.0	6.7	0.02	-173.9
Time	3	362.8	12.5	0.00	-178.1
Time.Wind	4	365.1	14.8	0.00	-178.0
Time.Temp	4	365.2	14.9	0.00	-178.0
Null	2	366.2	15.9	0.00	-180.9
Temp	3	367.1	16.8	0.00	-180.2
Wind	3	367.7	17.4	0.00	-180.5
Temp.Wind	4	368.8	18.5	0.00	-179.8

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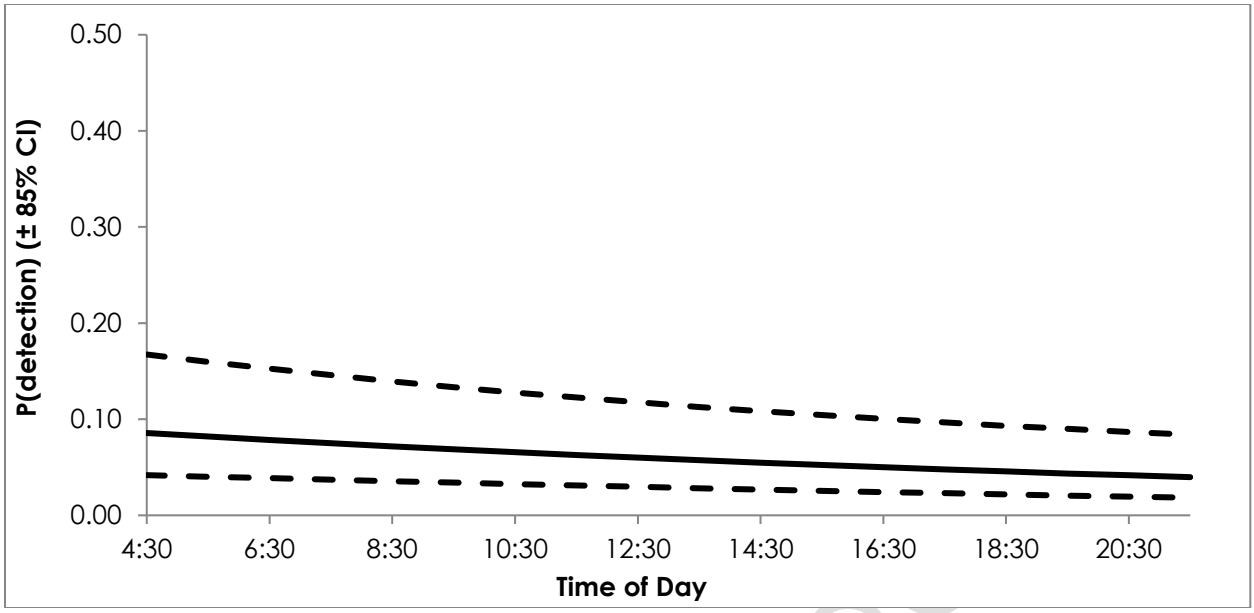


Figure 3. Upland sandpiper probability of detection (85% confidence interval) related to time of day, DOW, Maine, 2016.

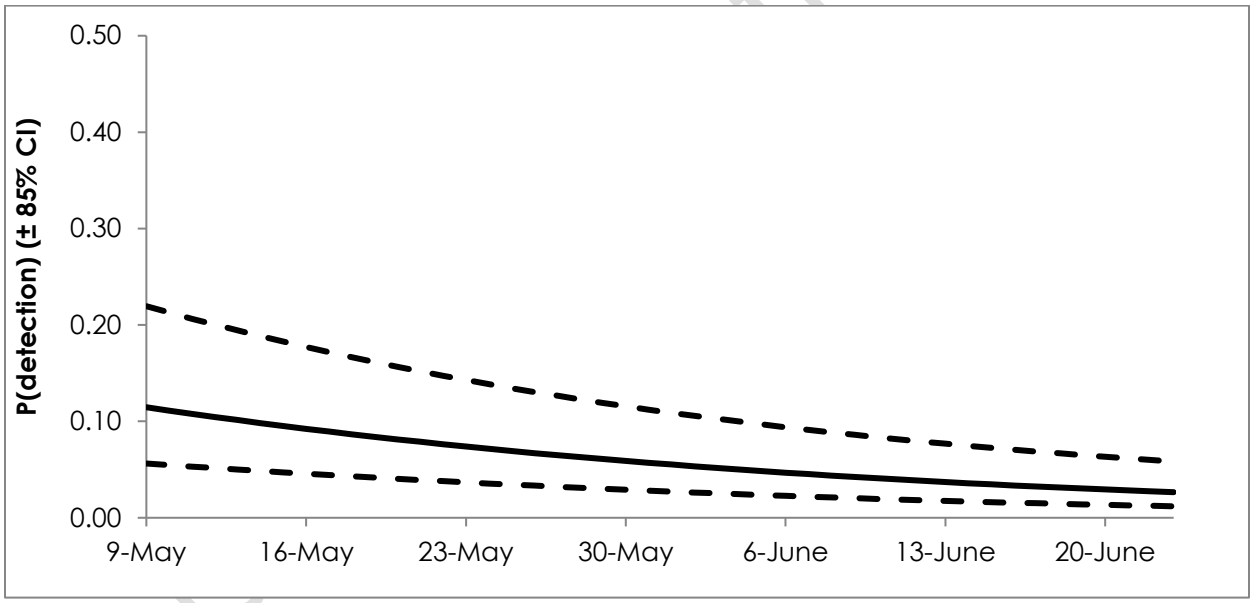
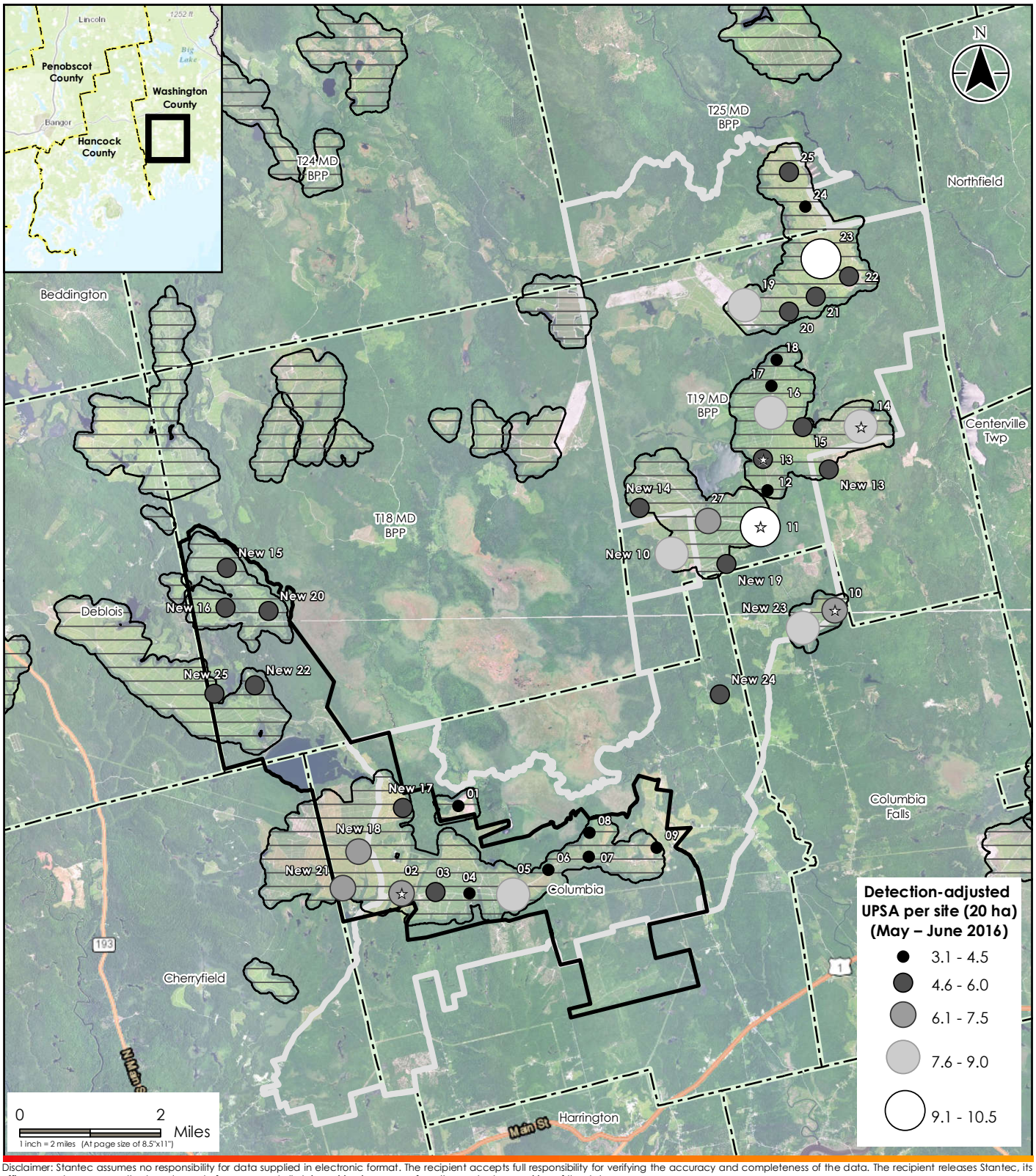


Figure 4. Upland sandpiper probability of detection (85% confidence interval) related to Julian day, DOW, Maine, 2016.

Mean detection-adjusted abundance (*N*) for the sample area was 5.7/site (95% CI = 2.9 – 11.0), and varied among sites (Figure 5). *N* at sites inside the Project area was 4.0 (95% CI = 1.2 – 12.9) and outside the Project area was 8.6 (95% CI = 2.8 – 26.4). Assuming a 1:1 sex ratio, the overall estimate of males was 114 (5.7 birds/site*40 sites = 228 birds*0.5). Given that each site was 48.5 acres (~20 hectares [ha]), the overall density estimate was 0.25 UPSA/ha.



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Prepared by GAC on 2017-01-12
Review by SBG on 2017-01-12

01142_05_UPSA_Abundance.mxd

Legend

- ☆ Courtship Behavior Observed
- Upland Sandpiper Habitat (MDIFW)
- Project Area (9/28/2016)
- Project Area (11/23/2015)

Project

Downeast Wind Project
Washington County, Maine

Figure No.

5

Title

Detection-adjusted Upland Sandpiper (UPSA) Abundance

3.1.4 Vegetation Covariates

Vegetation was sampled at 26 of 40 sites (65%) on 22, 23, 24, 27, and 28 June, 2016. Grass, herbaceous, and shrub mean heights were strongly correlated with grass, herbaceous, and shrub maximum heights (Table 3-3), so maximum heights were excluded as model variables.

Table 3-3. Correlation values for vegetation variables sampled at sites for upland sandpiper surveys in Maine, 2016.

	Grass Cov	Herb Cov	Shrub Cov	Grass Ht	Herb Ht	Shrub Ht	Grass MxHt	Herb MxHt	Shrub MxHt
Bare	0.03	-0.12	-0.21	0.38	-0.17	-0.19	0.37	-0.20	-0.18
	Grass Cov	0.21	-0.40	0.51	0.40	0.02	0.57	0.39	0.05
		Herb Cov	-0.50	0.25	0.64	0.25	0.27	0.64	0.26
			Shrub Cov	-0.36	-0.32	-0.04	-0.41	-0.39	-0.02
				Grass Ht	0.27	0.04	**0.98**	0.29	0.08
					Herb Ht	0.46	0.33	**0.99**	0.44
						Shrub Ht	0.04	0.46	**0.97**
							Grass MxHt	0.35	0.08
								Herb MxHt	0.45
									Shrub MxHt

Model selection uncertainty was too high to base inference on a single model among competing hierarchical models with vegetation variables (Table 3-4). Model-averaged vegetation β indicated positive effects of grass cover (β = 0.37; 85% UCI = 0.11 – 0.62; Figure 6) and grass height (β = 0.28; 85% UCI = 0.04 – 0.52; Figure 7) on *N* (abundance; Table 3-5). Quadratic hierarchical models indicated that *N* initially increased and then decreased with increasing grass cover and height (Figure 8, Figure 9).

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Table 3-4. Vegetation variables, parameters (K), Akaike's Information Criterion (AICc), proportional weight (w), and log likelihood (LL) for hierarchical models of detection-adjusted abundance for upland sandpipers at DOW, Maine, 2016.

	K	AICc	ΔAICc	*w*	LL
GrassCov	5	195.2	0.0	0.31	-91.69
GrassHt	5	195.9	0.7	0.21	-92.05
Bare	5	196.8	1.6	0.14	-92.49
HerbCov	5	197.1	2.0	0.12	-92.67
ShrubCov	5	198.4	3.3	0.06	-93.33
ShrubHt	5	198.5	3.3	0.06	-93.36
HerbHt	5	198.5	3.4	0.06	-93.38
Cover	8	199.6	4.4	0.03	-89.45
Height	7	201.2	6.0	0.02	-91.84
Global	11	209.1	13.9	0.00	-88.83
Null	4	350.3	155.2	0.00	-170.59

Table 3-5. Hierarchical model averaged parameter estimates (β), unconditional standard errors (USE), unconditional lower and upper 85% confidence limits (ULCL and UUCL), and effect direction for vegetation covariate effects on detection-adjusted abundance of upland sandpipers at DOW, Maine, 2016.

	β	USE	85% ULCL	85% UUCL	Effect
Bare	0.25	0.18	-0.01	0.51	uncertain
GrassCov	0.37	0.18	0.11	0.62	+
HerbCov	-0.27	0.22	-0.59	0.04	uncertain
ShrubCov	-0.03	0.22	-0.35	0.28	uncertain
GrassHt	0.28	0.17	0.04	0.52	+
HerbHt	-0.03	0.23	-0.37	0.31	uncertain
ShrubHt	0.06	0.25	-0.30	0.41	uncertain

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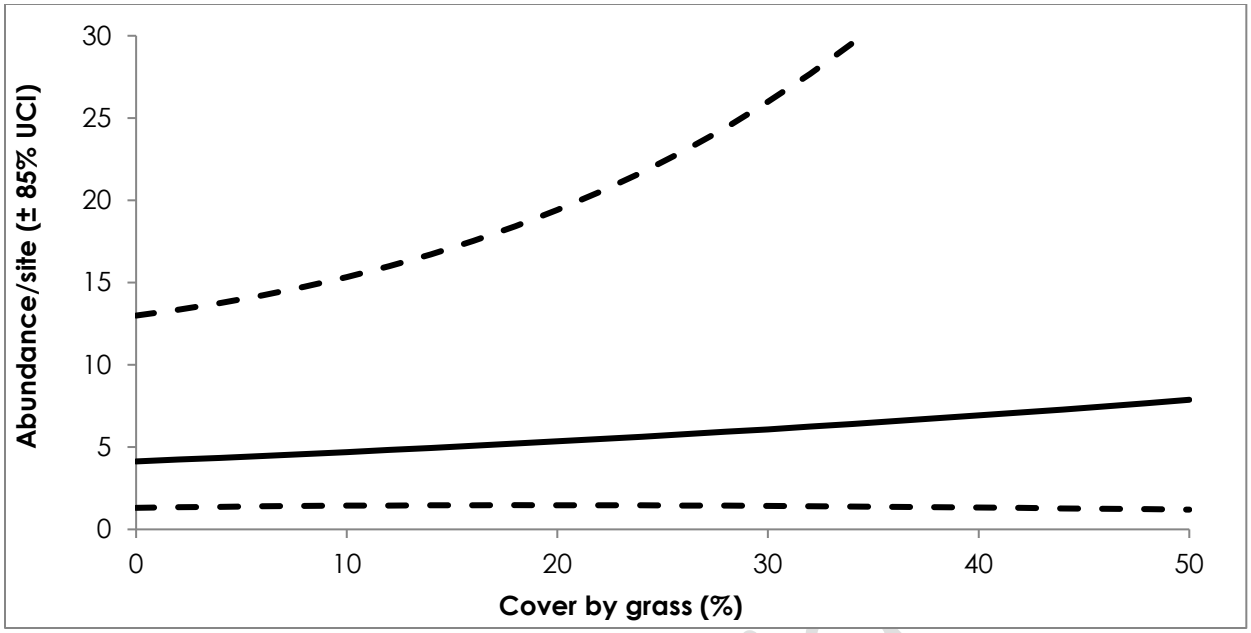


Figure 6. Detection-adjusted mean abundance (85% unconditional confidence interval) of upland sandpipers with increasing grass cover at DOW, Maine, 2016.

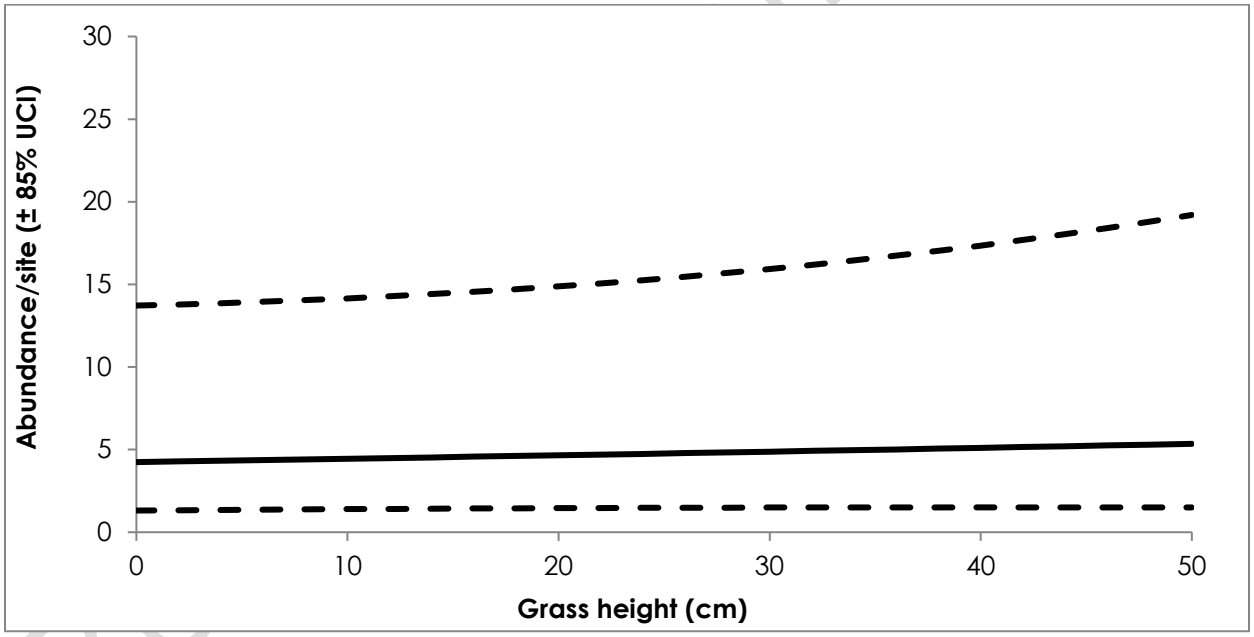


Figure 7. Detection-adjusted mean abundance (85% unconditional confidence interval) of upland sandpipers with increasing grass height at DOW, Maine, 2016.

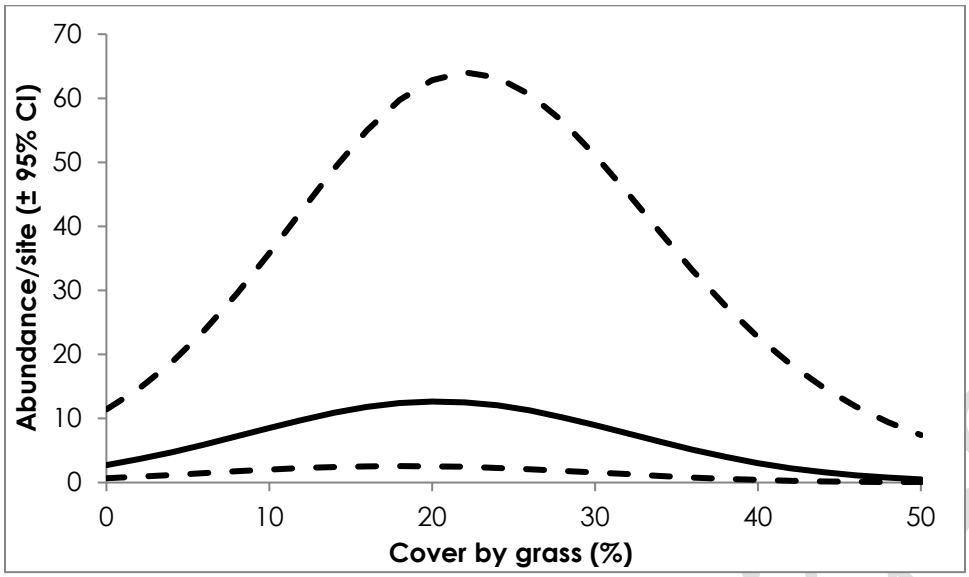


Figure 8. Detection-adjusted mean abundance (95% confidence interval) of upland sandpipers with increasing grass cover (quadratic form) at DOW, Maine, 2016.

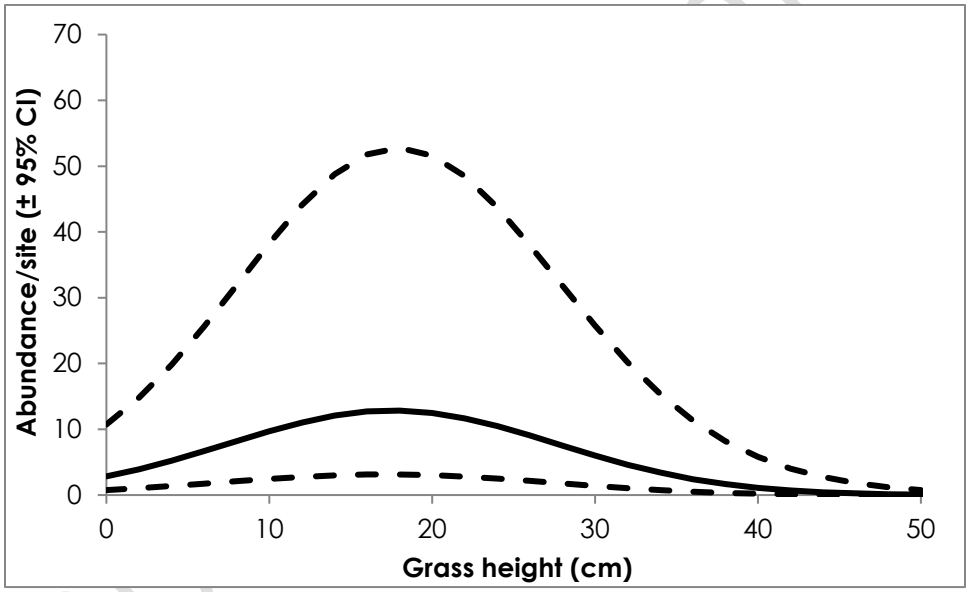


Figure 9. Detection-adjusted mean abundance (95% confidence interval) of upland sandpipers with increasing grass height (quadratic form) at DOW, Maine, 2016.

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3.2 UPLAND SANDPIPER FALL STAGING SURVEYS

Fall staging surveys for UPSA were conducted between 24 July to 9 September at 26 survey sites, including all 16 inside and an additional 10 sites outside the Project area. UPSA were detected 8 times in the Project area at sites 4, 5, 6, 7, and 8, but staging behavior was not observed.

3.3 OTHER TARGET SPECIES

Three of the other target species were detected inside and all 4 species outside the Project area (Table 3-6), with vesper sparrow being the most frequent and widespread (56 recorded inside and 48 outside the Project area). Six whip-poor-will observations were recorded in the Project area (7 outside the Project area), all during spring evening counts. Three northern harrier observations were recorded in the Project area, 1during spring and 2 in fall, and 2 were recorded offsite. One whimbrel was detected offsite, flying near Site 21 in mid-August, and none were observed onsite.

Table 3-6. Summary of grassland bird species detected (other than upland sandpiper), at DOW, Maine, 2016.

Species	Total No. of Obs	No. of Obs Inside	No. of Obs Outside	Site	Dates of Observation	Behavior	Flight Height Range (m)
Northern Harrier	5	3	2	3, 6, 20, 23, New 22	5/10, 5/24, 6/8, 7/25, 8/17	hunting, flyover	< 25-100
Vesper Sparrow	104	56	48	1-6, 8-15, 17, 19, 21-23, New 10, New 13-16, New 18-23, New 25, New 27	5/9-5/11, 5/12, 5/16-5/19, 5/23-5/26, 6/7-6/9, 6/20-6/22, 7/24-7/27, 8/16	perched, vocalizing, foraging	< 25
Eastern Whip-Poor-Will	13	6	7	1-3, 5, 7, 12, New 13, New 21	5/23-5/25, 6/6, 6/19, 6/20, 7/24, 8/16	perched, vocalizing	NA
Whimbrel	1	0	1	21	8/18	flyover	< 25

4.0 DISCUSSION

4.1.1 UPSA Abundance

Survey sites in this study were located in large fields ranging from 50 ha to over 700 ha. Consistent with Vickery et al.'s findings (1994), in which UPSA were uncommon on sites with <50 ha of suitable habitat, UPSA were not detected at sites in the smallest fields (i.e., New 15 (85 ha), New 16 (56 ha), and New 20 (81 ha)), all located in the northwest portion of the Project area; however, it is important to note that these sites were added partway through surveys and were surveyed for fewer rounds than Sites 1–12, and on dates after 1 June. Surveys of these smaller

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patches during future breeding seasons are recommended to further evaluate presence and habitat suitability.

The adjusted density estimate form this study (0.25 UPSA/ha) is similar to the pair density estimate known for Maine in Kennebunk Plains in York County, which was estimated as 4-12 pairs/100 ha (0.08-0.24 UPSA/ha) (Vickery 1993 as cited in Weik 2000). It is important to note however, that the current study did not formally estimate the number of breeding pairs using the same methods as Vickery (1993), and the Vickery (1993) estimates did not account for incomplete detection and are therefore likely biased low. It is also important to note that the mobility and intermingling of courting UPSA causes difficulty for observers trying to accurately estimate numbers of breeding pairs (Weik 2000), as well as the fact that pairs likely move freely throughout feeding areas (Ailes 1976; MDIFW 2013). The detection-adjusted abundance estimates in the current study were more than double the unadjusted detection estimates. Unadjusted detections provided a mean estimate closer to 5 pairs/100 ha, which would place the Project area at the lower end of the density spectrum identified by Vickery (1993).

4.1.2 UPSA Habitat

The data and models used in this study indicate that UPSA abundance increased and then decreased with increasing grass height and cover. Although analyses conducted to date indicate that these relationships may be weak, findings imply that some habitats may be more desirable to UPSA. Additional data may improve the potential for these models to identify relationships between abundance and habitat characteristics.

Displacement of grassland birds as a result of the construction and operation of inland wind energy facilities has been documented (Pearce-Higgins et al. 2009, 2012). In Shaffer and Buhl's study of multiple species at 3 wind energy facilities (2015), they reported no significant change in UPSA nesting density at 1 wind facility, significant change within 100 m of turbines but no effect beyond that at another facility, and significant change beyond 300 m of turbines but no effect closer than that at another facility. Thus, for UPSA the observed extent of displacement (i.e., spatial) and the associated behavioral response (e.g., abandonment, change in nest density) has been inconsistent.

An example of an operating wind energy facility with UPSA presence is the Wolfe Island Wind Facility (Wolfe Island or facility) located in the Province of Ontario, in the northeast corner of Lake Ontario. This 86 turbine facility encompasses roughly 23,000 acres (9,000 ha), has high quality grassland habitat throughout the entire facility, and a high abundance and diversity of grassland breeding birds (Ontario Partners in Flight, 2006 as cited in Stantec 2011). Upland sandpipers are common breeders at the facility; pre-construction surveys resulted in calculated density estimates for UPSA of 3.10 pairs/10 ha in 2006 and 1.4 pairs/10 ha in 2007 (Stantec 2011). Consultants conducted post-construction fatality monitoring at Wolfe Island in 3 consecutive years: 2009, 2010, and 2011. In 2010, the second year of monitoring, consultants conducting post-construction fatality monitoring documented an UPSA nest on bare ground as close as 35 m from the nearest turbine (Stantec 2011). This nest was on the disturbed ground under a clump of weeds. During the same year the nest was found, Stantec conducted disturbance effects monitoring for multiple bird groups including grassland birds at Wolfe Island. Monitoring involved

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2 methods: pre/post construction point counts and paired point counts, which allowed for mapping bird occurrences in 100-m bands from the base of turbines. Results did not suggest avoidance of the most common grassland breeding birds, including upland sandpiper, around the wind turbines (Stantec 2011). Observed densities of upland sandpiper as measured by point counts decreased between year 1 and year 2 post-construction years, but the same trend was not observed during area searches. These data suggest that breeding UPSA may be insensitive to potential disturbance effects of operating wind turbines, but that intact habitat for courtship and nesting is likely important.

No other nesting data or displacement data are available for UPSA at operational wind projects; however displacement is not expected to be significant as a result of the Project. The Project area contains approximately 3,650 acres (1,477 ha) of blueberry barrens. Additional habitat is abundant in areas to the northeast, north, and west of the Project. The Project is not currently planning to eliminate or convert large portions of existing blueberry fields to disturbed or developed area; therefore, loss of habitat is expected to be minimal. Additionally, proximate suitable habitat exists for any birds that may be displaced by Project development. Because nesting may occur within suitable habitat at the Project, Project construction within suitable breeding habitat that occurs outside the May and June breeding season would eliminate risk of impact to nests. Clearance surveys could also be conducted in suitable habitat to allow construction in areas with confirmed absence.

4.1.3 UPSA Collision

The northward migratory route of the majority of UPSA in North America is known to occur over the American central flyway (https://migration.pwnet.org/pdf/Flyways.pdf), through the central portion of the US over Texas, Kansas, and Mississippi (Houston and Bowen 2001 as cited in Vickery et al 2010). They may migrate in greater numbers along the eastern coast of the US when flying south (Veit and Petersen 1993), though published evidence of this phenomenon is lacking.

There have been only 4 known, publicly available UPSA fatalities at operational wind facilities in North America to date. Three UPSA fatalities have been documented in 3 years of monitoring during the breeding season at Wolfe Island (Stantec 2010, 2011), and 1 fatality was documented at the Ainsworth Wind Facility (Ainsworth) in Brown County, Nebraska (Derby et al. 2007). Ainsworth is a 36-turbine facility encompassing approximately 8,300 acres (3,400 ha), the majority of which is native sandhills grassland used primarily for livestock grazing (Derby et al. 2007). Three of the 4 fatalities, including 2 fatalities at Wolfe Island and the single fatality in Nebraska, occurred during the breeding season in May and June. The fourth fatality occurred in August at Wolfe Island (Stantec 2010). These data suggest that UPSA are vulnerable to collision fatality, mostly during the breeding season, if impact avoidance measures are not implemented.

Two out of 6 courtship behaviors (33%) observed during this study occurred in the Project area at Site 2: one instance reached rotor-swept height, considered to be approximately 130 m to 180 m. The courtship display lasted for one minute and 15 seconds, and flights occurred at heights over 130 m for approximately 50 seconds. Collision during the breeding season at the Project is possible in areas where UPSA perform courtship displays; however, avoiding siting turbines in areas where UPSA are known to display is likely not necessary to reduce risk, so long as

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operational adjustments are implemented during this sensitive period in occupied courtship habitat. Based on this study, displays occurred twice as frequently in the morning hours than the evening hours, from 10 May to 24 May, suggesting that a time of day component may also be relevant to minimizing risk of impact to the species.

Of the 5 courtship displays documented during surveys (i.e., excluding the incidental observation on May 12), 3 (60%) occurred less than 50 m from the nearest perch and nearest road, and 4 (80%) occurred greater than 100 m from the nearest forest (these parameters are not mutually exclusive). These data suggest that UPSA are displaying in interior portions of fields, and not on forest edges; therefore, risk of collision or displacement impact may be further reduced by siting turbines near edges of the blueberry barrens. The number of courtship displays observed was too small to allow for statistical analysis, however with additional similar data, the significance of these parameters in predicting where displays are most likely to occur could inform siting and/or timing of potential turbine curtailment and limit the need for yearly site-specific studies. Based on the timing of this study, it is possible that UPSA could have been displaying prior to initiation of surveys in early May 2016; therefore, additional surveys are recommended to improve understanding of courtship.

Although UPSA presence in August was established, staging behavior was not observed. Staging areas are considered those areas used by shorebirds to feed and rest during only the migration season (MDIFW 2013). Shorebirds in Maine exhibit staging behavior, which is when individuals congregate in large groups in areas with high concentrations of food prior to the southward migration. For most shorebirds, areas with high concentrations of food are considered wetlands and coastal areas in the Gulf of Maine (MDIFW 2013). Since staging involving multiple individuals was not observed at this Project, and few UPSA detections occurred during the staging period, it is likely that only minor, if any, influx of migrant UPSA occurred during the 2016 staging period at the Project, and UPSA that bred in the Project area staged in areas outside the Project. Additional surveys are recommended to confirm absence or document potential annual variation in UPSA, or other target species, fall staging at the site.

5.0 CONCLUSIONS

Analyses of data collected during this study indicate the following:

1. UPSA occurred in the majority of MDIFW-identified suitable habitat within the Project area and offsite during the breeding season.

2. Courtship behavior was observed at 1 site in the Project area in 2016 within a relatively large area of suitable habitat.

3. Courtship behavior documented in and near the Project was most concentrated during the morning hours, which may have application in defining operational adjustment of turbines near suitable habitat if deemed appropriate.

4. Staging behavior was not evident at DOW or offsite study sites in 2016.

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5. Replicating and improving this study in 2017 (e.g., maximizing detection probability of UPSA based on 2016 results, augmenting the vegetation dataset, and investigating landscape-level parameters such as patch size) is appropriate to evaluate annual variation in UPSA use and augment the data collected in this study (i.e., increase sample size and statistical power), which may improve the ability to evaluate habitat and abundance relationships.

6.0 LITERATURE CITED

Ailes, I.W. 1976. Ecology of the upland sandpiper in central Wisconsin. M.S. Thesis. Univ. of Wisconsin, Stevens Point. 63pp.

Anderson, D.R. 2008. Model Based Inference in the Life Sciences: a Primer on Evidence. - Springer Science + Business Media, LLC.

Arnold, T.W. 2010. Uninformative parameters and model selection using Akaike's Information Criterion. Journal of Wildlife Management 74:1175–1178.

Bolker, B.M. 2008. Ecological Models and Data in R. - Princeton Univ. Press.

Burnham, K.P. and Anderson, D.R. 2002. Model Selection and Multimodel Inference: a Practical Information-theoretic Approach. 2nd Edition. - Springer-Verlag.

Derby, C., A. Dahl, W. Erickson, K. Bay, and J. Hoban. 2007. Post-construction Monitoring Report for Avian and Bat Mortality at the NPPD Ainsworth Wind Farm. Prepared by Western EcoSystems Technology, Inc. for Nebraska Public Power District. February 27, 2007.

Fiske, I. and R. Chandler. 2011. unmarked: An R package for fitting hierarchical models of wildlife occurrence and abundance. Journal of Statistical Software, 43(10): 1 – 23.

Graham, M. H. 2003. Confronting multicollinearity in ecological multiple regression. Ecology 84(11): 2809 – 2815.

MacKenzie, D. I., J. D. Nichols, G. B. Lachman, S. Droege, J. A. Royle, and C. A. Langtimm. 2002. Estimating site occupancy rates when detection probabilities are less than one. Ecology 83: 2248 – 2255.

Mazerolle, M. J. 2016. AICcmodavg: Model selection and multimodel inference based on (Q)AIC(c). R package version 2.0-4. http://CRAN.R-project.org/package=AICcmodavg.

MDIFW (Maine Department of Inland Fisheries and Wildlife). 2013. Shorebirds. http://www.maine.gov/ifw/wildlife/species/birds/shorebirds.html. Accessed 26 October 2016.

Pearce-Higgins, J. W., L. Stephen, A. Douse, and H. W. Langston. 2012. Greater impacts of wind farms on bird populations during construction than subsequent operation: results of a multi-site and multi-species analysis. Journal of Applied Ecology (49): 386–394.

Business Confidential

Pearce-Higgins, J. W., L. Stephen, R. H. W. Langston, I. P. Bainbridge, and R. Bullman. 2009. The distribution of breeding birds around upland wind farms. Journal of Applied Ecology.

R Development Core Team. 2016. R: A Language and Environment for Statistical Computing. Version 3.3.0. R Foundation for Statistical Computing, Vienna, Austria. http://www.R-project.org.

Royle, J. A. 2004. *N*-mixture models for estimating population size from spatially replicated counts. Biometrics 60: 108 – 105.

Royle, J. A. and R. Dorazio. 2008. Hierarchical Modeling and Inference in Ecology. Academic Press.

Shaffer, J. A. and D. A. Buhl. 2015. Effects of wind-energy facilities on breeding grassland bird distributions. Conservation Biology 00 (0): 1–13.

Stantec (Stantec Consulting Ltd.) 2010. Wolfe Island Ecopower® Centre. Post-construction Follow-up Plan. Bird and Bat Resources. Monitoring Report No. 2. July – December 2009. Prepared for TransAlta wholly owned subsidiary Canadian Renewable Energy Corporation. May 2010.

Stantec (Stantec Consulting Ltd.) 2011. Wolfe Island Wind Plant. Post-construction Follow-up Plan. Bird and Bat Resources. Monitoring Report No. 3. January – June 2010. Prepared for TransAlta wholly owned subsidiary Canadian Renewable Energy Corporation. January 2011.

Vickery, P. D., D. E. Blanco, and B. Lopez-Lanus. 2010. Conservation Plan for the Upland Sandpiper (*Bartramia Longicauda*). Version 1.1. Manomet Center for Conservation Sciences, Manomet, Massachusetts.

Vickery, P. D., M. L. Hunter, Jr., and S. M. Melvin. 1994. Effects of habitat area on the distribution of grassland birds in Maine. Conservation Biology 8(4): 1087-1097.

Veit, R. R. and W. R. Petersen. 1993. The birds of Massachusetts. Lincoln, MA: Massachusetts Audubon Society.

Weik, A.P. 2000. Upland sandpiper assessment. Maine Department of Inland Fisheries and Wildlife. Wildlife Division. Wildlife Resource Assessment Section. Bird Group. April 5, 2000.

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APPENDIX A
REVISED WORK PLAN FOR 2016 GRASSLAND BIRD SURVEYS – PROPOSED DOWNEAST WIND PROJECT, 16 MAY 2016

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Revised Work Plan for 2016 Grassland Bird Surveys – Proposed Downeast Wind Project

Downeast Wind Project
Washington County, Maine



Prepared for:
Apex Clean Energy, Inc.

Prepared by:
Stantec Consulting Services Inc.

May 16, 2016

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Appendix A. Field Survey Data Sheets

1.0 INTRODUCTION

Apex Clean Energy, Inc. (Apex) is developing the Downeast Wind Project (Project) in Washington County, Maine in the towns of Cherryfield, Columbia, Columbia Falls, Township T19 MD BPP, and Township T25 MD BPP (Figure 1). At this time, the Project is expected to generate up to approximately 90 megawatts of power and include up to 30 turbines. Turbines are expected to have a total height of approximately 183 meters (600 ft). Project infrastructure is expected to include underground collector lines, a generator lead transmission line, new and improved roads, a collection substation, an operations and maintenance building, and 2 or 3 permanent meteorological towers.

The Project area consists of actively managed blueberry fields and hills with mixed forest habitat. The western and central portions of the Project area have little topography and contain a network of dirt roads that intersect the blueberry fields. Other habitats in these portions include hedgerows, and small ponds. The northern and eastern portion of the Project area is more topographically variable, developed with residences, farms, fallow fields, paved roads, and mixed forest.

The upland sandpiper (UPSA; *Bartramia longicauda*) breeding population is listed as threatened in the state of Maine. Region-wide surveys have indicated that the core of the UPSA's range in New England and New York includes the blueberry barrens in Washington and Hancock counties (Weik 2000). MDIFW has mapped suitable breeding habitat for UPSA throughout the state, and 7 polygons are located within the Project area. While a few of these polygons are relatively small, 4 areas—In Township T19 and Columbia—are large. Overall, there are approximately 7,000 acres of mapped UPSA habitat within the Project area.

The blueberry fields in the Project area potentially provide suitable habitat for state threatened UPSA as well as four other species including northern harrier (*Circus cyaneus*), vesper sparrow (*Pooecetes gramineus*), eastern whip-poor-will (*Caprimulgus vociferus*)and whimbrel (*Numenius phaeopus*). Northern harrier, whimbrel, and eastern whip-poor will are state species of special concern. The vesper sparrow is not a state listed threatened, endangered, or species of special concern but was an additional species MDIFW expressed interest in. Apex has retained Stantec and Dr. Kimberly Peters to assess potential risk of impact to these species as a result of the Project and inform potential siting or operational considerations to avoid or minimize risk. Dr. Peters will oversee the development of the study design, implementation of field studies, and data analyses.

A previous study plan was provided to MDIFW on April 21, 2016. This study plan has been revised based on comments received from the MDIFW on April 29, 2016 and technical input provided by Dr. Kimberly Peters, an avian biologist with expertise on grassland birds, including UPSA.

Specifically, this study plan has been revised to:

- Clarify that a grassland bird expert will provide technical oversight of the study design, implementation, and data analyses;
- Clarify that other grassland bird species of concern including northern harrier, vesper sparrow, whimbrel, and eastern whip-poor-will will be surveyed during the field studies;
- Clarify the habitat data that will be collected at each point count location;
- Include refined mapping of potential grassland habitat;
- Include four additional potential survey point locations;
- Clarify survey timeframes and playback protocols; and
- Include an additional field survey in early September during the staging period

The survey methodology outlined in this work plan is based on protocols for 1) assessing UPSA presence from the Wisconsin Department of Natural Resources and Pennsylvania Game Commission, 2) modeling habitat suitability from the Pennsylvania Game Commission, 3) feedback from the MDIFW, and 4) expert consultation with Dr. Peters.

2.0 UPLAND SANDPIPER BACKGROUND

An estimate of UPSA in Maine in the 1990s was approximately 160 pairs (Weik 2000). UPSA inhabit grasslands including hay fields, lightly grazed pastures (Ailes 1976, Bowen 1976, Bowen and Kruse 1993 as cited in Weik 2000), agriculture fields, grass portions of airfields (Osborne and Peterson 1984, Vickery et al. 1994 as cited in Weik 2000), large peatlands (Weik and Purtell 2000 as cited in Weik 2000), and shrub-dominated sites such as lowbush blueberry barrens (Weik 2000). In Maine, particularly in grassland and large commercial blueberry barrens, upland sandpipers are uncommon on sites < 50 hectares (124 acres) and have a 50% incidence rate on sites roughly 200 hectares (494 acres) (Vickery et al. 1994 as cited in Weik 2000). In Washington County, UPSA lay eggs between mid-May and mid-June, and eggs hatch between mid-June and mid-July (Weik, unpublished data, as cited in Weik 2000).

The courtship behavior of UPSA poses potential risk to siting and operation of wind projects. During courtship displays, male sandpipers fly with short bursts of alternating rapid flight and long gliding in circular or elliptical patterns as high as 200 m (656 ft) above the ground (Weik 2000). These vertical displays can reach heights within the rotor-swept zone of turbines. To date, there have been 4 publicly-known UPSA fatalities at wind facilities, 1 in Nebraska (Derby et al. 2007) and 3 at an island wind project in Ontario (Stantec 2010, 2011). Three of the 4 fatalities, including 2 fatalities in Ontario and the single fatality in Nebraska, occurred during the breeding season in May and June. The fourth fatality occurred in August. In the same year that the August fatality

was documented at a wind project in Ontario (2009), an UPSA nested on the bare ground as close as 35 m from the nearest turbine (Stantec 2010).

3.0 2016 FIELD SURVEY OBJECTIVES

Objectives of the 2016 grassland bird surveys are to:

- document and locate occurrences of sensitive grassland bird species in the Project area including UPSA, northern harrier, vesper sparrow, eastern whip-poor-will, and whimbrel;
- characterize the associated habitat through quantitative assessments of vegetation;
- refine currently mapped UPSA habitat polygons based on field studies and observations;
- estimate the approximate number of displaying males;
- document the timing and characteristics of flight displays (i.e., flight heights, percent within the rotor-swept zone (RSZ), and time spent in the RSZ);
- document locations of upland sandpiper and whimbrel staging areas for fall migration and, if present, their general behavior during staging; and
- assess potential risk of impact to the species as a result of the Project and inform potential siting or operational considerations to avoid or minimize risk.

Depending on the presence of UPSAs, two secondary objectives may be to

- model abundance via an occupancy model (Royle and Nichols 2003, Royle 2004); and
- model habitat suitability.

4.0 2016 FIELD SURVEY METHODS

Field surveys will be completed at least once per month from May through September. Surveys will occur during the breeding season including the period of territory establishment and courtship as well as the nesting period. Surveys will also occur during the late summer staging period.

4.1 BREEDING SEASON SURVEYS

Surveys will occur during the 2016 breeding season from early May before egg-laying to late June when birds are on eggs or eggs hatch. Each point will be surveyed during three survey events in May and two survey events in June by a Stantec bird biologist with experience and expertise in grassland bird species: 2 survey events will occur in May targeting territory establishment and displaying periods, 1 survey event will occur in late May targeting nesting, and 2 survey events will occur in June targeting nesting. Morning and evening surveys will be conducted during each survey event. The two survey events conducted during the territory establishment and courtship period will result in each point being surveyed twice in the morning and once in the evening. The three survey events conducted during the nesting period will result in each point being surveyed three times in the morning and once in the evening. The temporal

distribution of the surveys will be randomly assigned. Surveys will occur in all weather conditions except for in heavy rain or high winds where visual or auditory detections would be impaired.

Surveys will occur at 29 points with a 250-meter (m) radius. Points generally will be centered on existing roads (Figure 1). Survey points were identified based on logistical (e.g., road access) and landowner accessibility as well as adequate coverage of MDIFW mapped UPSA habitat. Four of the 29 survey point locations are potential survey point locations as landowner permission is pending for access to this potential habitat area. These points will be included in the 2016 survey area if landowner permission is obtained. In the absence of survey data for these locations, and if project infrastructure is proposed within this area, potential UPSA use will be extrapolated for this area based on an analysis of utilization and distribution data obtained elsewhere in the project area with similar habitat conditions. UPSAs may be assumed to be present if necessary.

Morning surveys will occur one-half hour before sunrise until 10:00 AM. Evening surveys will be completed one hour before sunset until one hour after sunset.

At each point, a Stantec biologist will conduct a visual survey for 10 minutes, scanning 360° around the survey point with binoculars and/or a spotting scope to search and listen for UPSA and other sensitive grassland bird species. The biologist will scan fence posts, sign posts, utility wires, and any other potential perches and over fields. If no UPSAs are documented after the visual and auditory survey, the Stantec biologist will broadcast an UPSA call over a 1-minute period to attempt to elicit a territorial call or response call indicative of breeding individuals. After the call broadcast period, Stantec will listen for an additional 4 minutes for a response.

In order to minimize the potential for duplicating or influencing bird counts during call broadcasts, point locations that abut each other will not be surveyed consecutively if the biologist determines that call broadcasts could potentially be heard in the adjacent survey point area.

Locations of UPSAs and other target grassland bird observations will be mapped within the 250-m radius point circle. Data will be recorded on the Grassland Bird Survey Field Data Form (Appendix A). Other non-target bird species observed during grassland surveys will be recorded as incidental observations.

Habitat data will be collected from each of the survey points in June. At each survey point, a 1-m × 1-m quadrat will be established 100-m in each cardinal direction from the center of the survey point location (i.e., 4 total quadrats per point). If a quadrat occurs on or within 25 m of a road, the plot will be moved 50 m into the grassland/blueberry field area perpendicularly from the road. Data for each observation will be recorded on the Grassland Brid Survey Habitat Data Form (Appendix A). Size of contiguous field will be estimated using desktop GIS analysis. Other landscape characteristics will also be estimated using GIS as available and appropriate (e.g. distance from tree line).

Observations of UPSA and other sensitive grassland bird species made while conducting other on-going field surveys such as eagle point counts, diurnal raptor surveys, breeding bird surveys, or other site visits will also be documented using the Grassland Bird Survey Field Data Form and the location of the observation will be sketched onto field maps.

4.2 FALL STAGING SEASON SURVEYS

Surveys will occur during the 2016 fall staging period from late July to early-September at the same points as spring surveys. Each point will be surveyed three times in the morning, once in late July, once in mid-August, and once in early September. Evening surveys will be completed once at each survey point during the fall staging period. Methodology at points will be the same as in spring.

Observations of UPSA and other sensitive grassland bird species made while conducting on-going field surveys such as eagle point counts, diurnal raptor surveys, and site visits will be documented using the Grassland Bird Survey Field Data Form and the location of the observation will be sketched onto field maps.

5.0 DATA ANALYSIS AND REPORTING

Data will be summarized in a single report to include an introduction, methods, results, and discussion sections. Photographs and figures will be included as appropriate. Maps of the Project area showing display sites and staging areas will be included as appropriate.

Stantec will use occupancy modelling methods to estimate grassland bird abundance for target grassland species as appropriate based on sample size (Royle and Nichols 2003, Royle 2004). Habitat and survey timing (i.e., morning vs. evening) parameters will be included as covariates in occupancy models as appropriate, and all model results will report potential biases (MacKenzie 2005). Stantec will perform density mapping to identify areas with the greatest concentration of UPSA abundance, UPSA activity, and other sensitive grassland bird observations. UPSA habitat suitability will be assessed and mapped based on relevant landscape parameters using kernel or other resource utilization function methods (Hegel et al. 2010). If appropriate, utilization distribution modeling (e.g., Keating and Cherry 2009) will be completed to evaluate suitability of proposed development areas in potential grassland bird habitat that may have been inaccessible at the time of the field studies (e.g., landowner permission not obtained prior to conducting surveys).

The report will assess risk of impact to the species as a result of Project construction and operation based on qualitative and quantitative results, and will provide considerations to avoid or minimize risk. The final report will be provided to the MDIFW along with appropriate data, maps, and photographs.

6.0 LITERATURE CITED

Ailes, I.W. 1976. Ecology of the upland sandpiper in central Wisconsin. M.S. Thesis. Univ. of Wisconsin, Stevens Point. 63pp.

Bowen, D.E. 1976. Coloniality, reproductive success, and habitat interactions in upland sandpipers (*Bartramia longicauda*). M.S. Thesis. Kansas St. Univ. Manhattan. 127pp.

Bowen, B.S. and A.D. Kruse. 1993. Effects of grazing on nesting by upland sandpipers in southcentral North Dakota. J. Wildl. Manage. 57:291–301.

Derby, C., A. Dahl, W. Erickson, K. Bay, and J. Hoban. 2007. Post-construction Monitoring Report for Avian and Bat Mortality at the NPPD Ainsworth Wind Farm. Prepared by Western EcoSystems Technology, Inc. for Nebraska Public Power District. February 27, 2007.

Hegel, T.M., S.A. Cushman, J. Evans and F. Huettmann. 2010. Current state of the art for statistical modelling of species distributions. Pages 273-311 *In* S.A. Cushman and F. Huettmann (eds.), Spatial Complexity, Informatics, and Wildlife Conservation. DOI 10.1007/978-4-431-87771-4_16, Springer 2010.

Keating, K.A. and S. Cherry. 2009. Modeling utilization distributions in space and time. Ecology 90: 1971–1980.

MacKenzie, D. I. 2005. What are the issues with presence-absence data for wildlife managers? Journal of Wildlife Management 69(3): 849–860.

Osborn, D.R. and A.T. Peterson. 1984. Decline of the upland sandpiper (*Bartramia longicauda*) in Ohio: an endangered species. Ohio J. Sci. 84: 8–10.

Royle, J.A. 2004. *N*-mixture models for estimating population size from spatially replicated counts. Biometrics 60:108–115.

Royle, J.A., and J.D. Nichols. 2003. Estimating abundance from repeated presence-absence data or point counts. Ecology 84:777–790.

Stantec Consulting Ltd. 2010. Wolfe Island Ecopower® Centre. Post-construction Follow-up Plan. Bird and Bat Resources. Monitoring Report No. 2. July – December 2009. Prepared for TransAlta wholly owned subsidiary Canadian Renewable Energy Corporation. May 2010.

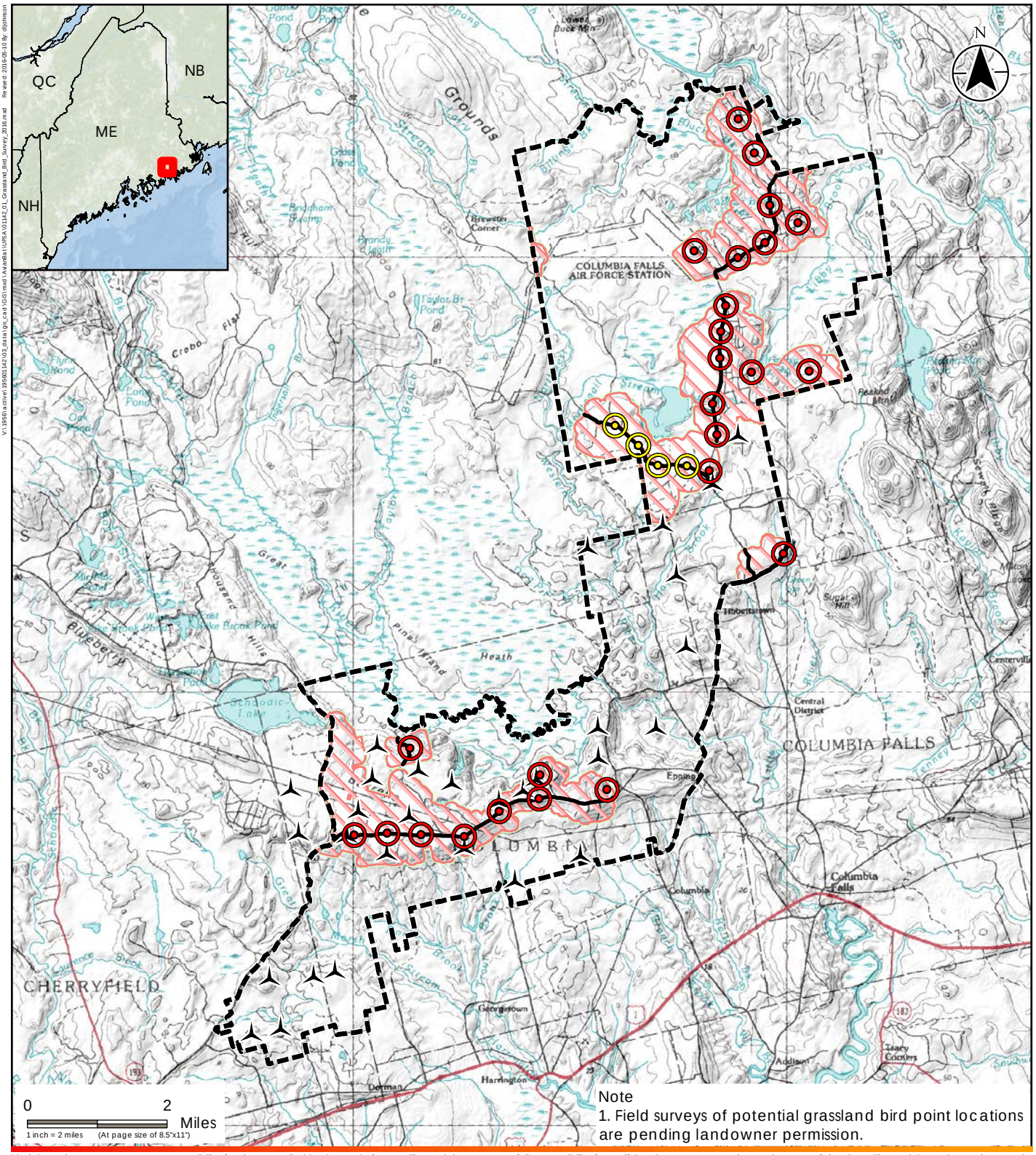
Stantec Consulting Ltd. 2011. Wolfe Island Wind Plant. Post-construction Follow-up Plan. Bird and Bat Resources. Monitoring Report No. 3. January – June 2010. Prepared for TransAlta wholly owned subsidiary Canadian Renewable Energy Corporation. January 2011.

Vickery, P.D., M.L. Hunter, Jr., and S.M. Melvin. 1994. Effects of habitat area on the distribution of grassland birds in Maine. Conservation Biology. 8:1087–1097

Weik, A.P. 2000. Upland sandpiper assessment. Maine Department of Inland Fisheries and Wildlife. Wildlife Division. Wildlife Resource Assessment Section. Bird Group. April 5, 2000.

Weik, A.P. and R. Purtell. 2000. Grassland birds. Pages 88–89 in A survey of rare, threatened, and endangered fauna in Maine: East Coastal and Eastern Interior Regions (1999). A. Weik, P. deMaynadier, and T. Hodgmen, eds. Unpublished report of the Maine Department of Inland Fisheries and Wildlife, Bangor, ME.

FIGURE 1



Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

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Legend

- Turbine Layout (2016-04-14)
- Grassland Bird Point Count Location
- Potential Grassland Bird Point Count Location
- Grassland Bird Point Count 250m Buffer
- Potential Grassland Bird Point Count 250m Buffer
- Upland Sandpiper Habitat in Project Area
- e911 Roads Clipped to Habitat

Client/Project
Apex Clean Energy, Inc.
Apex Downeast Wind Project
Washington County, Maine

Figure No.
1

Title
2016 Grassland Bird Survey Point Locations

5/10/2016

Appendix A FIELD SURVEY DATA SHEETS

Apex Downeast Wind Project
Grassland Bird Survey Habitat Data Form

***Veg. Class.:**
Low shrub
Grass
Bare ground
Other herb
Forested
Other

Sample Point ID: _____
Observer Name: _____
Date: _____

1-m² vegetation plot established 100m from point center in each cardinal direction

NORTH: **Photograph #:** _____

Veg. Class.*	% cover	Avg. height (cm)	Max. height (cm)

Vegetation distribution of plot (circle one): **Patchy** **Even** **Other (describe):**

Character (circle all that apply): **burned** **mowed** **Plowed/ grubbed** **Rock removal** **sprayed**

EAST: **Photograph #:** _____

Veg. Class.*	% cover	Avg. height (cm)	Max. height (cm)

Vegetation distribution of plot (circle one): **Patchy** **Even** **Other (describe):**

Character (circle all that apply): **burned** **mowed** **Plowed/ grubbed** **Rock removal** **sprayed**

SOUTH: **Photograph #:** _____

Veg. Class.*	% cover	Avg. height (cm)	Max. height (cm)

Vegetation distribution of plot (circle one): **Patchy** **Even** **Other (describe):**

Character (circle all that apply): **burned** **mowed** **Plowed/ grubbed** **Rock removal** **sprayed**

WEST: **Photograph #:** _____

Veg. Class.*	% cover	Avg. height (cm)	Max. height (cm)

Vegetation distribution of plot (circle one): **Patchy** **Even** **Other (describe):**

Character (circle all that apply): **burned** **mowed** **Plowed/ grubbed** **Rock removal** **sprayed**

Apex Downeast Wind Project
Grassland Bird Survey Field Data Form

Sample Point ID / Location _____
Observer Name: _____
Date: _____
Start Time: _____ **End Time:** _____

Weather:

Temp (°C): _____ Wind speed (m/s): _____ Wind direction: _____ Sky condition: _____ Cloud type and % coverage: _____

General Notes: _____

Observation Data

Locations drawn on field map? Y / N

Behavior Observations (number of individuals):

Species	Perched	Flyover (F)	Courtship display (C)	Territorial display (T)	Incubation	Feeding	Other	Sex		
								M	F	Unk
EWPW										
NOHA										
UPSA										
VESP										
WHIM										

Flight Behavior Details:

Species	Flight Behavior type (F, C,T)	Display time (min.sec)	Max. flight height (nearest 25 m)	Duration of flight height >130 m (min.sec)	Min. distance to nearest road (m)	Min. distance to nearest forest edge (m)	Min. distance to nearest perch (m)	Min. distance to nearest windrow (m)	Min. distance to nearest dwelling or structure (m)

CONTINUED ONTO PAGE 2 →

First Time Observed (number of individuals):

Species	Visual / Listening Period															Playback Period											
	0–3 min					3–5 min					5–10 min					Playback (Y/N)?	Playback Response (Y/N)?*	0–3 min					3–5 min				
	Distance from Center					*Distance from Center*					*Distance from Center*							*Distance from Center*					*Distance from Center*				
	<50 m	50–100 m	100–250 m	>250 m	flyover	<50 m	50–100 m	100–250 m	>250 m	flyover	<50 m	50–100 m	100–250 m	>250 m	flyover			<50 m	50–100 m	100–250 m	>250 m	flyover	<50 m	50–100 m	100–250 m	>250 m	flyover
EWPW																											
NOHA																											
UPSA																											
VESP																											
WHIM																											

*Describe playback response: _____

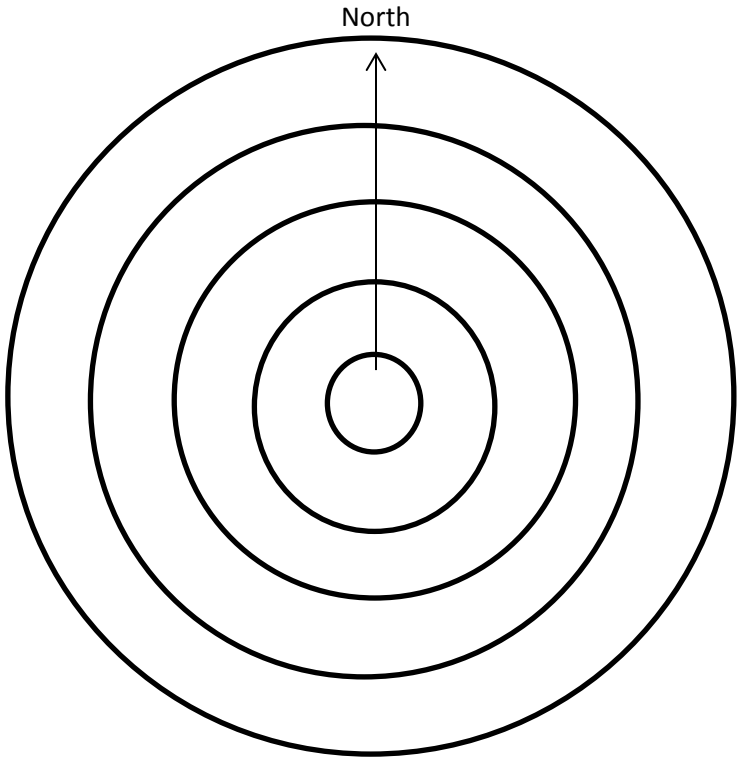
Number of available perches within 250-m radius plot: _____

Additional Comments: _____

Point Count Map

(each concentric circle is 50 meters)

Sketch approximate locations of bird observations



Grassland Bird Surveys Downeast Wind Project – 2016 and 2017

Washington County, Maine

Prepared by:
Stantec Consulting Services Inc.
30 Park Drive
Topsham, Maine 04086
and
209 Commerce Parkway
Cottage Grove, WI 53527-8955

February 14, 2018

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Executive Summary

Stantec completed a grassland bird study for the proposed Downeast Wind Project (DOW or Project) in Washington County, Maine, during the spring breeding and fall staging seasons in 2016 and 2017.The spring surveys were completed in morning and evening hours of the courtship and nesting seasons (May and June). The fall surveys were completed in the morning and evening hours of the fall staging period (July–October). The target species of the surveys was upland sandpiper (*Bartramia longicauda;* UPSA) and, per request of the Maine Department of Inland Fisheries and Wildlife (MDIFW), also included vesper sparrow (*Pooecetes gramineus*) and the following state Species of Special Concern: northern harrier (*Circus cyaneus*), eastern whip-poor-will (*Caprimulgus vociferus*), and whimbrel (*Numenius phaeopus*). The main purposes of the surveys were to document and locate occurrences of these species in and in the vicinity of the Project area, to characterize UPSA flight displays, to model the characteristics of occupied UPSA habitat, and to inform potential siting or operational strategies to avoid or minimize risk to UPSA and target species.

Point counts for UPSA and target species were completed at a total of 69 sites between May 9 and June 23, 2016, and April 24 and June 16, 2017 (mean = 6.3, SE = 0.3, surveys/site; range = 2 – 9). UPSA were detected at 43 of 69 sites (62% occurrence) during the 2 seasons of surveys, including at 17 of 36 (47%) sites inside and 26 of 33 (79%) sites outside of the Project area. UPSA were detected 155 times (mean detections/survey/site = 0.4; mean maximum detections/site = 1.4; mean total detections/site = 2.2). Abundance estimates were calculated using hierarchical models that explicitly accounted for detection error (i.e., birds present but not detected) and effort at each site. Assuming a 1:1 sex ratio, the overall 2016-2017 estimate of breeding pairs was 81 ((4.7 birds/site*69 sites)/2 years) = 162 birds*0.5 females). Given that each site was 48.5 acres (~20 hectares [ha]), the overall density estimate was 0.24 UPSA/ha/year.

In spring 2016 and spring 2017, UPSA courtship behaviors were observed on 16 occasions from May 3 to June 16. Courtship was observed inside the Project area on 4 occasions at 4 sites and outside the Project area on 12 occasions at 7 sites. Maximum height of courtship displays ranged from < 25 m to > 500 m, and all were > 50 m from forest edges.

In spring and fall 2017, within the Project area, 148 vesper sparrow, 2 eastern whip-poor-will, 5 northern harrier, and 0 whimbrel observations were recorded. In spring and fall 2016, within the Project area, 56 vesper sparrow, 6 eastern whip-poor-will, 3 northern harrier, and 0 whimbrel observations were recorded.

The 2016-2017 dataset indicated the following key findings:

1. UPSA were documented during the breeding season within MDIFW-mapped suitable habitat polygons.
2. Density and abundance of UPSA during the breeding season was significantly higher in areas outside the Project area than onsite in both years (44 UPSA detections inside the Project area [mean detections/survey/site = 0.2; mean maximum detections/site = 0.8;

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mean total detections/site = 1.2]; and 111 UPSA detections outside the Project area [mean detections/survey/site = 0.6; mean maximum detections/site = 2.1; mean total detections/site = 3.4]).

3. UPSA abundance was higher at sites in and near the Project area within larger fields ($\beta_{field.size}$ = 0.31; 85% unconditional confidence intervals [UCI] = 0.10 – 0.52), and no UPSA were documented in fields < ~90 acres (35 ha) at onsite or offsite locations.
4. UPSA abundance was lower at sites inside the Project area containing greater proportions of tree cover within a 250-m radius (i.e., average forest in each site plot; β_{forest} = - 0.23; 85% UCI = - 0.44 – - 0.02).
5. The probability of courtship behavior in and near the Project decreased as the hour of the day increased (β_{hour} = - 0.77, 95% confidence intervals [CI] = - 1.49 – - 0.06, p = 0.035); with 70% of morning courtship instances occurring between 5:30 and 7:30 AM.
6. The probability of courtship behavior in and near the Project increased with decreasing cloud cover (β_{cloud} = - 0.92, 95% CI = - 1.54 – - 0.30, p = 0.004).
7. 98.8% of UPSA detections and 100% of UPSA courtship displays documented in and near the Project occurred > 50 m from the nearest forest edge.
8. Target species, including UPSA, did not exhibit staging behavior in the Project area.

Results of this study indicate that siting turbines away from interior areas where courtship occurs or adjusting operations during higher risk periods is likely to reduce risk of collision mortality. Based on the 2016-2017 study, to minimize the risk of potential collision of UPSA with operational turbines, turbines should be limited near Sites 11, 12, 15, and 19 and be sited as close to forest edges as possible, or operational curtailment should be implemented under the following conditions: May 1–June 20, from sunrise to 10:00 AM, on days with clear to partly cloudy skies.

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1.0 INTRODUCTION

Stantec completed a grassland bird study on land in and adjacent to the proposed Downeast Wind Project (DOW or Project) in Washington County, Maine, during 2016 and 2017 (Figure 1-1). Results of the 2016 survey are summarized in Grassland Bird Surveys Downeast Wind Project – May to September 2016 (2016 Grassland Bird Report; Stantec 2017). Results and analyses presented in this report represent combined data collected during the 2016 and 2017 surveys.

The target species of the grassland bird survey was upland sandpiper (*Bartramia longicauda*; UPSA) and, per request of the Maine Department of Inland Fisheries and Wildlife (MDIFW), also included vesper sparrow (*Pooecetes gramineus*) and the following state Species of Special Concern: northern harrier (*Circus cyaneus*), eastern whip-poor-will (*Caprimulgus vociferus*) and whimbrel (*Numenius phaeopus*).

Objectives of the grassland bird study were to:

1. Document and locate occurrences of sensitive grassland bird species in the Project area.
2. Estimate UPSA arrival dates.
3. Estimate the number of displaying UPSA males and breeding UPSA.
4. Document the timing and characteristics of flight displays (i.e., flight heights, percent within the rotor-swept zone, and time spent in the rotor-swept zone).
5. Document locations of UPSA and whimbrel staging areas for fall migration and, if present, their general behavior during staging.
6. Model the characteristics of occupied breeding habitat through quantitative assessments of vegetation and landscape features.
7. Refine currently mapped UPSA habitat polygons based on field studies and observations.
8. Assess potential risk of impact (collision and/or displacement) to UPSA as a result of the Project and inform potential siting or operational strategies to avoid or minimize risk.

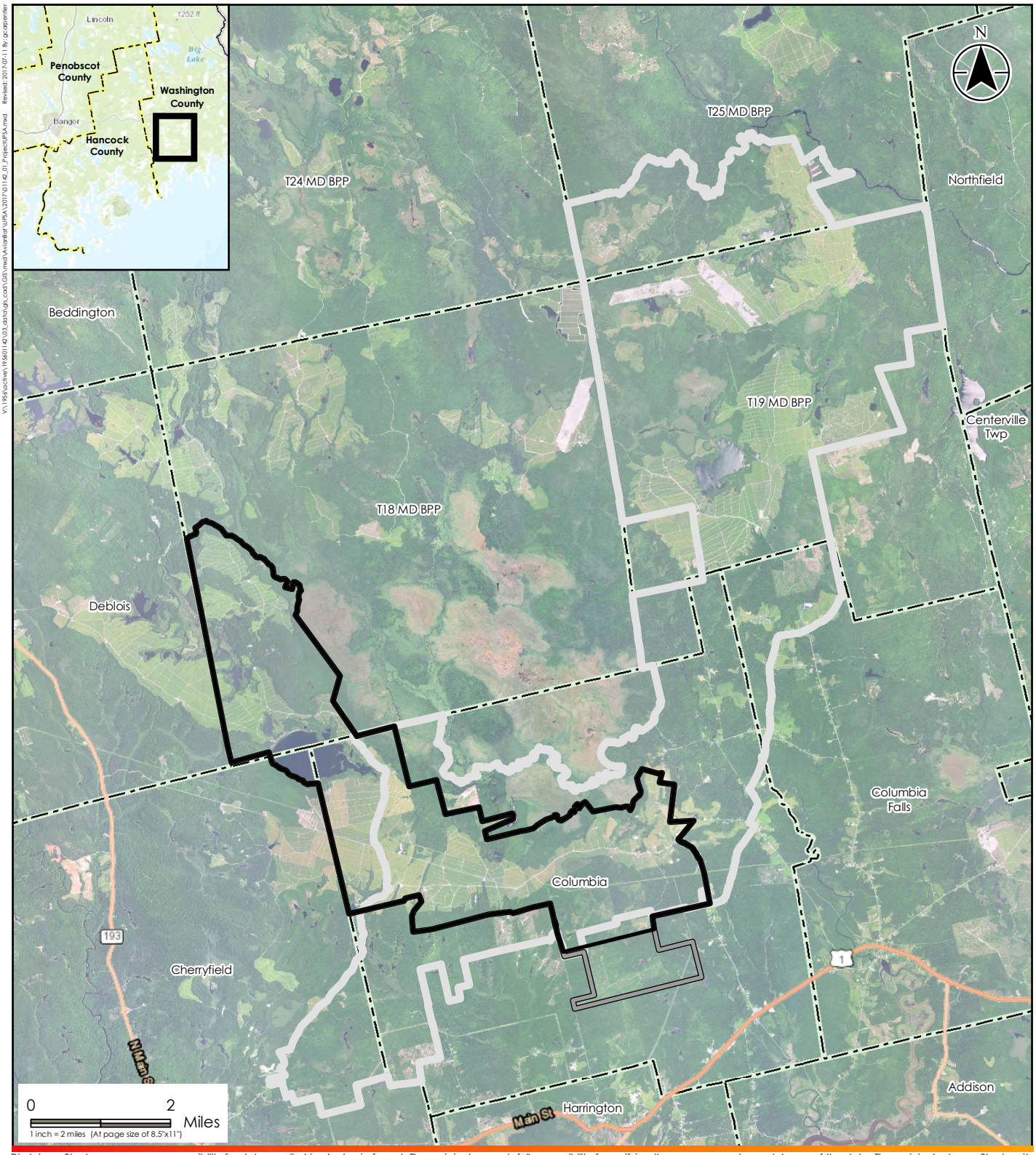
The 2016 and 2017 study objectives and methods were determined in coordination with MDIFW. The timeline for communication with MDIFW is as follows:

- The 2016 draft study plan was provided to MDIFW on April 21, 2016.
- MDIFW commented on April 29, 2016, and the draft study plan was revised on May 16, 2016, to incorporate MDIFW's comments.
- Dr. Kimberly Peters of DNV GL, an avian biologist with expertise on grassland birds including UPSA, joined the Project team.

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- Meeting with MDIFW on January 19, 2017, to review results of the 2016 study. MDIFW requested that the 2017 study be initiated earlier by 1 week and extend later by 1 week than the 2016 study.
- The draft 2017 study plan was provided to MDIFW on February 10, 2017. It incorporated MDIFW's request to extend the study period.
- Meeting with MDIFW on March 2, 2017, to further discuss the 2016 grassland bird study results. MDIFW verbally approved the 2017 draft study plan.
- Meeting with MDIFW on May 31, 2017, to preliminarily discuss an Incidental Take Permit.
- Meeting with MDIFW on July 13, 2017, to discuss the 2017 study results and potential mitigation options.

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195601142

Stantec

30 Park Drive
Topsham, ME USA 04086

Legend

- Project Area (5/23/2017)
- Project Area (9/28/2016)
- Project Area (11/23/2015)

Project

Downeast Wind Project
Washington County, Maine

Figure No.

1-1

Title

Downeast Wind Project Location

Prepared by GAC on 2017-07-10
Review by SBG on 2017-07-10

01142_01_ProjectUPSA.mxd

V:\195\active\195601142\03_data\gis_cad\GIS\mxd\Wetland UPSA\2017\01142_01_ProjectUPSA.mxd Revised: 2017-07-11 By: gcarpenter

2.0 METHODS

This section describes the field survey and data analysis methods. Survey methods followed those described in the *Draft Work Plan for 2017 Grassland Bird Surveys – Proposed Downeast Wind Project* (Appendix A).

2.1 FIELD SURVEY

The 2016 and 2017 field surveys were completed by Mark DiGirolamo, whose past experience includes conducting presence/absence UPSA surveys in Maine and other states in the region in the late 1990s under the direction of Peter Vickery and Massachusetts Audubon and subsequently under Andrew Wiek and MDIFW.

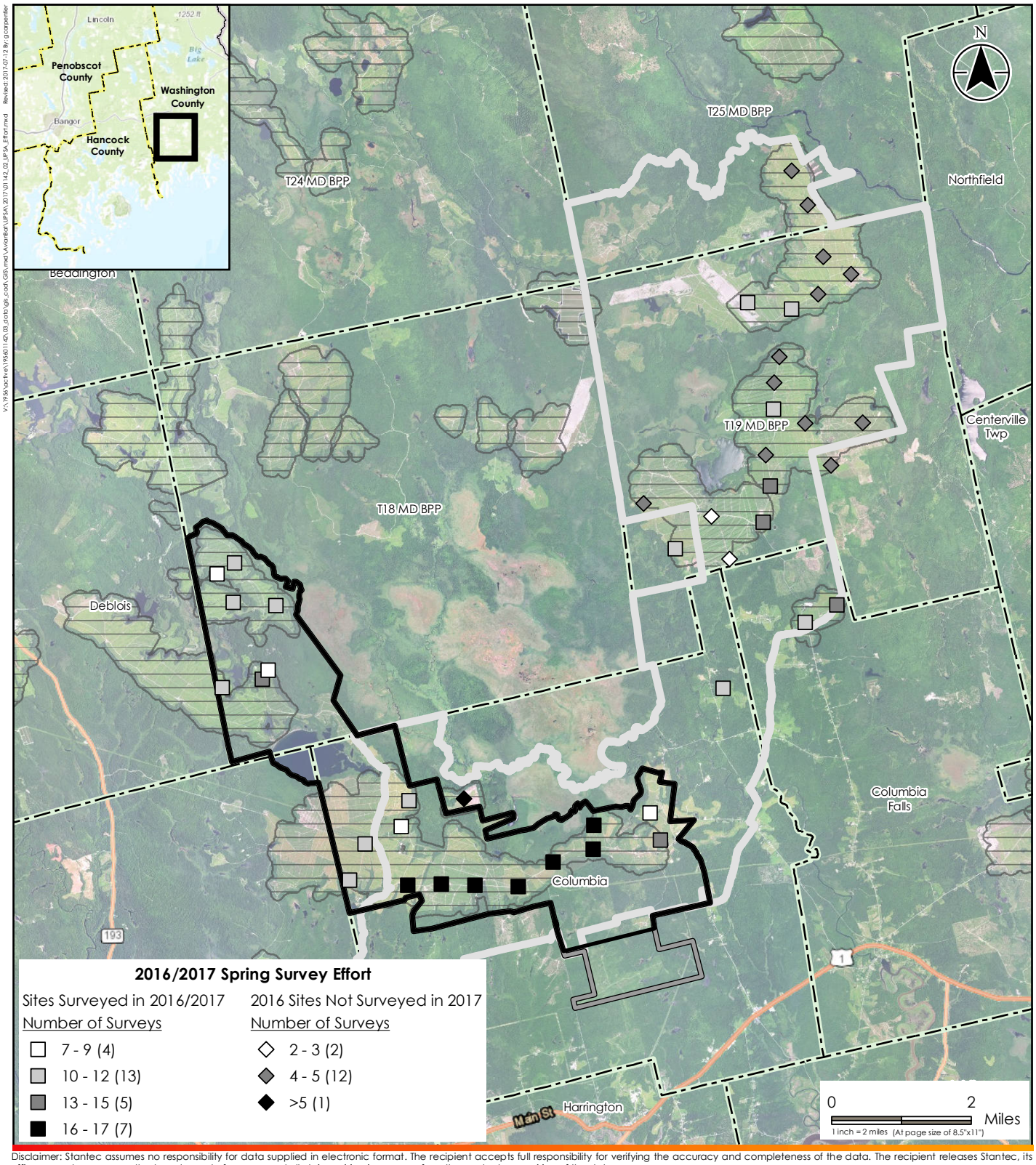
Each year of field surveys comprised 2 periods: the courtship/nesting period and the fall staging period. The courtship/nesting surveys occurred from May 9 to June 23, 2016, and from April 24 through June 16, 2017. The fall staging period occurred from July 24 through September 9, 2016, and from August 7 to October 5, 2017.

The 2017 survey consisted of point counts completed at 29 sites within and in the vicinity of the Project area including:

1. All 2016 sites (n = 16) within or directly adjacent to the current Project boundary (Figure 2-1; see Stantec 2017 for 2016 site locations).
2. An additional 4 sites centered at the bases of 4 meteorological (met) towers installed in 2016.
3. Nine sites located outside of the Project that were surveyed in 2016. Sites were selected to provide representation of all offsite grassland patches.

A full description of the 2016 field survey effort is provided in Stantec 2017 and the combined 2016-2017 effort is summarized in Figure 2-1 and Table 2-1.

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30 Park Drive
Topsham, ME USA 04086

Legend

- Upland Sandpiper Habitat (MDIFW)
- Project Area (5/23/2017)
- Project Area (9/28/2016)
- Project Area (11/23/2015)

Project

Downeast Wind Project
Washington County, Maine

Figure No.

2-1

Title

Grassland Bird Survey Locations and Spring Survey Effort, 2016 and 2017

Prepared by GAC on 2017-07-11
Review by SBG on 2017-07-11

01142_02_UPSA_Effort.mxd

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Table 2-1. Survey effort per site by season at DOW, Maine, 2016 – 2017. Shading indicates sites surveyed in 2016 only.

Site	In/Out of Project Area	# Visits 2016	# Visits 2017	Total # Surveys
2017-1	In	0	9	9
2017-7	In	0	9	9
2017-10	In	0	9	9
2017-19	In	0	7	7
2016-2, 2017-12	In	8	9	17
2016-3, 2017-13	In	8	8	16
2016-4, 2017-14	In	8	8	16
2016-5, 2017-15	In	8	8	16
2016-6, 2017-16	In	8	8	16
2016-7, 2017-17	In	8	8	16
2016-8, 2017-18	In	8	8	16
2016-9, 2017-20	In	8	7	15
2016-10, 2017-23	Out	6	7	13
2016-11, 2017-25	Out	8	7	15
2016-12, 2017-26	Out	8	7	15
2016-16, 2017-27	Out	5	7	12
2016-19, 2017-29	Out	5	7	12
2016-20, 2017-28	Out	5	7	12
2016-10n, 2017-24	Out	4	7	11
2016-15n, 2017-2	In	3	9	12
2016-16n, 2017-3	In	3	9	12
2016-17n, 2017-11	In	3	9	12
2016-18n, 2017-9	In	3	9	12
2016-20n, 2017-4	In	3	9	12
2016-21n, 2017-8	In	3	9	12
2016-22n, 2017-6	In	4	9	13
2016-23n, 2017-22	Out	3	7	10
2016-24n, 2017-21	Out	3	7	10
2016-25n, 2017-5	In	3	9	12
2016-1	Out	8	0	8
2016-13	Out	4	0	4
2016-14	Out	5	0	5
2016-15	Out	5	0	5
2016-17	Out	5	0	5
2016-18	Out	5	0	5
2016-21	Out	4	0	4
2016-22	Out	4	0	4

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Site	In/Out of Project Area	# Visits 2016	# Visits 2017	Total # Surveys
2016-23	Out	4	0	4
2016-24	Out	4	0	4
2016-25	Out	4	0	4
2016-27	Out	2	0	2
2016-13n	Out	4	0	4
2016-14n	Out	4	0	4
2016-19n	Out	3	0	3
		201	**233**	**434**

Each point count site was centered on a circular plot with a 250-m radius. Sites were visited in both morning and evening. Morning point counts occurred 0.5 hour before sunrise until 10:00 AM. Evening point counts occurred 1 hour before sunset until 1 hour after sunset. In 2017 during the courtship period, each site was visited 3 times in the morning and up to 3 times in the evening; during the nesting period, each site was visited 2 times in the morning and 1 time in the evening; and during the fall staging period, each site was visited 3 times in the morning and 1 time in the evening. Similar schedules were followed in 2016, although Project modifications required the addition of several new survey points mid-season that were consequently not sampled during courtship (Stantec 2017). Sites were visited systematically within morning or evening survey rounds based on geographic proximity; however, each survey round was initiated at a different site than the previous round, resulting in broad temporal coverage of all sites. Point counts occurred in all weather conditions except in heavy rain or high winds where visual or auditory detections would be impaired. Weather variables were recorded by the observer from ground level immediately prior to the start of each point count.

Passive visual counts were completed for 10 minutes, scanning 360° with binoculars and/or a spotting scope to search and listen for target species. The observer scanned fence posts, sign posts, utility wires, and any other potential perches and over fields. In 2017, the passive count was followed by a 5-minute active count, during which the observer broadcasted an UPSA call for 1 minute to attempt to elicit and detect territorial or response calls over the subsequent 4 minutes of the count. In 2016, the 5-minute active count was completed only if UPSA were not detected during the passive count.

The locations of target species were recorded on maps depicting site plots for reference. Data were recorded on Stantec datasheets. Other, non-target bird species detected during point counts were recorded as incidental observations.

Habitat and vegetation data were collected in June when most vegetation expected to be present would be mature. At each site, a 1-m × 1-m quadrat was established 100-m in each cardinal direction from the site center, resulting in 4 total quadrats per site. If a quadrat occurred on or within 25 m of a road, the plot was moved 50 m into the grassland/blueberry field area perpendicularly from the road.

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2.2 STATISTICAL ANALYSIS

2.2.1 Courtship Flight Models

Generalized linear binomial models ("logistic regressions") were fit in R (R Development Core Team 2016) to explore relationships between probability of courtship flight occurrence and weather variables. A set of 8 competing models were fit, including a null model; models parameterized with variables representing temporal effects (hour and Julian day) and weather effects (ambient temperature, wind speed, wind direction, and cloud cover); and a global model containing all variables. Selection and inference were made from the most informative model(s) by ranking model Log likelihoods, Akaike's Information Criteria with second-order bias correction for small sample sizes (AICc), and proportional weights (*w*; Burnham and Anderson 2002, Anderson 2008). Coefficient/parameter (β) and abundance (*N*) estimates were reported with 95% confidence intervals (CI) or 85% unconditional confidence intervals (UCI) as appropriate. Covariates were considered to have positive or negative relationships with *N* if CI or UCI for β did not overlap zero (Bolker 2008, Arnold 2010).

2.2.2 Abundance Models

Hierarchical models of abundance were fit to data representing site-specific detection histories of UPSA. That is, the repeated counts per site over time represent temporally replicated sampling events that allow for estimation of detection probability and detection-adjusted abundance (Mackenzie et al. 2002, Royle 2004, Royle and Dorazio 2008). The primary assumption for the hierarchical model of abundance is that the population is closed during the sampling period, i.e., births, deaths, immigration, and emigration were infrequent enough to have negligible or no influence on the accuracy and precision of our estimates of abundance and covariate parameters.

Prior to selecting model parameters, multi-collinearity among vegetation variables was assessed because relatively high levels of correlation among covariates in models can inflate variance, reduce statistical power, and bias parameter estimates (Graham 2003, Freckleton 2011). A correlation matrix was used to calculate Pearson correlation coefficients (*r*) for each pair of numeric vectors representing the vegetation covariates included in the abundance models. Covariates were not excluded solely on exceeding an arbitrary value of r. Instead, covariate exclusion was based on quantitative evidence (i.e., r) and qualitative biological evidence (i.e., our understanding of the correlative or causative relationships of vegetation structure in the field) (Graham 2003). Typically, one covariate of an associated pair was retained for analysis.

Hierarchical models were fit to estimate detection probability, abundance, and relationships between abundance and covariates using the "unmarked" package (Fiske and Chandler 2011) for R (R Development Core Team 2016). First a set of 12 competing models parameterized with variables that we hypothesized could influence detection probability were fit, while abundance was parameterized with only the *y*-intercept. The model set included 1) a null model (i.e., only the *y*-intercept for detection); 2) models containing single covariates representing time-of-day,

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Julian day, wind speed, and ambient temperature; 3) 6 models containing all combinations of 2 additive covariates; and 4) a global model containing all 4 additive covariates.

Next, the influential detection variables were included in multiple sets of hierarchical abundance models to determine factors associated with UPSA abundance, including:

1. Models comparing mean abundance among sampling years (2016 vs. 2017).
2. Models comparing mean abundance among sites on and off the project area (onsite vs. offsite).
3. Models comparing mean abundance among sites with presence/absence of met towers.
4. Models parameterized with vegetation structure covariates; covariates included horizontal cover of bare ground and horizontal cover and mean height of grass, shrubs (including lowbush blueberry [Vaccinium angustifolium]), and herbaceous plants.
5. Models parameterized with landscape composition (mean area per land class) covariates. 2015 National Agriculture Imagery Program (NAIP) digital orthophotos and 2010 Microsoft Digital Globe aerial photos available through ESRI's World Imagery web mapping service were used in ArcGIS 10.4.1 to calculate mean area per land class within the 250-m radius plots. Landscape-based abundance models were parameterized with variables representing mean area for the 3 most dominant land classes, including shrub/scrub, representing primarily the blueberry crops used by UPSA as nesting habitat, and mixed forest (merged with forested windrows) and developed areas (e.g., roads and structures), representing landscape features fragmenting nesting habitat. Field size (hectares [ha]), distance to nearest forest edge, and distance to nearest hedgerow were added as additional parameters. Field size was coarsely determined based on the criteria that only "main" roads (i.e., Schoodic Pond Road, Schoodic Road, Baseline Road, Montegail Road) were considered field boundaries, in addition to forests or ponds. These criteria are consistent with findings that most species grassland birds do not appear to avoid or alter their behavior proximal to low-traffic roads (Lituma and Buehler 2016; Sliwinski and Koper 2012).Values were standardized by centering (subtracting variable means) and scaling (dividing by standard deviation) to enable comparison of model coefficients for variables with different units (e.g., field area measured in ha versus distances measured in m) and optimize convergence on maximum likelihood estimates prior to model fitting.
6. Models parameterized with the quadratic forms of vegetation covariates.

The most informative models were selected by ranking model Log likelihoods, AICc, and *w*, and β and *N* estimates were model-averaged with the AICcmodavg package (Mazerolle 2017) for R (R Core Development Team 2016) to make multi-model inferences when model-selection uncertainty was high (i.e., when *w* for the top-ranked model was < 0.90) (Burnham and Anderson 2002, Anderson 2008). β and *N* were reported with 95% CI or 85% UCI for model-averaged estimates (Burnham and Anderson 2002, Arnold 2010). Covariates were considered to have positive or negative relationships with *N* if CI or UCI for β did not overlap zero (Bolker 2008, Arnold 2010).

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3.0 RESULTS

3.1 UPLAND SANDPIPER COURTSHIP FLIGHTS

Surveys for UPSA occurred at a total of 69 sites between May 9 and June 23, 2016, and April 24 and June 16, 2017 (mean = 6.3, SE = 0.3, surveys/site; range = 2 – 9), including 36 sites inside and 33 sites outside of the Project area (Figure 2-1). In 2016, 5 courtship flights were observed, and in 2017, 11 courtship flights were observed, for a total of 16 flights out of 436 sampling events (4% occurrence; Table 3-1). Models were fit to the pooled 2016 and 2017 flight occurrence (1/0 binary) data, with flight duration, maximum flight height, flight duration at heights > 130 m, and weather variables including ambient temperature, wind speed, and percent cloud cover as predictor variables. Models indicated cloud cover was the most influential variable, such that probability of flight occurrence increased with decreasing cloud cover (β_{cloud} = - 0.92, 95% CI = - 1.54 – - 0.30, p = 0.004; Table 3-2, Figure 3-1.). The second most probable model, parameterized with hour, indicated a declining likelihood of observing courtship flights as the hour of the day increased (β_{hour} = - 0.77, 95% CI = - 1.49 – - 0.06, p = 0.035; Table 3-2, Figure 3-2).

Table 3-1. Upland sandpiper courtship flights observed per survey; courtship flight duration (total seconds), maximum height (m), and duration (seconds) at greater than 130 m height; and ambient temperature (°C), wind speed level (0=<2 kilometers per hour [kph]); 1=2–5 kph; 2=6–12 kph; 3=13–19 kph; 4=20–29 kph), and cloud cover (%) associated with courtship flights at DOW, Maine, 2016 – 2017.

	2016 (n=5)			2017 (n=11)			Total		
	Mean	SE	Range	Mean	SE	Range	Mean	SE	Range
Flights/survey	0.025	0.011	0 - 1	0.047	0.014	0 - 5	0.037	0.009	0 - 5
Duration	174	128	11 - 684	236	217	20 – 1,680	217	190	11 – 1,680
Max height	114	30	25 - 200	141	62	25 - 500	133	53	25 - 500
Duration > 130 m	109	97	0 - 495	177	199	0 – 1,500	156	171	0 – 1,500
Temperature	12	2	6 - 19	8	2	4 - 14	10	2	4 - 19
Wind speed	2	0	2 - 2	2	0	2 - 4	2	0	2 - 4
Cloud cover	30	18	0 - 100	28	15	0 - 100	29	15	0 - 100

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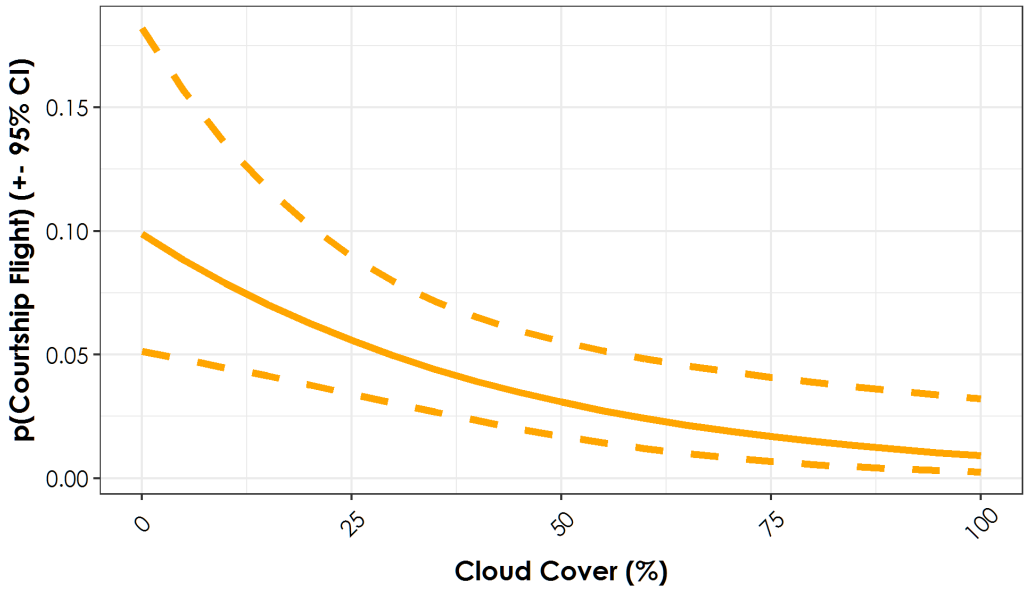


Figure 3-1. Probability of courtship flight occurrence (± 95% confidence intervals) versus percent cloud cover for upland sandpipers at DOW, Maine, 2016 – 2017.

Table 3-2. Temporal and weather variables, parameters (K), Akaike's Information Criterion (AICc), proportional weight (w), and log likelihood (LL) for generalized linear (binomial) models of courtship flight occurrence probability for upland sandpipers at DOW, Maine, 2016 – 2017.

	K	AICc	ΔAICc	*w*	LL
Cloud cover	2	130.6	0.0	0.82	-63.3
Hour	2	135.1	4.5	0.09	-65.5
Global	9	136.1	5.5	0.05	-58.8
Temperature	2	138.9	8.3	0.01	-67.4
Null	1	139.2	8.6	0.01	-68.6
Wind speed	2	141.0	10.4	0.00	-68.5
Day	2	141.0	10.4	0.00	-68.5
Wind direction	4	141.8	11.3	0.00	-66.9

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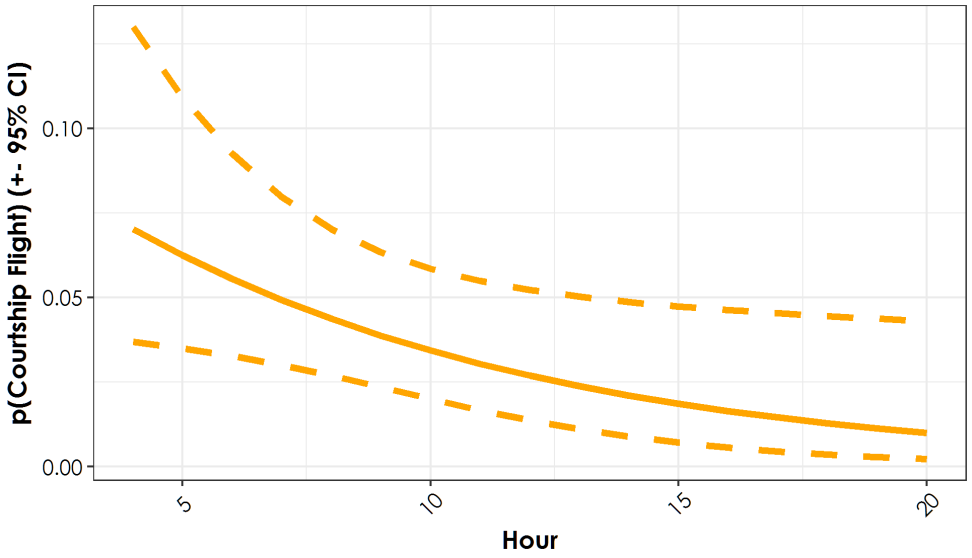


Figure 3-2. Probability of courtship flight occurrence (± 95% confidence intervals) versus hour, DOW, Maine, 2016 – 2017.

Courtship was observed inside the Project area at Sites 11, 12, 15, and 19 and outside the Project area at 7 sites. Of the 9 courtship displays documented in 2017 that had accompanying perch data, 2 (18%) occurred from perches, 5 (45%) occurred < 100 m from perches, and 2 occurred > 100 m from perches. Similarly, in 2016, 60% of courtship instances (n = 3) occurred less than 50 m from the nearest perch. Of the 11 courtship displays observed during surveys in 2017, 2 (18%) occurred 50–100 m from the nearest forest edge, and 9 (82%) occurred over 100 m from the nearest forest edge. In 2016, 1 courtship display occurred 50-100 m from the nearest forest edge, and 4 displays occurred greater than 100 m from forest edge. These data suggest that UPSA are displaying in interior portions of fields with perch sites and not near forest edges (Appendix B Table 1, Table 2).

Of the 4 courtship displays observed in the Project area in 2017, 1 reached rotor-swept height, estimated as approximately 130 m to 180 m above ground level for approximately 180 seconds. In 2016, of the 2 courtship displays in the Project area, 1 reached rotor-swept height for approximately 50 seconds.

3.2 UPLAND SANDPIPER DETECTIONS

UPSA were detected in blueberry barrens contained within MDIFW-mapped suitable habitat polygons (MDIFW 2017). UPSA were observed exhibiting the following behaviors in addition to courtship: territorial displays, perching, and feeding. On some occasions UPSA were detected auditorily but were not seen. UPSA were detected at 43 of 69 sites (62% occurrence); 17 of 36 (47%) sites were inside and 26 of 33 (79%) sites were outside of the Project area. UPSA were

detected 155 times (mean detections/survey/site = 0.4; mean maximum detections/site = 1.4; mean total detections/site = 2.2), including 44 detections inside the Project area (mean detections/survey/site = 0.2; mean maximum detections/site = 0.8; mean total detections/site = 1.2) and 111 detections outside the Project area (mean detections/survey/site = 0.6; mean maximum detections/site = 2.1; mean total detections/site = 3.4).

3.3 UPLAND SANDPIPER DETECTION PROBABILITY AND OVERALL ABUNDANCE

The hierarchical model with time-of-day ("time") and wind speed as detection covariates had the greatest proportional model weight (Table 3-3); however, the 5 top-ranked models all included time and accounted for nearly 100% of the model weight, while CI for all other covariate β overlapped zero, indicating "pretender variables" (Arnold 2010). Therefore, time was included as the only detection variable in all subsequent hierarchical models of abundance. Probability of detection decreased with increasing time-of-day (β_{time} = - 0.51; 95% CI = -0.72 – -0.30). Estimated from the null model (time as a detection covariate but only the *y*-intercept for abundance), detection-adjusted mean abundance per site (*N*) for the overall sampling area was 4.7 (95% CI = 3.2 – 7.0).

Assuming a 1:1 sex ratio, the overall 2016-2017 estimate of breeding pairs was 81 ((4.7 birds/site*69 sites)/2 years) = 162 birds*0.5 females). Given that each site was 48.5 acres (~20 ha), the overall density estimate was 0.24 UPSA/ha/year.

Table 3-3. Probability of detection variables, parameters (*K*), Akaike's Information Criterion (AICc), proportional weight (*w*), and log likelihood (LL) for hierarchical models of detection-adjusted abundance for upland sandpipers at DOW, Maine, 2016 – 2017.

	K	AICc	ΔAICc	*w*	LL
Time + Wind	4	735.1	0.0	0.34	-363.2
Time + Temp	4	735.5	0.4	0.28	-363.4
Time	3	736.2	1.1	0.20	-364.9
Global	6	737.3	2.2	0.11	-362.0
Time + Day	4	738.4	3.3	0.07	-364.9
Day + Temp	4	758.2	23.1	0.00	-374.8
Temp	3	759.2	24.1	0.00	-376.4
Temp + Wind	4	759.2	24.1	0.00	-375.3
Wind	3	761.5	26.4	0.00	-377.6
Null	2	761.8	26.7	0.00	-378.8
Day + Wind	4	762.9	27.8	0.00	-377.1
Day	3	763.0	27.9	0.00	-378.3

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3.3.1 Effects of Year and Site Location

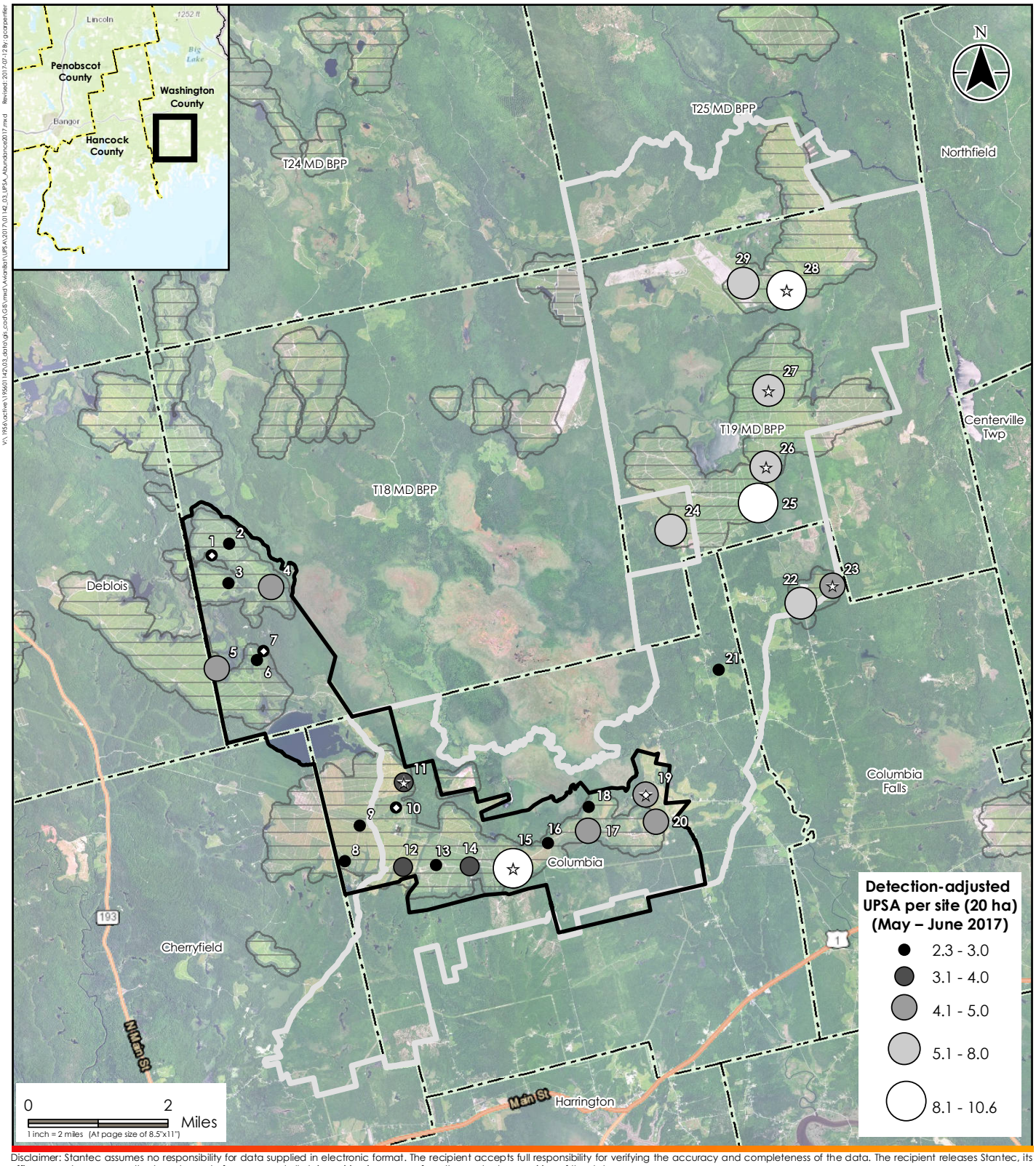
The model parameterized with "year" (2016 vs. 2017) as the sole abundance variable indicated that *N* did not vary significantly among years (N_{2016} = 5.2, 95% CI = 2.9 – 9.3; N_{2017} = 4.5, 95% CI = 2.5 – 7.9; β_{2017} = - 0.15; 95% CI = -0.51 – 0.22, p = 0.44; $AICc_{null}$ = 761.8, $AICc_{year}$ = 737.2). The model parameterized with sampling site "location" (inside vs. outside Project area) as the sole abundance variable indicated that *N* was significantly greater at outside sites (N_{out} = 13.0, 95% CI = 5.8 – 29.3; N_{in} = 3.5, 95% CI = 1.5 – 8.1; β_{in} = - 1.32; 95% CI = -1.72 – - 0.92, $p < 0.005$; $AICc_{null}$ = 761.8, $AICc_{location}$ = 690.9). The model parameterized with "year" and "location" as additive variables indicated *N* was greater at outside sites for both years ($N_{out2016}$ =11.6, 95% CI = 5.1 – 26.4; N_{in2016} = 2.9, 95% CI = 1.2 – 7.1; $N_{out2017}$ =14.5, 95% CI = 6.5 – 32.5; N_{in2017} = 3.6, 95% CI = 1.6 – 8.3;; $AICc_{null}$ = 761.8, $AICc_{year + location}$ = 691.5; Figure 3-3, Figure 3-4).

Note that the 2016 Grassland Bird Report (Stantec 2017) contains slightly different estimates of *N* for sites overall (N_{2016} = 5.7, 95% CI = 2.3 – 13.9), inside (N_{in2016} = 4.0, 95% CI = 1.2 – 12.9) and outside ($N_{out2016}$ = 8.6, 95% CI = 2.8 – 26.4) the Project area, than are reported for 2016 here. The updated estimates in this report are based on a model fit to data from both years and parameterized with a categorical predictor variable for "year" (which allows calculation of year-specific N) but only "time" for a detection covariate, whereas the 2016 model detection probability was parameterized with "time" and "Julian day" for detection. The differences between 2016 estimates is slight, however, all respective CI broadly overlap, and the updated 2016 estimates, based on the 2016 – 2017 model, have increased precision.

3.3.2 Effects of Meteorological Towers

N did not significantly vary at sites inside the Project area with and without met towers (N_{absent} = 1.7, 95% CI = 0.7 – 3.8; $N_{present}$ = 0.8, 95% CI = 0.2 – 3.6; $\beta_{present}$ = - 0.71; 95% CI = -2.20 – 0.77, p = 0.347).

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195601142

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30 Park Drive
Topsham, ME USA 04086

Prepared by GAC on 2017-07-12
Review by SBG on 2017-07-12

01142_03_UPSA_Abundance2017.mxd

Legend

- ◇ MET Tower
- ☆ Courtship Behavior Observed
- Project Area (5/23/2017)
- Project Area (11/23/2015)
- Upland Sandpiper Habitat (MDIFW)

Project

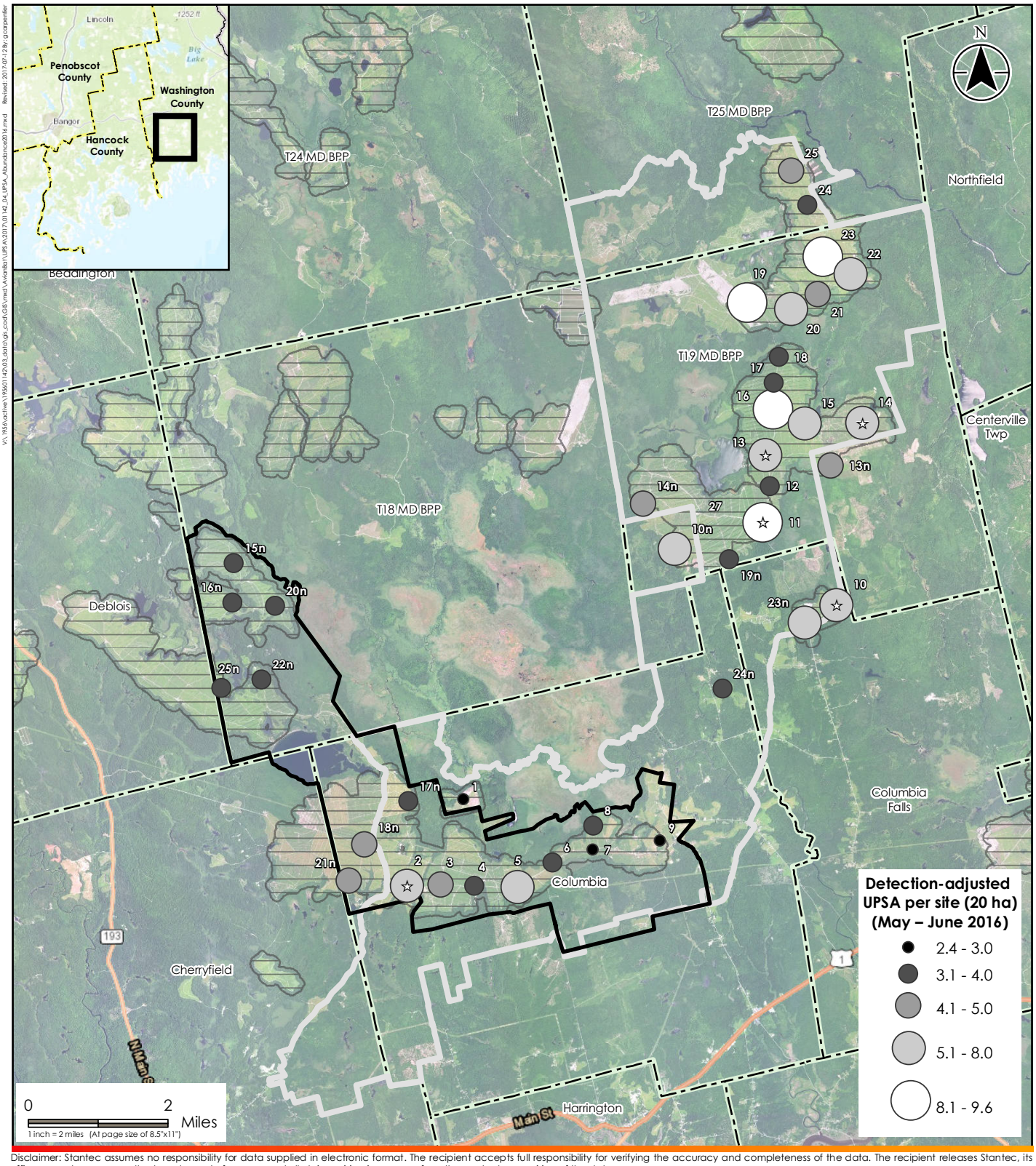
Downeast Wind Project
Washington County, Maine

Figure No.

3-3

Title

Detection-adjusted Upland Sandpiper (UPSA) Abundance, 2017



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Prepared by GAC on 2017-07-12
Review by SBG on 2017-07-12

01142_04_UPSA_Abundance2016.mxd

Legend

- ☆ Courtship Behavior Observed
- Upland Sandpiper Habitat (MDIFW)
- Project Area (11/23/2015)
- Project Area (5/23/2017)
- Upland Sandpiper Habitat (MDIFW)

Project

Downeast Wind Project
Washington County, Maine

Figure No.

3-4

Title

Detection-adjusted Upland Sandpiper (UPSA) Abundance, 2016

3.3.3 Effects of Vegetation Structure

Multi-collinearity among vegetation covariates was relatively low (e.g., $r = -0.76$ for shrub cover and herbaceous cover was the strongest correlation coefficient), so no variables were excluded. Model selection uncertainty was too high to base inference on a single model (Table 3-4) so covariate β was model averaged. Model-averaged β indicated negative effects of herbaceous cover (β = - 0.59; 85% UCI = - 0.93 – - 0.25) and positive effects of grass height (β = 0.20; 85% UCI = 0.01 – 0.40; Table 3-5) on abundance. Sample size limitations prevented model convergence on maximum likelihood estimates for models parameterized with quadratic herbaceous cover and grass height variables. Raw mean and range vegetation values for sites with and without UPSA detections are shown in Table 3-6.

Table 3-4. Vegetation variables, number of model parameters (*K; including intercept*), Akaike's Information Criterion (AICc), proportional weight (*w*), and log likelihood (LL) for hierarchical models of detection-adjusted abundance for upland sandpipers at DOW, Maine, 2016 – 2017.

	K	AICc	ΔAICc	*w*	LL
Grass height	4	378.3	0.0	0.50	-184.8
Height (grass + herb + shrub)	6	378.9	0.6	0.37	-182.8
Global	10	380.9	2.6	0.13	-178.6
Herb height	4	508.6	130.3	0.00	-250.0
Shrub height	4	517.6	139.3	0.00	-254.5
Bare ground	4	563.5	185.2	0.00	-277.4
Cover (grass + herb + shrub)	7	569.4	191.1	0.00	-276.8
Grass cover	4	571.9	193.7	0.00	-281.7
Herb cover	4	572.0	193.7	0.00	-281.7
Shrub cover	4	572.7	194.4	0.00	-282.0
Null	3	736.2	357.9	0.00	-364.9

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Table 3-5. Model-averaged parameter estimates (β), unconditional standard errors (USE), unconditional lower and upper 85% confidence limits (ULCL and UUCL), and direction of vegetation covariate effects on detection-adjusted abundance of upland sandpipers at DOW, Maine, 2016 – 2017.

	β	USE	85% ULCL	85% UUCL	Effect
Bare ground	0.05	0.15	-0.16	0.26	uncertain
Grass cover	0.08	0.13	-0.10	0.27	uncertain
Herbaceous cover	-0.59	0.24	-0.93	-0.25	-
Shrub cover	-0.15	0.24	-0.49	0.20	Uncertain
Grass height	0.20	0.13	0.01	0.40	+
Herb height	0.07	0.21	-0.23	0.37	Uncertain
Shrub height	0.04	0.15	-0.17	0.26	Uncertain

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Table 3-6. Raw mean and range vegetation values for sites with and without UPSA detections at DOW, Maine, 2016 – 2017.

Detections	Avg Bare (%)	Avg Grass (%)	Avg Herb (%)	Avg Shrub (%)	Avg Grass Ht (cm)	Avg Herb Ht (cm)	Avg Shrub Ht (cm)
y	23.5 (0–72.5)	3.2 (0–32.5)	8.3 (0–35.0)	69.8 (0–95.0)	16.5 (0–41.0)	16.6 (0–49.0)	18.4 (10.5–25.5)
n	21.1 (0–60.0)	3.6 (0–37.5)	7.7 (0–33.8)	64.7 (0–100)	10.7 (0–32.0)	18.3 (0–48.8)	18.7 (9.0–45.3)

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3.3.4 Effects of Landscape Composition

Sites in this study were located in shrub habitat largely comprising cultivated lowbush blueberry fields ranging from 35 ha to over 700 ha, with interspersed hedgerows planted as windbreaks. No UPSA were documented in fields < ~90 acres (35 ha) at both on and offsite locations, which included Sites 2016-1, 2017-6, 2017-7, and 2017-21. Multi-collinearity among mean areas for land class covariates available for 2017 results was relatively low (e.g., r =0.53 for distance to hedge and forest area was the strongest correlation coefficient), so no variables were excluded. Model selection uncertainty was too high to base inference on a single model (Table 3-7), so we model averaged covariate β. Model-averaged β indicated a positive effect of field size ($\beta_{field.size}$ = 0.31; 85% UCI = 0.10 – 0.52; Table 3-8) on abundance. Location was also identified as a significant effect, with abundance lower at points within the Project boundary than at those outside of the Project boundary (β_{in} = - 1.26; 85% CI = -1.92 – - 0.60; Table 3-8). Otherwise, confidence intervals surrounding model-averaged β ranged from negative to positive, indicating uncertain effects of variables. Raw mean and range landscape composition values for sites with and without UPSA detections are show in Table 3-9.

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Table 3-7. Land class mean area variables, number of model parameters (*K; including intercept*), Akaike's Information Criterion (AICc), proportional weight (*w*), and log likelihood (LL) for hierarchical models of detection-adjusted abundance for upland sandpipers at DOW, Maine, 2017.

	K	AICc	ΔAICc	*w*	LL
Field Size	5	329.9	0.0	0.40	-158.7
Dist. to Hedge	5	331.8	1.9	0.15	-159.6
Field Size + Dist. to Hedge	6	332.6	2.7	0.10	-158.4
Field Size + Shrub	6	332.6	2.7	0.10	-158.4
Field Size + Forest	6	332.7	2.8	0.10	-158.4
Forest	5	338.1	3.9	0.06	-160.6
Dist. to Edge	5	335.4	5.5	0.03	-161.4
Developed	5	336.2	6.3	0.02	-161.8
Shrub	5	336.2	6.3	0.02	-161.8
Developed + Forest	6	336.9	7.0	0.01	-160.5
Forest + Shrub	6	337.0	7.0	0.01	-160.6
Developed + Shrub	6	339.3	9.4	0.00	-161.8
Global	10	348.1	18.1	0.00	-157.9
Null	3	373.2	43.3	0.00	-183.1

Table 3-8. Model-averaged parameter estimates (β), unconditional standard errors (USE), unconditional lower and upper 85% confidence limits (ULCL and UUCL), and direction of land class mean area effects on detection-adjusted abundance of upland sandpipers at DOW, Maine, 2017.

	β	USE	85% ULCL	85% UUCL	Effect
Developed	0.006	0.100	-0.137	0.150	Uncertain
Forest	-0.155	0.162	-0.388	0.078	Uncertain
Shrub	0.094	0.166	-0.145	0.333	Uncertain
Field Size	0.313	0.145	0.104	0.522	+
Dist. to Edge	0.101	0.101	-0.045	0.246	Uncertain
Dist. to Hedge	-0.206	0.161	-0.439	0.026	Uncertain
Location (onsite)	-1.258	0.457	-1.916	-0.600	-

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Table 3-9. Raw mean and range landscape composition values for sites with and without UPSA detections at DOW, Maine, 2017.

Detections	Developed (%)	Forest (%)	Grass (%)	Shrub (%)
y	0.08 (0.02–0.45)	0.12 (0–0.29)	0 (0–0.02)	0.80 (0.55–0.95)
n	0.03 (0.01–0.06)	0.26 (0–0.63)	0 (0–0.01)	0.69 (0.29–0.96)

3.4 FALL STAGING SURVEYS

UPSA staging behavior was not observed in 2016 or 2017. In 2016 during staging surveys between July 24 and September 9, UPSA were detected 8 times in the Project area at Sites 2016-4 (2017-14), 2016-5 (2017-15), 2016-6 (2017-16), 2016-7 (2017-17), and 2016-8 (2017-18). In 2017 during staging surveys between August 7 and October 5, UPSA were detected 5 times in the Project area at Sites 15 and 16 and 4 times outside the Project area at Sites 24, 25, and 27. UPSAs were observed feeding, as flyovers, and in one instance on August 10, 2017, outside the Project area at Site 25 exhibiting a territorial display. This display lasted for 4 total minutes and the duration of the flight at heights > 130 m was 3 minutes. The maximum flight height during this display was 250 m.

3.5 OTHER TARGET SPECIES

Three of the other target species, northern harrier, eastern whip-poor-will, and vesper sparrow, were detected inside the Project area and 3 species, northern harrier, vesper sparrow, and whimbrel, were detected outside the Project area (Table 3-10). Of the target species, vesper sparrow observations were most frequent and widespread (148 recorded inside and 25 outside the Project area).

No whimbrels were detected during grassland bird surveys. A group of approximately 50 whimbrels was observed on July 24, 2017, in a large, open area outside the Project area in Deblois, incidental to other on-site monitoring. Individuals were on the ground but took flight toward the northeast when the observer drove by. Sky condition on this day was overcast with 100% cloud cover, winds were light (0.4–1.3 m/s [1–3 mph]) and direction was variable, and the temperature was 20° C (68° F). Two follow up surveys to search for whimbrels in the Project area were completed on July 26 and 27, 2017. Lindsay Tutor of MDIFW accompanied Stantec's observer on July 27. These surveys consisted of driving meander surveys for 4 total hours: 2 hours before high tide and 2 hours after high tide. The observers stopped at open fields and scanned them using binoculars to search for whimbrels. No whimbrels were observed in the Project area.

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Table 3-10. Summary of grassland bird species detected (excluding upland sandpiper), at DOW, Maine, spring and fall 2017.

Species	Total No. of Obs	No. of Obs Inside	No. of Obs Outside	Site	Dates of Observation	Behavior	Flight Height Maximum (m)
Northern Harrier	8	5	3	5, 10, 11, 13, 24, 26, 27	4/30, 5/3, 5/5, 5/18, 9/9, 10/4, 10/5	flyover, feeding	< 25–50
Vesper Sparrow	173	148	25	All sites except 21, 23, 28	Multiple dates in Apr, May, Jun, Aug, Sep, Oct	flyover, feeding, perched, vocalizing	0–25
Eastern Whip-Poor-Will	2	2	0	2, 6	5/19, 9/5	vocalizing	na
Whimbrel	~50*	0	~50*	outside	7/24	perched, flyover	0–50

*Observed incidental to surveys.

In spring and fall 2016, 56 vesper sparrows, 6 eastern whip-poor-will, 3 northern harrier, and 0 whimbrel observations were recorded within the Project area (Table 3-11).

Table 3-11. Summary of grassland bird species detected (other than upland sandpiper), at DOW, Maine, spring and fall 2016.

Species	Total No. of Obs	No. of Obs Inside	No. of Obs Outside	Site	Dates of Observation	Behavior	Flight Height Range (m)
Northern Harrier	5	3	2	13, 16, 28, 2016-23, 6	5/10, 5/24, 6/8, 7/25, 8/17	hunting, flyover	< 25-100
Vesper Sparrow	104	56	48	All sites except 11, 17, 21, 27, 28 (nd for 1, 7, 10, 19)	5/9-5/11, 5/12, 5/16-5/19, 5/23-5/26, 6/7-6/9, 6/20-6/22, 7/24-7/27, 8/16	perched, vocalizing, foraging	< 25
Eastern Whip-Poor-Will	13	6	7	2016-1, 12, 13, 15, 17, 26, 2016-13, 8	5/23-5/25, 6/6, 6/19, 6/20, 7/24, 8/16	perched, vocalizing	na
Whimbrel	1	0	1	2016-21	8/18	flyover	< 25

4.0 DISCUSSION

4.1.1 Upland Sandpiper Abundance

The adjusted density estimate for the study area from the 2016-2017 study (0.24 UPSA/ha) is similar to the density estimate known for Maine in Kennebunk Plains in York County, which was

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estimated as 4–12 pairs/100 ha (0.08-0.24 UPSA/ha) (Vickery 1993 as cited in Weik 2000). It is important to note, however, that the current study did not formally estimate the number of breeding pairs using the same methods as Vickery (1993), and the Vickery (1993) estimates did not account for incomplete detection; therefore, Vickery's estimates are likely biased low. The detection-adjusted abundance estimates in the current study were more than double the unadjusted detection estimates. Unadjusted detections provided a mean estimate closer to 5 pairs/100 ha, which would place the study area at the lower end of the density spectrum identified by Vickery (1993). It is also important to note that the mobility and intermingling of courting UPSA causes difficulty for observers trying to accurately estimate numbers of breeding pairs (Weik 2000), as well as the fact that pairs likely move freely throughout feeding areas (Ailes 1976; MDIFW 2013).

Consistent with Vickery et al.'s findings (1994), in which UPSA were uncommon on sites with < 50 ha of suitable habitat, UPSA were not detected at sites in the smallest fields (i.e., those < 35 ha) UPSA abundance was higher at sites in and near the Project area within larger fields; however, determining field size was challenging due to the homogeneity of shrub habitat at the Project and the lack of data related to how UPSA use habitat and what constitutes a habitat barrier for UPSA (e.g., narrow dirt roads, hedgerows).

4.1.2 Upland Sandpiper Habitat

UPSA abundance was not different at sites with met towers compared to sites without met towers within the Project area in 2017. Model averaged coefficient/parameter estimates used in this study showed negative effects of herbaceous cover and positive effects of grass height on abundance, though these relationships were weak. On a landscape scale, models used in this study indicated negative effects of forest mean area and location, suggesting that UPSA abundance was lower at sites inside the Project area containing greater proportions of tree cover within a 250-m radius. Negative relationships between UPSA presence and the presence of trees, forest, and tall vegetation edges have been observed in UPSA home ranges and proximal to nest sites (White 1983; Miller et al. 2014). In general, treelines have been identified as having a negative influence on the distribution of many grassland birds (Walk and Warner 1999), in part because nest predation risk increases with increasing proximity to forest edge (Johnson and Temple 1990) whereas visual openness decreases near forest edges (Keyel et al. 2013).

The Project is not currently planning to eliminate or convert large portions of existing blueberry fields to disturbed or developed area; therefore, loss of habitat is expected to be minimal. Because nesting may occur within suitable habitat at the Project, Project construction within suitable breeding habitat that occurs outside the May and June breeding season would eliminate risk of impact to nests. Clearance surveys could also be completed in suitable habitat to allow construction in areas with confirmed absence.

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4.1.3 Upland Sandpiper Courtship

Though point counts were initiated on April 24, 2017, no courtship displays were observed until the morning of May 3. This indicates that the 2017 survey was initiated at the appropriate time to capture the beginning of the UPSA courtship period. In 2016, point counts were initiated on May 9, and the first courtship display was observed on May 10, suggesting that courtship may have already begun at the onset of 2016 surveys. Courtship displays appeared to end by May 24 in 2016 and by June 16 in 2017, suggesting that the end of the courtship period may vary annually. UPSA displayed in interior portions of fields (with the majority of displays > 100 m from the nearest forest edge) with perch sites.

Results of this study indicate that siting turbines away from areas where courtship occurs or adjusting operations during higher risk periods is likely to reduce risk of collision mortality. Based on the 2016-2017 study, to minimize the risk of potential collision of UPSA with operational turbines, turbines should be limited near Sites 11, 12, 15, and 19 and be sited as close to forest edges as possible, or operational curtailment should be implemented under the following conditions: May 1–Jun 20, from sunrise to 10:00 AM, on days with clear to partly cloudy skies.

5.0 CONCLUSIONS

The 2016-2017 dataset indicated the following key findings:

1. UPSA were documented during the breeding season within MDIFW-mapped suitable habitat polygons.
2. Density and abundance of UPSA during the breeding season was significantly higher in areas outside the Project area than onsite in both years.
3. UPSA abundance was higher at sites in and near the Project area within larger fields, and no UPSA were documented in fields < ~90 acres (35 ha) at onsite or offsite locations.
4. UPSA abundance was lower at sites inside the Project area containing greater proportions of tree cover within a 250-m radius.
5. The probability of courtship behavior in and near the Project decreased as the hour of the day increased, with 70% of morning courtship instances occurring between 5:30 and 7:30.
6. The probability of courtship behavior in and near the Project increased with decreasing cloud cover.
7. 98.8% of UPSA detections and 100% of UPSA courtship displays documented in and near the Project occurred >50 m from the nearest forest edge.
8. Target species, including UPSA, did not exhibit staging behavior in the Project area.

Findings from this study provide valuable information regarding upland sandpiper site use, habitat selection, and activity behavior and can have important management implications for the siting and operation of wind projects in areas where occupied upland sandpiper habitat is

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present. Informed avoidance and minimization measures such as siting turbines away from interior portions of larger fields, or curtailing operations of turbines in areas of higher risk and during periods of higher risk (seasons and times of day), will reduce risk to individuals and minimize potential impacts to the species.

6.0 LITERATURE CITED

Ailes, I.W. 1976. Ecology of the upland sandpiper in central Wisconsin. M.S. Thesis. Univ. of Wisconsin, Stevens Point. 63pp.

Anderson, D.R. 2008. Model Based Inference in the Life Sciences: a Primer on Evidence. Springer Science + Business Media, LLC.

Arnold, T.W. 2010. Uninformative parameters and model selection using Akaike's Information Criterion. Journal of Wildlife Management 74:1175–1178.

Bolker, B.M. 2008. Ecological Models and Data in R. Princeton Univ. Press.

Burnham, K.P. and D.R. Anderson. 2002. Model Selection and Multimodel Inference: A Practical Information-theoretic Approach. 2nd Edition. Springer-Verlag.

Fiske, I. and R. Chandler. 2011. unmarked: An R package for fitting hierarchical models of wildlife occurrence and abundance. Journal of Statistical Software, 43(10): 1–23.

Freckleton, R. P. 2011. Dealing with collinearity in behavioural and ecological data: model averaging and the problems of measurement error. Behavioral Ecology and Sociobiology 65: 91–101.

Graham, M H. 2003. Confronting multicollinearity in ecological multiple regression. Ecology 84(11): 2809–2815.

Johnson, R.G. and S.A. Temple. 1990. Nest predation and brood parasitism of tallgrass prairie birds. Journal of Wildlife Management 54: 106–111.

Keyel, A.C., A.M. Strong, N.G. Perlut, and J. Michael Reed. 2013. Evaluating the roles of visual openness and edge effects on nest-site selection and reproductive success in grassland birds. The Auk 1: 1–10.

Lituma, C. M. and D. A. Buehler. 2016. Minimal bias in surveys of grassland birds from roadsides. The Condor 118: 715–727.

MacKenzie, D. I., J. D. Nichols, G. B. Lachman, S. Droege, J. A. Royle, and C. A. Langtimm. 2002. Estimating site occupancy rates when detection probabilities are less than one. Ecology 83: 2248–2255.

BUSINESS CONFIDENTIAL

Mazerolle, M. J. 2017. AICcmodavg: Model selection and multimodel inference based on (Q)AIC(c). R package version 2.0-4. http://CRAN.R-project.org/package=AICcmodavg.

MDIFW (Maine Department of Inland Fisheries and Wildlife). 2013. Shorebirds. http://www.maine.gov/ifw/wildlife/species/birds/shorebirds.html. Accessed October 26, 2016.

MDIFW. 2017. *Rare, Endangered, and Threatened Species Occurrences* [computer file]. Available via http://beginningwithhabitat.org/the_maps/data_sources.html. Provided to Stantec on February 17, 2017.

Miller, V., E. Nol, L.P. Nguyen, and D.M. Turner. 2014. Habitat selection and nest success of the upland sandpiper (*Bartramia longicauda*) in Ivvavik National Park, Yukon, Canada. Canadian Field-Naturalist 128(4): 341–349.

R Development Core Team. 2016. R: A Language and Environment for Statistical Computing. Version 3.3.0. R Foundation for Statistical Computing, Vienna, Austria. http://www.R-project.org.

Royle, J.A. 2004. *N*-mixture models for estimating population size from spatially replicated counts. Biometrics 60: 108 – 105.

Royle, J.A. and R. Dorazio. 2008. Hierarchical Modeling and Inference in Ecology. Academic Press.

Sliwinski, M.S. and N. Koper. 2012. Grassland bird responses to three edge types in a fragmented mixed-grass prairie. Avian Conservation and Ecology 7(2): 6.

Stantec (Stantec Consulting Services Inc.) 2017. Grassland Bird Surveys Downeast Wind Project – May to September 2016. January 26, 2017.

Vickery, P.D., 1993. Habitat selection of grassland birds in Maine. Ph.D. thesis. University of Maine, Orono, Maine.

Vickery, P.D., M.L. Hunter, Jr., and S.M. Melvin. 1994. Effects of habitat area on the distribution of grassland birds in Maine. Conservation Biology 8(4): 1087–1097.

Walk, J.W. and R.E. Warner. 1999. Effects of habitat area on the occurrence of grassland birds in Illinois. The American Midland Naturalist 141(2): 339–344.

Weik, A.P. 2000. Upland sandpiper assessment. Maine Department of Inland Fisheries and Wildlife. Wildlife Division. Wildlife Resource Assessment Section. Bird Group. April 5, 2000.

White, R. P. 1983. Distribution and habitat preference of the upland sandpiper (*Bartramia longicauda*) in Wisconsin. American Birds 37(1): 16–22.

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APPENDICES

Appendix A DRAFT WORK PLAN FOR 2017 GRASSLAND BIRD SURVEYS – PROPOSED DOWNEAST WIND PROJECT

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Draft Work Plan for 2017 Grassland Bird Surveys – Proposed Downeast Wind Project

1 INTRODUCTION

In 2016, a three-season grassland bird survey was completed as part of an assessment of the potential risk posed to grassland birds by the proposed Downeast Wind Project (Project) in Washington County, Maine [1][1]. Species of interest include: upland sandpiper (UPSA; *Bartramia longicauda*), vesper sparrow (*Pooecetes gramineus*), eastern whip-poor-will (*Caprimulgus vociferus*), northern harrier (*Circus cyaneus*) and whimbrel (*Numenius phaeopus*). Based on results from the 2016 survey and consultation with Maine Department of Inland Fisheries & Wildlife (MDIFW) on January 19, 2017, it was determined that a second year of grassland bird surveys would be conducted, with the study design, protocol, and analysis modified to address the revised project boundary. The goal of the study is to inform siting, impact assessment and potential permitting and mitigation for the proposed project.

2 FIELD SURVEY OBJECTIVES

Objectives of the 2017 grassland bird surveys are:

1. Document and locate occurrences of sensitive grassland bird species in the Project area including UPSA, northern harrier, vesper sparrow, eastern whip-poor-will, and whimbrel;
2. Estimate UPSA arrival dates;
3. Estimate the number of displaying UPSA males and breeding UPSA using hierarchical modelling methods [3][4][5];
4. Document the timing and characteristics of flight displays (i.e., flight heights, percent within the rotor-swept zone [RSZ], and time spent in the RSZ);
5. Document locations of upland sandpiper and whimbrel staging areas for fall migration and, if present, their general behaviour during staging;
6. Model the characteristics of occupied breeding habitat through quantitative assessments of vegetation and landscape features;
7. Refine currently mapped UPSA habitat polygons based on field studies and observations;
8. Assess potential risk of impact (collision and/or displacement) to the species as a result of the Project and inform potential siting or operational considerations to avoid or minimize risk.

3 FIELD SURVEY METHODS

Field survey methods will be similar to those described for 2016 [1][2] with minor modification as summarized below.

3.1 SURVEY SCHEDULE

In 2016, grassland bird breeding surveys were initiated on 9 May and continued through 23 June. Fall surveys were conducted from 24 July – 9 September. The first UPSA detection in 2016 was

made on 9 May and the first observation of courtship behavior was on 10 May; therefore. it is difficult to estimate arrival dates and start of courtship for UPSA based on data collected thus far. In Massachusetts, UPSA arrivals to breeding territories have been documented to be as early as 21 April, with approximately 25% of nests starting incubation between 1 and 10 May, and 45% of nests starting incubation between 11 and 20 May (K. Peters, *unpublished data*). Although the Maine breeding season likely begins slightly later than in Massachusetts, it is recommended that the 2017 sampling design be expanded to capture early arrivals and potentially estimate mean arrival dates, as presented in Table 3-1.

Table 3-1. Proposed 2017 Grassland Bird Survey Schedule, Downeast Project.

Period	Dates	Time of Day	All Survey Points
Courtship	Apr 21-May 5	Morning	3
		Evening	2
Nesting	May 8-Jun 23	Morning	2
		Evening	1
Fall Staging	July 17- Oct 6	Morning	3
		Evening	1

It is proposed that all other survey protocols implemented in 2016 be continued in 2017, including point-count timing, playback schedules, and recording of behavior, but that the survey periods be standardized to a total of 15 minutes (passive surveying for 10 mins, followed by call broadcasting and surveying the subsequent 5 mins). In 2016, the additional 5 minute survey was only completed if UPSA were not detected in the prior 10 minutes. Standardizatioin in 2017 will limit potential bias among sites and visits per site resulting from increased sampling at sites where no detections occurred the first 10 minutes.

3.2 SURVEY SITES

On 7 June and 28 June 2016, Apex modified and reduced the Project boundary to consolidate the Project, reduce the Project footprint, and minimize potential impact to grassland birds. This resulted in an unbalanced 2016 data set because some sites were sampled early in the breeding season only, some sites were sampled mid-late breeding season and fall only, and some sites were sampled throughout the entire survey. The hierarchical methods used to estimate UPSA abundance are generally robust to unbalanced data; however, modeling of the 2016 breeding season data indicated that detection probability was greatest earlier in the season and decreased later in the season [1]. Surveys conducted at sites within the new Project boundaries that were added after the boundaries modifications, therefore, were less likely to result in UPSA detections when UPSA were present.

For the 2017 season, the following design is recommended and presented in Figure 1 (Total= 29 survey sites):

1. Onsite surveys –

a. Survey all 2016 sites (n=16) within or directly adjacent to the new Project boundary.
b. Add an additional 4 survey points, centered at the bases of four meteorological (Met) towers installed in 2016 (**Error! Reference source not found.**).

2. Offsite surveys-
   a. Survey a subset of sites evaluated in 2016 (n=9). Sites were systematically identified based on 2016 sampling intensity, accessibility (i.e., can be accessed within a single survey period), and to represent all offsite grassland patches surveyed in 2016.

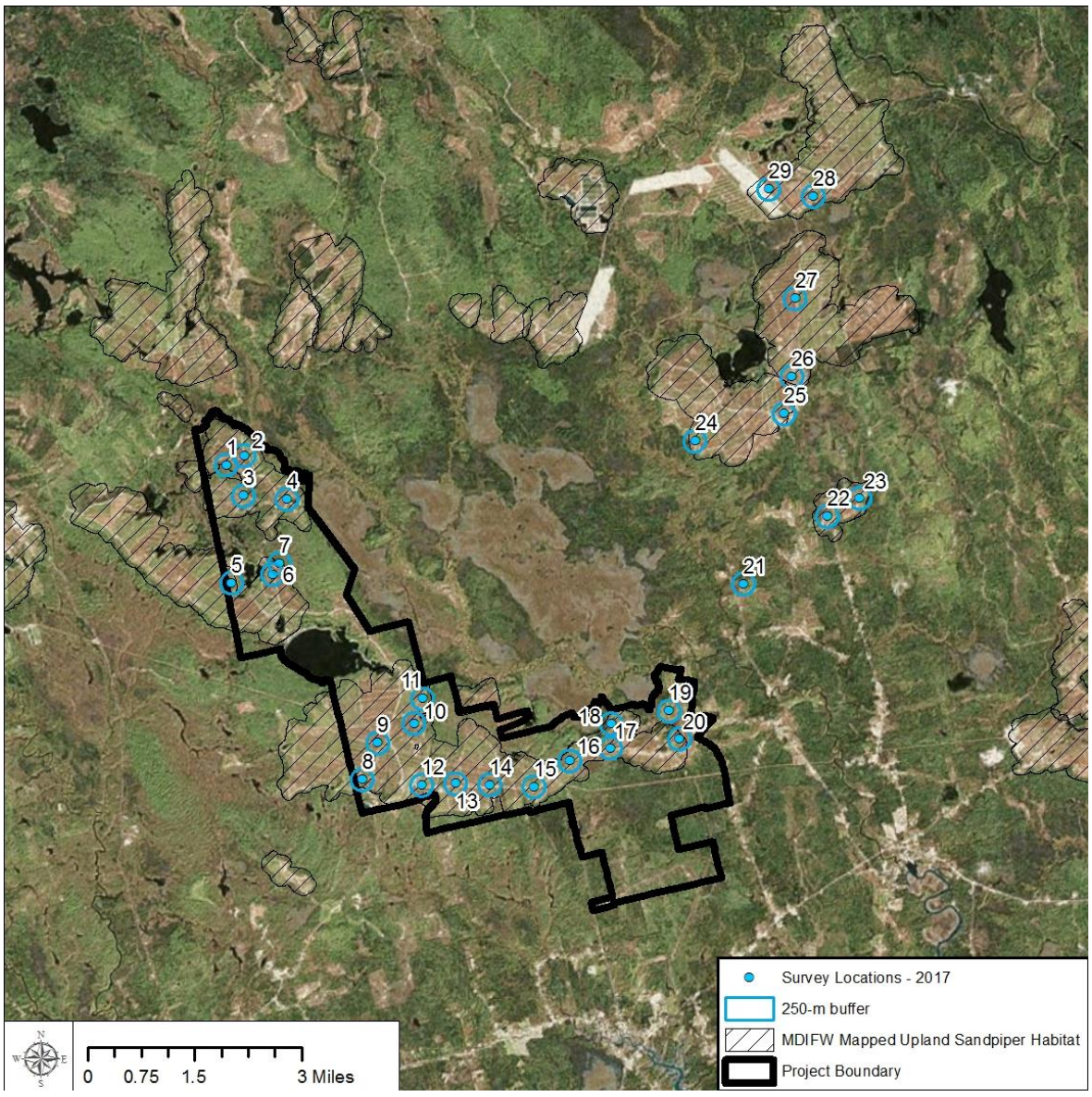


Figure 1. Proposed 2017 grassland bird survey locations.

This proposed design will provide baseline characterization of both on and offsite use by UPSA and other grassland birds, allow landscape-level analyses and may provide insight into potential UPSA avoidance behaviors around tall structures (i.e., points located at temporary met towers).

4 DATA ANALYSIS

To address the objectives listed in Section 2, the following analytical approaches will be taken:

1. Similar to 2016, hierarchical models that account for imperfect detection will be used to estimate UPSA abundance during the breeding season (i.e., courtship + nesting). Assumptions will be similar to those acknowledged in 2016 (e.g., closed population, independent observations);
2. Similar to 2016, hierarchical models that account for imperfect detection will be used to identify microhabitat structure factors associated with UPSA abundance. A "year" parameter will be added to the models, point-level characteristics (e.g., distance to edge, tree, road, etc.), and habitat associations will be presented based on AIC model-weighted parameter estimates;
3. A second set of hierarchical models incorporating landscape-scale parameters will be explored. Detection parameters in the models will be those identified in Approach 1, above. Landscape parameters will consist of a subset of characteristics identified *a priori* as potentially influencing UPSA habitat selection, and may include various patch (e.g., patch area, patch shape) and class (e.g., edge density) metrics calculated in a Geographic Information System (GIS) [8]. Independence of survey sites will be considered at each scale and survey sites pooled or treated as pseudoreplicates as appropriate [9];
4. A fourth analysis will explore the relationship between UPSA presence and temporary met towers (i.e., surrogates for tall human-made structures like wind turbines). It is acknowledged that this exploratory analysis is limited by sample size because there are only 4 met towers installed in the Project area. Contingent on the data acquired, models incorporating a binary predictor variable (i.e., 'met' vs 'non met') may be developed. Response variables may include abundance (hierarchical model based on best model identified in Approaches 1 and 2) or distance from observer (ANOVA).; and
5. Descriptive statistics (e.g., mean, variance) will be provided for all behavioral data, including time spent in RSZ, fall staging surveys, and survey results for non-UPSA target species.

5 LITERATURE CITED

[1] Stantec Consulting Services, Inc. (Stantec). 2017. Grassland Bird Surveys Downeast Wind Project – May to September 2016. Prepared for Apex Clean Energy, Inc., January 2017.

[2] Stantec Consulting Services, Inc. (Stantec). 2016. Revised Work Plan for 2016 Grassland Bird Surveys – Proposed Downeast Wind Project. Prepared for Apex Clean Energy, Inc., May 2016.

[3] Royle, J.A. 2004. N-mixture models for estimating population size from spatially replicated counts. Biometrics 60:108–115.

[4] Royle, J.A., and J.D. Nichols. 2003. Estimating abundance from repeated presence-absence data or point counts. Ecology 84:777–790.

[5] MacKenzie, D. I. 2005. What are the issues with presence-absence data for wildlife managers? Journal of Wildlife Management 69(3): 849–860

[6] Smucker, K.M., R.L. Hutto and B.M. Steele. 2005. Changes in bird abundance after wildlife: importance of fire severity and time since fire. Ecological Applications 15:1535-1549.

[7] Kuvlesky Jr., W. P., Brennan, L. A., Morrison, M. L., Boydston, K. K., Ballard, B. M., & Bryant, F. C. (2007). Wind Energy Development And Wildlife Conservation: Challenges and Opportunities. Journal of Wildlife Management, 71(8), 2487–2498. http://doi.org/10.2193/2007-248

[8] McGarigal, K., SA Cushman, and E Ene. 2012. FRAGSTATS v4: Spatial Pattern Analysis Program for Categorical and Continuous Maps. Computer software program produced by the authors at the University of Massachusetts, Amherst. Available at the following web site: http://www.umass.edu/landeco/research/fragstats/fragstats.html.

[9] Davies, G. M., & Gray, A. 2015. Don't let spurious accusations of pseudoreplication limit our ability to learn from natural experiments (and other messy kinds of ecological monitoring). Ecology and Evolution, 5(22), 5295–5304. http://doi.org/10.1002/ece3.1782

Appendix B **COURTSHIP DATA TABLES**

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Table 1. Summary of courtship behavior by upland sandpipers at DOW, Maine, 2016.

Courtship Instance	Date	Site	Inside or Outside Project Area	Time	Individuals	Flight Duration > 130 m and < 180 m (sec)	Maximum flight height (m)	Distance to Road (m)	Distance to Forest (m)	Distance to Nearest Perch (m)	Distance to Hedgerow (m)	Site Field Size (ha)
1	5/10	13	Out	6:01	1	0	120	200	> 250	150	> 250	nd
2	5/12	14	Out	18:51	2	0	> 200	< 50	> 100	< 50	> 250	nd
3	5/18	2017-23	Out	7:55	1	0	75	50-100	100-200	100-200	na	50
4	5/19	2017-12	In	8:20	2	50	> 150	< 50	100-200	< 50	< 50	75
5	5/24	2017-25	Out	19:00	1	0	25	< 50	50-100	< 50	100-200	750
6*	5/12	2017-12	In	7:21	2	NA	< 20	nd	nd	nd	nd	75

*incidental observation during drive-through reconnaissance effort between Sites 1-15

Table 2. Summary of courtship behavior by upland sandpipers at DOW, Maine, 2017.

Courtship Instance	Date	Site	Inside or Outside Project Area	Time	Temp (°C)	Wind Speed (m/s)	Wind Direction	Sky Condition	Individuals	Flight Duration > 130 m and < 180 m (sec)	Maximum flight height (m)	Distance to Road (m)	Distance to Forest (m)	Distance to Nearest Perch (m)	Distance to Nearest Hedgerow (m)	Site Field Size (ha)
1	5/3	11	In	7:00	7.2	5.8–8.0	sw	clear	1	0	50	50–100	> 250	na	na	100
2	5/4	19	In	5:50	3.9	1.8–3.6	nw	partly cloudy	1	0	100	50–100	100–200	na	na	75
3	5/5	26	Out	6:55	6.7	1.8–3.6	s	overcast	2	150	> 250	< 25	> 250	< 25	< 25	750
4	5/16	27	Out	5:35	4.4	1.8–3.6	n	partly cloudy	2	0	75	25–50	> 250	25–50	> 250	750
5	5/16	27	Out	5:35	4.4	1.8–3.6	n	partly cloudy	1	0	50	25–50	> 250	25–50	> 250	750
6	5/16	25	Out	6:35	7.2	1.8–3.6	n	partly cloudy	1	0	25	< 25	100–200	0	0	750
7	5/16	25	Out	6:35	7.2	1.8–3.6	n	partly cloudy	1	0	< 25	< 25	100–200	0	< 25	750
8	5/16	23	Out	8:45	11.7	5.8–8.0	nw	clear	1	60	200	< 25	50–100	>100	na	50
9	5/17	15	In	7:05	13.9	4.0–5.4	w	partly cloudy	1	0	100	25–50	50–100	>100	na	150
10	6/14	15	In	6:50	12.8	1.8–3.6	n	clear	1	180	150	< 25	100–200	50–100	na	150
11	6/15	28	Out	8:10	11.7	1.8–3.6	n	overcast	1	300	> 500	25–50	100–200	25–50	na	775
12*	6/15	28	Out	8:10	11.7	1.8–3.6	n	overcast	1	180	> 500	nd	nd	nd	nd	775
13*	6/16	26	Out	8:20	nd	nd	nd	nd	2	0	125	nd	nd	nd	nd	750

*incidental to survey.
nd = no data

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EXHIBIT 7-7: EAGLE USE SURVEY REPORTS

2015-2016 Bald Eagle Use and Bald Eagle Nest and Heron Rookery Surveys for the Downeast Wind Project

Washington County, Maine

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Prepared by:
Stantec Consulting Services Inc.
30 Park Drive
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November 10, 2016

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2015-2016 BALD EAGLE USE AND BALD EAGLE NEST AND HERON ROOKERY SURVEYS FOR THE DOWNEAST WIND PROJECT

November 10, 2016

Executive Summary

Stantec Consulting Services Inc. (Stantec) conducted bald eagle (*Haliaeetus leucocephalus*) surveys for the proposed 30-turbine (90-megawatt) Downeast Wind Project (DOW or Project) in Washington County, Maine. Bald eagle surveys included an aerial bald eagle nest survey in spring 2016 and bald eagle use surveys from September 2015 to September 2016. The objective of the aerial nest survey was to locate bald eagle nests and great blue heron (*Ardea herodias*) within 4 miles of the area proposed for development (Project area). The objective of bald eagle use surveys was to characterize seasonal and spatial use of the Project area by bald eagles to evaluate risk and inform siting Surveys followed methods described in the Project Work Plan developed in coordination with U.S. Fish and Wildlife Service (USFWS) and Maine Department of Inland Fisheries and Wildlife's (MDIFW) and were consistent with the USFWS April 2013 *Eagle Conservation Plan Guidance* (ECPG) and MDIFW's June 2015 *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (MDIFW Recommendations) dated June 2015.

Aerial Nest Survey

Survey flights were completed on 13 April 2016 and 19 May 2016. Bald eagle nests, great blue heron rookeries, incidental observations of bald eagles, great blue heron and osprey (*Pandion haliaetus*) were recorded if observed. Two occupied and 5 unoccupied bald eagle nests were located within the survey area. The nearest occupied nest was located 3.3 miles southeast of the Project area boundary. The nearest unoccupied nest was within the Project area. One active great blue heron rookery was documented during the second flight in southern Deblois, approximately 2.2 miles west of the Project area. Seven nests containing 5 adult great blue herons were observed at this location. One new unoccupied nest was located during the second flight: the nest was composed of sticks and in a location and of a size that suggested it was either a great blue heron or osprey nest. This nest is located just outside and west of the Project area. One osprey was observed on the transmission line south of Schoodic Lake. No other incidental bald eagle or great blue heron observations were made during either survey flight.

Bald Eagle Use Surveys

Bald eagle use point count surveys were conducted from September 2015 to September 2016. Point count surveys consisted of 1-hour visual surveys at 31 locations within and adjacent to the Project area. Each location surveyed an area of 2 km^2 (800-m radius circle). Stantec surveyed approximately once every 3 weeks and completed 18 rounds of survey totaling 310 survey hours. Nine bald eagles were recorded at points inside the Project area, for a total of 21 eagle minutes recorded in 133 hrs of survey within the Project area. During 9 of those minutes, bald eagles flew at heights 200 m or less agl. Twenty two eagle observations were recorded outside but near the Project area in a total of 177 hrs of study. A single territorial display between 2 individuals was observed in the Project area in March 2016. All other observed behaviors in the Project area

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were soaring or gliding, or perching. For all points, bald eagle use was concentrated in the winter and spring months of January through May. The rate of bald eagle occurrence was highest in the month of March at points inside and outside the Project area. No eagles were observed in the months of June, July, October, and December. These data suggest that the area proposed for development presents low risk to the species.

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) conducted bald eagle (*Haliaeetus leucocephalus*) surveys on land in and adjacent to the 30-turbine (90-megawatt) Downeast Wind Project (DOW or Project) in Washington County, Maine. Bald eagle surveys included an aerial bald eagle nest in spring 2016 and bald eagle use surveys from September 2015 to September 2016. The objective of the aerial nest survey was to locate bald eagle nests and great blue heron (*Ardea herodias*) rookeries to evaluate risk and inform siting. The objective of bald eagle use surveys was to evaluate the seasonal and spatial patterns of bald eagle activity to evaluate risk and inform siting.

Surveys were conducted to comply with the U.S. Fish and Wildlife Service's (USFWS) *Eagle Conservation Plan Guidance* (ECPG) dated April 2013 and the Maine Department of Inland Fisheries and Wildlife's (MDIFW) *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (MDIFW Recommendations) dated June 2015. Surveys followed methods described in the Project Work Plan submitted to MDIFW on 19 February 2016. The Work Plan was discussed with MDIFW at a meeting on 23 February 2016, and was revised on 17 March 2016 based on feedback from MDIFW (Appendix A). Revisions to the Work Plan were related to the aerial nest survey, and included the following: using a transect-based search approach within 4 miles of the Project; and timing the second aerial flight in early to mid-May to concurrently assess the status of the bald eagle nests identified in the first flight and to assess the status of known or new great blue heron rookeries.

2.0 2016 AERIAL BALD EAGLE NEST, GREAT BLUE HERON ROOKERY, AND LARGE RAPTOR NEST SURVEY

2.1 METHODS

Prior to the surveys, Stantec reviewed information provided by MDIFW regarding known active and historic bald eagle nest and great blue heron rookery locations in the vicinity of the Project. Following protocol previously established by the USFWS (2007)[1], Stantec notified Mark McCollough of the USFWS Maine Field Office on 4 April 2016 that flights were being conducted in the area and that Stantec was coordinating with MDIFW on the timing and methods of the flights.

Stantec conducted 2 aerial surveys in the spring of 2016. A revised Project area was provided to Stantec after surveys on 28 September 2016. Figure 1 depicts the initially proposed Project area and associated survey area, which fully encompasses the current Project area.

[1] U.S. Fish and Wildlife Service. 2007. *National Bald Eagle Management Guidelines*. U.S. Fish and Wildlife Service, Washington, DC.

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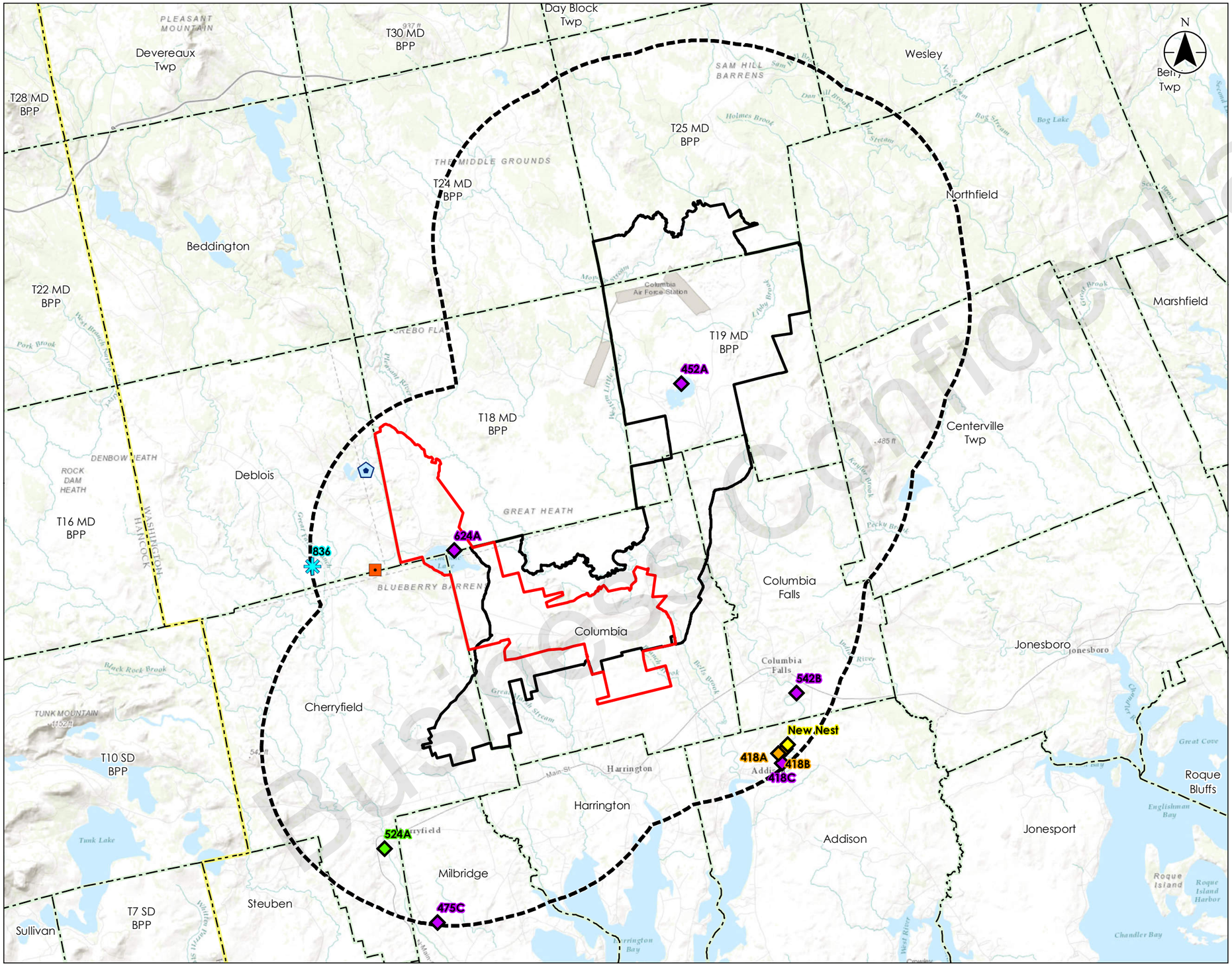
The aerial surveys were conducted in a Cessna fixed-wing aircraft piloted by Mr. Jim Strang (first flight) and Mr. Jeremy Harmon (second flight) of Penobscot Island Air. The first flight was conducted on 13 April 2016 and was focused on surveying for bald eagle nests. The timing of the first flight was chosen to correspond with the time period when bald eagles are actively incubating eggs in the nests. The purpose of the first flight was to survey the mapped bald eagle nests and to search potential nesting habitat for new bald eagle nests within 4 miles of the initial Project area (Figure 1). The survey included inland waterbodies and portions of Narraguagus River and Bay, Harrington Bay and other bays and inlets on the Atlantic Ocean. We also performed low level flights along the shoreline of rivers, lakes, the ocean, and major wetland systems to target preferred potential bald eagle nesting habitat. During this flight observers also surveyed for great blue heron nests.

The second flight conducted on 19 May 2016 focused on surveying for great blue heron rookeries, continued to survey for new bald eagle nests, and also surveyed known bald eagle nests for eggs and/or occupancy. The timing of the second flight was chosen to correspond with the time period when great blue herons are actively incubating eggs or brooding chicks in the nests. The surveys consisted of low altitude passes, approximately 300–500 feet above ground level (agl), along transects within 4 miles of the initiall Project area. The planned transect spacing was ½ mile; however during desktop field map preparation, it was apparent that viewsheds would overlap significantly, so transects were widened to approximately ¾ mile[2]. In addition to the transects, the survey investigated large wetland complexes (marshes, bogs, etc.) and the adjacent upland habitat. The survey also included investigation of mapped rookeries within 4 miles of the initial Project area.

During the 2 flights, incidental observations of bald eagles, osprey (*Pandion haliaetus*), and great blue heron were recorded if these species were observed, and large stick nests were recorded if observed.

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[2] Stantec called MDIFW to inform them of the protocol change on 1 April and 7 April 2016



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Legend

Bald Eagle Nests
- Occupied
- Occupied, Not Previously Documented
- Unoccupied
- Previously Documented, Not Located

Other Nests
- Occupied Great Blue Heron Rookery
- Osprey Nest (Unoccupied)
- Unknown Nest (Unoccupied, non-eagle)

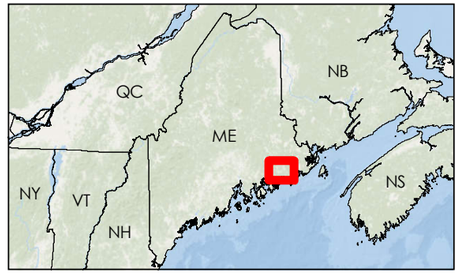
- Initial Project Area (11/23/2015)
- Current Project Area (9/28/2016)
- Aerial Survey Area (4 Miles from Initial Project Area)
- Town Boundary
- County Boundary

0 2.5 Miles

1" = 2.5 miles (At original document size of 11x17)

Notes

1. Aerial survey based on project area received on 11/23/2015. Turbine layouts received on 9/26/2016.
2. Coordinate System: NAD 1983 UTM Zone 19N
3. Town boundary data provided by the Maine Office of GIS (MEGIS).
4. Topographic basemap provided by ArcGIS online World Topographic Map(http://server.arcgisonline.com/arcgis/services/World_Topo_Map/MapServer).



Project Location
Washington County, Maine

195601142
Prepared by GAC on 2016-09-13
Quality Review by RDK on 2016-09-14
Independent Review by BPE on 2016-09-15

Client/Project
Apex Clean Energy, Inc.
Apex Downeast Wind Project
Washington County, Maine

Figure No.
1

Title
2016 Aerial Nest Survey Results

Business Confidential

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V:\195601142\active\195601142\GIS\arcgis_cad\GIS\mxd\Avian\Eagles\Eagle Flight Report\01142-01-EagleFlight2016.mxd Revised: 2016-11-08 By: gacarpenter

2.2 RESULTS

Stantec identified 7 total bald eagle nests within the survey area: 2 occupied and 5 unoccupied. As detailed in the ECPG, the occurrence of a pair of adult bald eagles at or near a nest during the normal incubation time period constitutes the nest being considered "occupied." One occupied nest was a new nest (does not have a MDIFW identification number), although this new nest was likely an alternate nest for the nests that were either not located (418A & 418B) or were unoccupied (418C). This new, occupied nest was located 3.3 miles to the southeast of the current Project area (Table 1). The other occupied nest, nest 524A, was located 5.4 miles from the current Project area. Both occupied nests had adults in the nest during the second flight. The adult bald eagle in the new nest obscured the view into the nest so we were unable to determine definitively if there were eggs or nestlings present. Two additional historic bald eagle nest sites were not located (Table 1, Figure 1).

Table 1. Results for bald eagle nests during the aerial nest survey, Downeast Wind Project, 2016.

MDIFW Nest #	Location	Flight 1 Nest Status	Flight 2 Nest Status	Distance to Current Project Area (mi)
524A	Narraguagus River-West	Not Located	Occupied	5.4
475C	Narraguagus River-East	Unoccupied	Unoccupied	6.7
418C	Pleasant River-West	Unoccupied	Unoccupied	3.4
418B	Pleasant River-West	Not Located	Not Located	3.3
418A	Pleasant River-West	Not Located	Not Located	3.2
542B	Pleasant River-East	Not Located	Unoccupied	3.1
452A	Montegail Pond	Unoccupied	Unoccupied	4.7
624A	Schoodic Lake	Unoccupied	Unoccupied	Inside Project Area
New Nest	Pleasant River-West	Occupied, 1 adult in nest	Occupied, 1 adult in nest	3.3

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Stantec surveyed known great blue heron rookery 836 in southern Deblois, which was occupied with 7 nests containing 5 adult great blue herons. This rookery is located 2.2 miles from the current Project area. One new, unoccupied nest was located during the second flight. The nest was composed of sticks and in a location and of a size that suggested it was either a great blue heron or osprey nest. This was a single nest in a wetland north of Pineo Pond and south of Dorr Meadow Brook in Deblois. This nest is located just outside and west of the current Project area (Figure 1).

During the first flight, Stantec observed an osprey nest on the transmission line south of Schoodic Lake but no adult ospreys were observed around the nest. No other incidental bald eagle, great blue heron or osprey observations were made during either survey flight.

3.0 2015-2016 BALD EAGLE USE SURVEY

3.1 METHODS

3.1.1 Bald Eagle Use Point Count Surveys

Stantec conducted point count surveys for bald eagles for 1 full year consistent with the ECPG. Point count surveys consisted of 1-hour visual surveys at a total of 31 locations[3] within and adjacent to the Project area (Figure 2), each with an 800-meter radius and covering an area of 2 km^2. Surveys were conducted once approximately every 3 weeks resulting in 18 rounds.

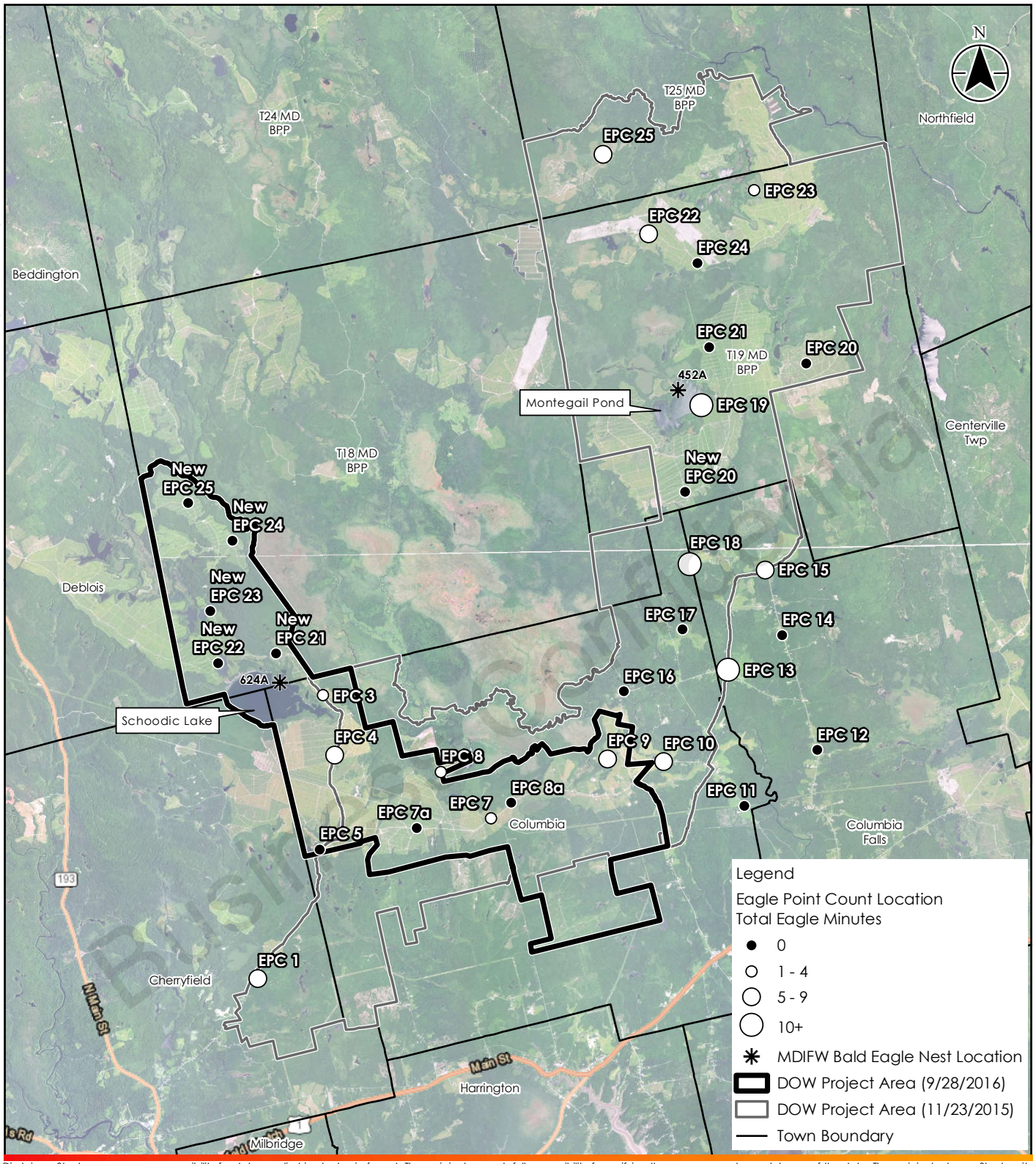
Surveys occurred in all weather conditions except when visibility was poor, and occurred within the full range of daylight hours. The starting point count location changed each survey round to enable sampling of each point during a range of daylight hours. Though bald eagles were the target species, Stantec biologists recorded all birds observed during bald eagle point count surveys. Stantec also recorded any incidental observations of bald eagles observed outside of survey hours such as while traveling between survey points or while conducting other surveys.

3.1.2 Bald Eagle Use Data Analysis

Bald eagle data were summarized by point, including behavior, total observation minutes, and exposure minutes, which are minutes that eagles spent flying within 800 meters of the point count location and at heights below 200 meters agl. Exposure minutes were expressed as a percentage of total survey minutes.

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[3] At the time surveys were initiated, per the ECP Guidance, the number of point count locations was determined by calculating the entire estimated turbine area including a 1-km buffer around proposed turbines, calculating 30% of the area, and dividing by 2 (to account for the 2 km^2 plots). Since initiating surveys, the Project area has been revised and survey points have been relocated.



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195601142

Stantec

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Phone (207) 729-1199

0 2 Miles
1 inch = 2 miles (At page size of 8.5"x11")

Client/Project
Apex Clean Energy, Inc.
Apex Downeast Wind Project
Washington County, Maine

Figure No.
2

Title
2015-2016 Eagle Use Survey Locations
10/18/2016

Prepared by GAC on 2016-09-29
Reviewed by LSB on 2016-09-30

01142_02_EPC_Location.mxd

V:\1956\active\195601142\03_data\gis_cad\GIS\mxd\VA-vanilla\Eagles\EPC\01142_02_EPC_Location.mxd Revised: 2016-10-18 by gcarpentier

3.2 RESULTS

3.2.1 Survey Effort

Stantec conducted 310 hours of survey at 31 locations between 16 September 2015 and 7 September 2016. Thirteen of the points were located within the Project area; however, survey effort varied across these points due to the revision of the Project area on 28 September 2016 resulting in some points being added and some being relocated. Of the 310 survey hours, 133 occurred in the current Project area and 177 occurred adjacent to the Project area. Skies ranged from clear to overcast. Short periods of drizzle occurred during 2 survey rounds; no other precipitation occurred during surveys (Table 2).

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Table 2. Survey effort results and weather conditions per round during bald eagle use surveys, Downeast Wind Project, 2015–2016.

Survey Round	Date	Points Surveyed (Total)	Sky Condition	Avg.Temperature (°C)	Avg. Wind Speed (m/s)	Wind Direction
2015						
1	9/16–9/17	1, 3, 4, 5, 7a, 8a, 8, 9, 10, 11, 12, 13, 14, 15	clear to partly cloudy	23	0–5	variable
2	10/5–10/6	1, 3, 4, 5, 7a, 8, 9, 10, 11, 13, 15, 16	clear to partly cloudy	13	0–3	east
3	10/26–10/27	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	clear to partly cloudy	5	0–5	variable
4	11/18–11/19	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	clear to cloudy	4	1–5	variable
5	12/10–12/11	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	overcast with a period of drizzle	8	1–3	south
2016						
6	1/6–1/7	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	partly cloudy	-8	0–1	west
7	1/25–1/26	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	clear to cloudy	-3	0–3	north and west
8	2/10–2/11	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	clear to cloudy	-2	0–3	variable
9	2/29–3/1; 3/3–3/4	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	clear to cloudy	-4	1–11	variable
10	3/22–3/25	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	foggy to clear	1	1–8	variable
11	4/13–4/16	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	clear to partly cloudy	8	1–8	northeast
12	5/2–5/5	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	foggy to partly cloudy	10	1–5	variable
13	5/23–5/24	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	partly cloudy to overcast	17	1–5	east
14	6/14–6/16	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, New 21, New 22, New 23, New 24, New 25	clear to cloudy	16	0–8	variable
15	7/6–7/7	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, New 21, New 22, New 23, New 24, New 25	partly cloudy to overcast	17	1–5	east
16	7/26–7/28	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, New 21, New 22, New 23, New 24, New 25	partly cloudy to overcast with a period of drizzle	24	0–3	variable
17	8/15–8/17	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, New 21, New 22, New 23, New 24, New 25	partly cloudy to overcast	24	0–8	variable
18	9/6–9/7	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, New 21, New 22, New 23, New 24, New 25	clear to cloudy	21	0–5	variable

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3.2.2 Results Inside the Project Area

A total of 31 bald eagle observations were recorded, 9 of which were within the Project area. Twenty-one eagle bald eagle minutes were recorded inside the Project area and 9 total bald eagle exposure minutes. Total exposure minutes ranged from 0 –4 minutes per point (Table 3). The greatest number of flying bald eagle minutes per survey hour within the Project area occurred at Point 9 (n = 0.50 flying bald eagle minutes/survey hour; 43% of total flying bald eagle minutes within the Project area. Point 9 is in the eastern portion of the Project area, and most minutes occurred when the 2 bald eagles exhibited undulating, territorial flight on 22 March. The greatest number of bald eagle exposure minutes also occurred at this Point (n = 0.22 exposure minutes/survey hour; 44% total exposure minutes in the Project area). Of the 13 Points inside the Project area, no bald eagles were observed at Points 5, 7a, 8a, New 21, New 22, New 23, New 24, and New 25.

Table 3. Survey effort and bald eagle minutes per point inside the current Project area during bald eagle use surveys, Downeast Wind Project, 2015–2016.

Point	Survey Effort (hours)	Total Bald eagle Minutes[1]	Total Exposure Minutes	Total Bald eagle Minutes/ Survey Hour	Total Exposure Minutes/ Survey Hour
3	18	2	2	0.11	0.11
4	18	5	0	0.28	0.00
5	18	0	0	0.00	0.00
7	16	2	0	0.13	0.00
8	17	3	3	0.18	0.18
9	18	9	4	0.50	0.22
7A	2	0	0	0.00	0.00
8A	1	0	0	0.00	0.00
New 21	5	0	0	0.00	0.00
New 22	5	0	0	0.00	0.00
New 23	5	0	0	0.00	0.00
New 24	5	0	0	0.00	0.00
New 25	5	0	0	0.00	0.00

[1] Minutes that an bald eagle was observed perched are not included.

Observations occurred between 7:20 AM and 4:50 PM (Table 4). Bald eagles observed were adults, except for 1 bald eagle whose age could not be classified due to its distance from the observer. Most bald eagle observations exhibited soaring or gliding behavior.

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Table 4. Location and flight data for bald eagles observed in the Project area during bald eagle use surveys, Downeast Wind Project, 2015–2016.

Date	Round	Point	Time	Age	Behavior	Total Minutes[1]	Total Exposure Minutes[2]
2015							
9/16	1	4	9:11 AM	Adult	soaring	1	0
2016							
1/6	6	8	10:41 AM	Adult	soaring	3	3
3/22	10	9	4:50 PM	Adult	undulating, territorial flight	4	2
3/22	10	9	4:50 PM	Unknown	undulating, territorial flight	3	0
4/14	11	4	7:20 AM	Adult	perched	0	0
4/15	11	9	9:30 AM	Adult	soaring	2	2
4/15	11	3	2:11 PM	Adult	soaring	2	2
5/23	13	7	2:23 PM	Adult	Soaring	2	0
8/16	17	4	11:58 AM	Adult	Soaring	4	0

[1] Minutes that an bald eagle was observed perched are not included.

[2] Flying minutes observed inside the Project area, within the point count boundary, and below 200 meters.

3.2.3 Results Adjacent and Outside the Project area

Stantec documented 22 bald eagle observations at points adjacent to the Project area (Table 5).

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Table 5. Location and flight data for bald eagles observed outside the Project area during bald eagle use surveys, Downeast Wind Project, 2015–2016.

Date	Round	Point	Time	Age	Behavior	Total Minutes[1]
2015						
9/16	1	1	10:36 AM	Adult	soaring	2
9/16	1	1	11:03 AM	Adult	soaring	2
11/19	4	13	8:10 AM	Adult	soaring	2
2016						
1/6	6	1	12:58 PM	Adult	soaring	4
1/25	7	18	7:04 AM	Adult	soaring	4
1/25	7	18	7:04 AM	Adult	NA	4
1/25	7	18	7:04 AM	Adult	NA	6
1/25	7	15	8:44 AM	Adult	soaring	4
2/11	8	18	11:18 AM	Adult	soaring, flap and glide	7
2/29	9	10	1:35 PM	Juvenile	soaring	5
3/3	9	22	7:40 AM	Adult	soaring	7
3/3	9	23	9:50 AM	Adult	flap and glide	4
3/24	10	19	7:55 AM	Adult	soaring	7
3/24	10	19	7:55 AM	Adult	soaring	6
4/14	11	13	7:53 AM	Adult	soaring	4
4/15	11	25	3:08 PM	Adult	soaring	2
5/3	12	15	10:40 AM	Adult	soaring	1
5/3	12	19	12:00 PM	Sub-Adult	soaring	2
5/24	13	25	8:10 AM	Sub-Adult	soaring	3
5/24	13	13	1:48 PM	Adult	soaring	5
6/14	14	19	12:30 PM	Adult	soaring, perched	1
9/7	18	13	1:20 PM	Adult	soaring	3

[1] Minutes that an bald eagle was observed perched are not included.

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Point 19 had the greatest bald eagle occurrence rate outside the Project area (Table 6). Point 19 is nearest to Montegail Pond, which has a historic bald eagle nest on its northern shore. Points 22 and 18 had similar occurrence rates. Point 22 was located in the far north near the abandoned radar station. Point 18 is approximately 2 miles south of Point 19. Montegail Pond, Point 18, Point 19, and Point 22 are outside the current Project area. Stantec found the Montegail Pond nest to be unoccupied during 2016 aerial nest surveys.

Mean use by bald eagles within the Project area (0.16 eagle minutes/hr of observation) was lower than observed at points outside the Project area (0.49 eagle minutes/hr of observation). Excluding point 9, overall mean use within the Project was very low (0.10 eagle minutes/hr of observation).

Table 6. Bald eagle minutes at points outside the Project area, Downeast Wind Project, 2015–2016.

Point	Survey Effort (hours)	Total Bald Eagle Minutes	Total Bald Eagle Minutes/Survey Hour
1	18	8	0.44
10	18	5	0.28
11	8	0	0.00
12	1	0	0.00
13	18	14	0.78
14	1	0	0.00
15	18	5	0.28
16	17	0	0.00
17	16	0	0.00
18	16	21	1.31
19	10	17	1.70
20	5	0	0.00
21	5	0	0.00
22	5	7	1.40
23	5	4	0.80
24	5	0	0.00
25	5	5	1.00
New 20	5	0	0.00

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3.2.4 Seasonal Eagle Use

For all points, bald eagle use was concentrated in the winter and spring months of January through May (Figure 3). The rate of bald eagle occurrence was highest in the month of March at points inside and outside the Project area. No eagles were observed in the months of June, July, October, and December.

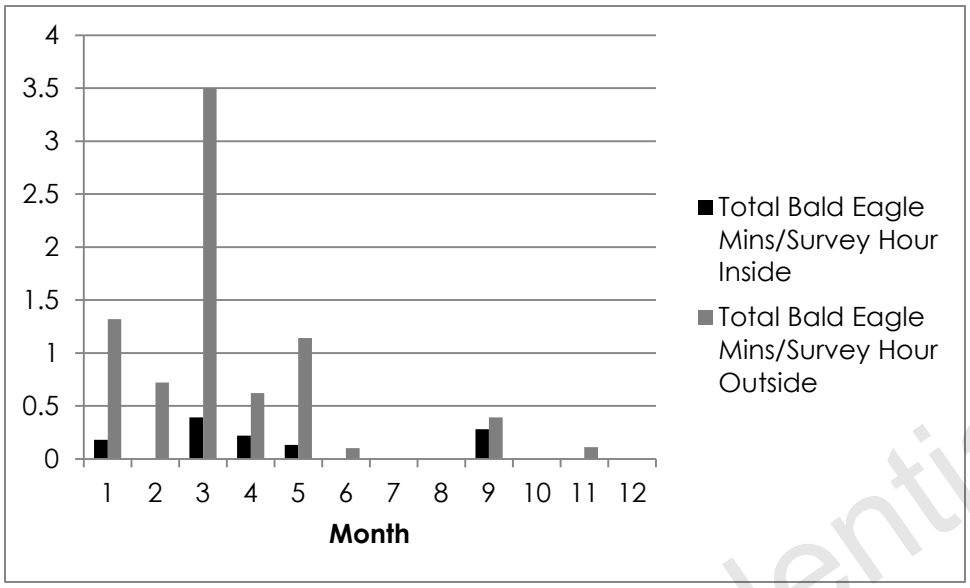


Figure 3. Bald eagle Occurrence Rates at All Survey Points by Month, Downeast Wind Project, 2015–2016.

3.2.5 Incidental Species

3.2.5.1 Non-bald eagle species

Bird species observed incidentally during bald eagle use surveys are listed in Appendix C Table 1. No federally listed species were observed, 1 state-listed threatened species: upland sandpiper (*Bartramia longicauda*) was recorded at Points 23 and 24 which are outside of the current Project area, and 5 state species of special concern were recorded, 2 outside the project area (black-and-white warbler (*Mniotilta varia*), chestnut-sided warbler (*Setophaga pensylvanica*)) and 3 within the project area (great blue heron (*Ardea herodias*), northern harrier (*Circus cyaneus*), and white-throated sparrow (*Zonotrichia albicollis*)). The single great blue heron was observed flying north between 50 and 100 m agl near Point 5 on 16 September 2015.

Stantec also observed a flock of approximately 200 shorebirds, the majority of which were semipalmated plovers (*Charadrius semipalmatus*), adjacent to Point 5 on 6 September 2016. The flock was present for the entire hour of survey, and individuals were loafing and feeding. The biologist returned to the site on 7 September and documented that the flock was no longer there. No other shorebirds (aside from upland sandpiper) were observed during bald eagle point count surveys.

4.0 DISCUSSION

One bald eagle nest, Nest 624A on the northeastern shore of Schoodic Lake, is within the Project area. The other bald eagle nests are over 3 miles from the current Project area.

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Nest 624A was found to be unoccupied during 2016 aerial nest flights. Bald eagle activity in the vicinity of this nest as assessed during bald eagle use surveys was low; in 18 survey hours, only 1 bald eagle was observed at Point Count 3, approximately 0.25 miles to the east of the lake. No bald eagles were observed at Point New 21, 0.25 miles north of the lake, and Point New 22, 0.25 miles northwest of the lake. These 2 points were surveyed 5 times.

The majority of bald eagle observations recorded outside the Project area occurred around Montegail Pond. Despite the fact that this nest was found to be unoccupied in 2016, relative to results from other survey points adjacent to the Project area, bald eagle activity was highest in the vicinity of this nest. Nonetheless, this nest is located outside the area currently proposed for development.

Mean use by bald eagles within the Project area was lower than observed at points outside the Project area. Excluding point 9, overall mean use within the Project was very low. At all points, bald eagle use was concentrated in the winter and spring months of January through May, which corresponds with the period when eagles migrate or make local movements to breeding grounds, create or repair nest sites, perform courtship displays, and lay and incubate eggs. Activity at points inside and outside the Project area peaked in March, when eagles construct nests and some individuals lay eggs. The time period of egg laying in Maine is broad, from late February to early May[4]. Eagle use of the Project area was observed to be extremely low or non-existent in months between May and December, when fledging occurs, juveniles and adults make localized movements between feeding areas, and some eagles migrate southward.

Behaviors thought to be associated with greater collision risk at wind projects include courtship displays, territorial displays, and foraging (USFWS 2013[5]). Young birds practicing flying during their first summer may be at increased risk of collision. However in 12 months of survey, only 1 territorial display occurred between 2 individuals in the Project area (in March), and no juvenile bald eagles were observed during the post-fledging period. The lack of observations in June or July may have been due to the fact that the nest on Schoodic Lake was inactive in 2016.

To date, there is no documented correlation between pre-construction bald eagle occurrence data and post-construction bald eagle mortality. In Maine, bald eagle use at wind projects has been documented during both pre- and post-construction surveys[6]. Stantec has assessed bald eagle use during project operation at 2 projects with active bald eagle nests within 2 miles of turbines (Stantec 2012a,b; Stantec 2015 b,c). At those projects, eagles continued to use the airspace in the vicinity of turbines, but did not collide with them. Despite a large and growing bald eagle population in Maine[7], no bald eagle fatalities have been recorded at operational wind projects in Maine or New England. This may in part be because bald eagles exhibit a high

[4] Todd, C. S. 2004. Bald Eagle Assessment. Maine Department of Inland Fisheries and Wildlife.
[5] U.S. Fish and Wildlife Service, April 2013. *Eagle Conservation Plan Guidance*. U.S. Fish and Wildlife Service, Washington, DC.
[6] Normandeau Associates 2010; Stantec 2008a-e, 2009a-b, 2010a-b, 2012a-b, 2014a-b, 2015a-c; Woodlot 2005, 2006, 2007a-b.
[7] Todd, C. S. 2004. Bald Eagle Assessment. Maine Department of Inland Fisheries and Wildlife.

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rate of avoidance at wind projects (Sharp et al. 2010; Stantec 2012 a,b; Stantec 2015 b,c). This, combined with the fact that no active nests occur within 4 miles of the Project, and that the majority of behaviors observed were not behaviors that are thought to be associated with greater collision risk at wind projects (courtship, territorial displays, or foraging), indicates that risk of collision and disturbance as a result of the Project likely is very low.

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5.0 LITERATURE CITED

Normandeau Associates. 2010. Year 3 Post-construction avian and bat casualty monitoring at the Stetson I Wind Farm. Prepared for First Wind, LLC.

Sharp, L., C. Herrmann, R. Friedel, K. Kosciuch and R. MacIntosh. 2010. Comparison of pre-and post-construction bald eagle use at the Pillar Mountain wind project, Kodiak, Alaska, Spring 2007 and 2010. Presentation for the National Wind Coordinating Collaborative, Wind Wildlife Research Meeting VIII, October 19-20, 2010, Lakewood, Colorado. Accessed online October 2013 at: http://www.nationalwind.org/assets/research_meetings/Research_Meeting_VIII_Sharp.pdf

Stantec Consulting Services Inc (Stantec). 2008a. Fall 2007 Bird and Bat Migration Survey Report: Visual, Radar and Acoustic Bat Surveys for the Rollins Wind Project. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2008b. Spring 2008 Bird and Bat Migration Survey Report: Visual, Radar and Acoustic Bat Surveys for the Rollins Wind Project. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2008c. Fall 2007 Migration Survey Report Visual, Acoustic, and Radar Surveys of Bird and Bat Migration conducted at the proposed Record Hill Wind Project in Roxbury, Maine. Prepared for Independence Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2008d. Spring 2008 Bird and Bat Migration Survey Report Breeding Bird, Raptor, and Acoustic Bat Surveys for the Record Hill Wind Project Roxbury, Maine. Prepared for Record Hill Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2008e. Spring, Summer, and Fall Post-Construction Bird and Bat Mortality Study at the Mars Hill Wind Farm, Maine. Unpublished report prepared for UPC Wind Management, LLC.

Stantec Consulting Services Inc (Stantec). 2009a. Post-construction Monitoring at the Mars Hill Wind Farm, Maine – Year 2. Unpublished report prepared for First Wind Management, LLC.

Stantec Consulting Services Inc (Stantec). 2009b. Summer and Fall 2009 Avian and Bat Survey Report for the Bull Hill Project in T16 MD, Maine. Prepared for Blue Sky East Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2010a. Spring 2010 Avian and Bat Survey Report for the Bull Hill Wind Project. Prepared for Blue Sky East Wind, LLC

Business Confidential

Stantec Consulting Services Inc (Stantec). 2010b. Stetson I Mountain Wind Project, Year 1 Post-Construction Monitoring Report, 2009. Prepared for First Wind Management, LLC.

Stantec Consulting Services Inc (Stantec). 2012a. Record Hill Wind Project Post-Construction Monitoring Report, 2012. Prepared for Record Hill Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2012b. Rollins Wind Project Post-Construction Monitoring Report, 2012. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2014a. Bull Hill Year 1 Post-Construction Wildlife Monitoring Report, 2013. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2014b. Stetson I Wind Project 2013 Post-Construction Wildlife Monitoring Report, Year 5. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2015a. Bull Hill Wind Project Year 2 Post-Construction Wildlife Monitoring Report, 2014. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2015b. Record Hill Wind Project Year 2 Post-Construction Wildlife Monitoring Report. Prepared for Record Hill Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2015c. Rollins Wind Project Year 2 Post-Construction Wildlife Monitoring Report, 2014. Prepared for First Wind, LLC.

Woodlot Alternatives, Inc (Woodlot). 2005. A Fall 2005 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Mars Hill Wind Project in Mars Hill, Maine. Prepared for UPC Wind Management, LLC.

Woodlot Alternatives, Inc (Woodlot). 2006. A Spring 2006 Radar, Visual, and Acoustic Survey of Bird Migration at the Mars Hill Wind Farm in Mars Hill, Maine. Prepared for Evergreen Windpower, LLC.

Woodlot Alternatives, Inc (Woodlot). 2007a. A Fall 2006 Survey of Bird and Bat Migration at the Proposed Stetson Mountain Wind Power Project in Washington County, Maine. Prepared for Evergreen Wind V, LLC.

Woodlot Alternatives, Inc (Woodlot). 2007b. A Spring 2007 Survey of Bird and Bat Migration at the Stetson Wind Project, Washington County, Maine. Prepared for Evergreen Wind V, LLC.

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APPENDIX A WORK PLAN FOR 2016 BIRD AND BAT SURVEYS – PROPOSED DOWNEAST WIND PROJECT

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Work Plan for 2016 Bird and Bat Surveys – Proposed Downeast Wind Project

Downeast Wind Project
Washington County, Maine



Prepared for:
Apex Clean Energy, Inc.

Prepared by:
Stantec Consulting Services Inc.

March 17, 2016

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1.0 INTRODUCTION

Apex Clean Energy, Inc. (Apex) is the process of developing the Downeast Wind Project (Project) in Washington County, Maine in the towns of Cherryfield, Columbia, Columbia Falls, Township T19 MD BPP, and Township T25 MD BPP (Figure 1). At this time, the Project is expected to generate up to approximately 180 megawatts of power and include up to 60 turbines, and may be built in 2 phases. Turbines are expected to have a total height of approximately 183 meters (600 ft). Project infrastructure is expected to include underground collector lines, a generator lead transmission line, new and improved roads, a collection substation, an operations and maintenance building, and 2 or 3 permanent meteorological towers.

The Project area consists of actively managed blueberry fields and hills with mixed forest habitat. The western and central portions of the Project area have little topography and contain a network of dirt roads that intersect the blueberry fields. Other habitats in these portions include hedgerows, and a few lakes and ponds. The northern and eastern portion of the Project area is more topographically variable, developed with residences, farms, fallow fields, paved roads, and mixed forest.

In fall 2015, Stantec Consulting (Stantec) initiated eagle use surveys at the Project to assess eagle activity/presence consistent with the US Fish and Wildlife Service's (USFWS) *Eagle Conservation Plan Guidance* (ECPG; 2013), and bird and bat surveys following the Maine Department of Inland Fisheries and Wildlife's (MDIFW) *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (MDIFW Recommendations; June 2015). This work plan outlines the bird and bat studies completed in 2015 and planned for completion in 2016.

- Eagle Activity Surveys (fall 2015 to fall 2016)
- Aerial Bald Eagle Nest and Great Blue Heron Rookery Survey (spring 2016)
- Nocturnal Migration Radar Surveys (fall 2015 and spring 2016)
- Diurnal Raptor Migration Surveys (fall 2015 and spring 2016)
- Breeding Bird Surveys and Upland Sandpiper Surveys (late spring/summer 2016)
- Acoustic Bat Monitoring (fall 2015, and spring/summer/fall 2016)

It is our intention to reconvene with MDIFW following completion of spring surveys to determine what studies should be conducted at the Project in fall 2016.

2.0 BIRD AND BAT SURVEYS

2.1 EAGLE ACTIVITY SURVEYS

The objective of eagle activity surveys is to provide input data for modeling to predict risk to eagles at the Project and inform siting decisions. Eagle point count surveys were initiated in mid-September 2015, and are planned to continue for at least 1 year throughout the Project area.

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Surveys consist of 1 hour point counts, with each point surveyed at approximately 3 week intervals. In fall 2015, 14 points[1] were surveyed in the southern and western portions of the Project area. In spring 2016, 6 additional points were added in the northern and eastern portions of the Project area, for a total of 20 points. An 800-meter radius plot is evaluated at each point, covering 2 square kilometers. Points are positioned to optimize the view shed of the Project area. Due to the low, flat cleared landscape throughout much of the Project area, most points in the southern and eastern portions have a nearly 360-degree view of the surrounding landscape.

Surveys will occur in all weather conditions except when visibility is poor, such as during heavy fog or rain events, and will be distributed throughout the daylight period. The order of surveys will be altered to provide representative spatial and temporal sampling throughout the Project. Surveys will end in mid-September 2016, resulting in 18 rounds of surveys.

Surveyors will also document any other raptors observed during eagle activity surveys. Data collected will include species, age, and sex, as possible, flight behavior, flight height, flight time, and weather conditions. Flight locations will be drawn on maps of the Project area.

A report summarizing the eagle use data will be provided after 1 year of data collection is complete. The analyses will evaluate seasonal and spatial use of the Project by eagles using standard metrics to inform siting decisions. The report will also include a list of other raptor observations in the project area including species, date observed, and minimum height inside the Project area. GIS shapefiles of the survey locations and eagle observations and flightpaths will be provided with the survey report.

2.2 AERIAL BALD EAGLE NEST, GREAT BLUE HERON ROOKERY, AND RAPTOR NEST SURVEYS

The objective of the aerial bald eagle nest, great blue heron rookery, and raptor nest surveys is to evaluate siting options and assess impacts to nesting eagles, great blue heron, and raptors at the Project.

In spring 2016, Stantec will conduct 1 aerial bald eagle nest and great blue heron rookery flight. The survey will occur in early to mid-May, before leaf out conditions, to document the status of existing bald eagle nests and great blue heron rookeries and to search for new nests and rookeries within 4 miles of the Project.

Prior to the survey, Stantec will review results of previous flights in the vicinity of the Project area and any information provided by MDIFW regarding known active and historic eagle nest locations near the Project. Stantec will notify USFWS before the flights are conducted in accordance with USFWS Bald Eagle Management Guidelines (USFWS 2007).

[1] The final locations of the 14 eagle point counts were determined prior to the third survey round and were based on landowner access permissions and reconnaissance survey for view shed. Some points surveyed during rounds 1 and 2 were moved or eliminated.

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The survey will use a transect based approach to identify suitable nesting/rookery habitat within 4 miles. Transects will be spaced approximately 0.25 miles apart, with 2 observers searching opposite sides of the plane. Flight paths will deviate from the transects to assess identified suitable habitat, nests, or rookeries more closely. Additionally, low altitude passes, approximately 500 to 1,000 ft above ground level will be completed around the shorelines of major rivers, lakes, ponds, and flowages. Data on new and previously identified nest and rookery locations will be documented during the flight. Incidental observations of adult bald eagles and other visible raptor nests (e.g. osprey nests) will also be recorded. Stantec will also survey the known eagle nest on Montegail Pond. If the nest is not detected during the aerial survey, it will be ground evaluated to determine if the nest is still intact and/or active.

After completion of the survey, we will summarize methods and results in a memo report which also will include data collected during the eagle activity surveys (Section 2.1). The report will include a map showing the locations of nests and rookeries identified (or those confirmed as no longer intact if applicable). GIS shapefiles of track log, survey area and nest/rookery locations will be provided with the survey report.

2.3 NOCTURNAL RADAR MIGRATION SURVEYS

The objective of the nocturnal radar migration surveys is to document patterns of nocturnal migrants at the Project. This information has been used by MDIFW to assess mortality risk. However, Stantec and others in the industry have recognized that reliance on pre-construction radar surveys as an indicator of post-construction mortality risk is challenging as they have not proven to accurately predict turbine-related bird and bat fatality patterns[2]. Evaluation of pre-construction surveys and post-construction mortality estimates at operating projects in Maine and New England has shown that there is no statistical correlation between pre-construction survey results (radar passage rates) and post-construction bird fatality estimates (Stantec unpublished data).

In order to follow MDIFW Recommendations at the Project, Stantec initiated radar surveys in early fall 2015 and will conduct radar surveys in spring 2016. Surveys utilize an X-band marine radar unit to document the abundance, timing, and flight altitudes of night-migrating species. The fall survey site was located in the west-central portion of the Project area. At this location, topography and surrounding tree height provide a nearly unobstructed view with less than 30% ground clutter, as called for in the MDIFW Recommendations. In spring 2016, Stantec will move the radar further north to an area that is central to the entire Project area as depicted in Figure 1. Stantec conducted 20 survey nights in fall 2015 between 9 September and 30 October and will conduct 20 nights at the new location in spring 2016, between 15 April and 1 June. Surveys will be conducted on nights with generally clear weather without long periods of substantial

[2] Ferrer, M., M. de Lucas, G.F.E. Janss, E. Casado, A.R. Muñoz, M.J. Bechard, and C.P. Calabuig. 2012. Weak relationship between risk assessment studies and recorded fatality at wind farms. Journal of Applied Ecology 49:38–46.

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precipitation. On nights when periodic showers are forecasted, surveys will occur between showers to collect information on migration activity during inclement weather.

Radar surveys will include up to 12 hours of data collection per night alternating every 10 minutes between vertical and horizontal mode. In horizontal mode, the antenna spins horizontally to survey the airspace around the radar and detects the number of targets and their flight direction as they pass through the Project site. By analyzing the echo trail, the flight direction and flight speed of targets can be determined. In vertical mode, the radar unit is tilted 90° to survey the airspace above the radar. In vertical mode, target echoes do not provide directional data, but do provide information on the altitude of targets passing through a vertical radar beam with a 20° angle of view. Horizontal data will be used to calculate passage rates and flight direction; vertical data will be used to calculate flight heights and percent of migrants flying below proposed turbine height.

Radar data will be post-processed using analysis software and methods developed by Stantec. Digital image data will be converted to numerical data for the calculation of migration statistics. Insect data will be separated from other target data (i.e., birds and bats) based on target flight speed. Stantec will calculate and report the average hourly and nightly passage rate (targets/kilometer/hour), seasonal passage rate, nightly and seasonal flight direction, and nightly and seasonal flight height. The percentage of targets flying below the height of the proposed turbines will be calculated on a nightly basis. Data will be compiled into a radar migration report after radar migration surveys are completed.

2.4 DIURNAL RAPTOR MIGRATION SURVEYS

The objective of the diurnal raptor migration surveys is to document species composition, timing, and flight patterns of migrating raptors at the Project to assist in evaluating siting decisions. It should be noted that while pre-construction data provides a snap-shot of raptor activity in an area at the time it was sampled, pre-construction data do not predict levels of post-construction mortality in raptors. For example, the Pennsylvania Game Commission prepares annuals reports in the form of a Cooperative Agreement that summarize results of pre and post-construction bird and bat surveys conducted at all Pennsylvania projects in an effort to assess the impacts of operational wind projects on local and migrant bird and bat populations. In 2012, Taucher et al.[3] reported that despite the volumes of pre-construction and post-construction data (45 sites) included in these assessments, they have not been able to develop a model that predicts the extent of bird or bat mortality.

Stantec completed raptor migration surveys in fall 2015, and will do so again in spring 2015. From 9 September to 25 November 2015, 24 survey days were completed from the raptor migration survey location shown in Figure 1. The survey site in fall 2015 was located a quarter mile from the

[3] Taucher, J., T. Librandi Mumma, W. Capouillez. 2012. Pennsylvania Game Commission Wind Energy Voluntary Cooperation Agreement Third Summary Report. Available online at: http://www.pccd.state.pa.us/portal/server.pt/document/1378280/pgc_3rd_wind_energy_summary_report_2012_pdf

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radar site. It was on flat ground and had an extensive view. In spring 2016, Stantec will move the raptor location northward to a location that is central and prominent to the Project area (Figure 1). Spring surveys will be conducted between 1 March and 15 June at a rate of 2 surveys every 7 days, pending suitable weather conditions. Surveys will occur on days with optimal migration weather, which typically include fair days with thermal development and winds generally from a southerly direction. Raptor surveys will be conducted from 9 am to approximately 2 hours before sunset. Binoculars will be used to aid in identification. In addition to raptors, incidental observations of songbirds and migrating flocks or individuals of large birds such as waterfowl, wading birds, and shorebirds will be documented.

Data for raptors will be documented on Stantec raptor datasheets and include species, age, and sex, as possible, flight behavior, flight height, flight time, flight locations, flight paths, and weather conditions. Data will be analyzed and summarized by hour, day, and for the season. Data will be compiled and results discussed in a raptor migration report.

2.5 BREEDING BIRD SURVEYS

The objective of the breeding bird surveys is to assess species composition, abundance, diversity, and distribution of songbirds relative to available habitat in the Project area during the breeding season to assist in evaluating siting decisions, in accordance with MDIFW Recommendations.

Breeding bird surveys will consist of point count surveys designed to document singing male birds and responses of territorial raptors breeding in the Project area. Stantec will conduct breeding bird surveys at 20 point count locations in the various habitat types present throughout the Project area. Due to the homogenous nature of the habitat in the southern and western portions of the Project, 20 point count locations is expected to sufficiently capture the breeding bird composition of the Project area. A GPS point will be taken at each location.

Surveys will occur in 3 rounds: 1 in May and 2 in June. Surveys will be scheduled to target fair-weather days. During each round, each point will be visited and birds seen or heard will be documented during a 10-minute sampling period. Immediately after each 10-minute period for points located in forested habitat, the observer will broadcast a great horned owl (*Bubo virginianus*) call and northern goshawk (*Accipiter gentilis*) call, alternating between species, for 5 minutes to attempt to observe any approaching or territorial raptors, indicative of potential breeders, proximal to the point.

A separate survey report will describe the habitat at each point count location, methods, and results, and will include a discussion section. Data will be analyzed and summarized to determine species richness, relative abundance, species frequency, and community diversity for each type of habitat available in the Project area and for the survey as a whole.

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2.6 ACOUSTIC BAT MONITORING

The objectives of the acoustic bat monitoring survey are to assess frequency of rare species presence at the Project, document seasonal patterns in bat activity and species presence, and to characterize conditions during which bats are present near the rotor zone.

Acoustic surveys began in fall 2015, when Stantec deployed 2 bat detectors in the single Project meteorological (met) tower (at ~5 m and ~20 m in height) and at 4 additional sites in the Project area in trees at ~5–8 m in height (the shore of the southern pond of Myer's Ponds, a hedgerow near the radar and raptor survey locations, and 2 forest edges in the southwest portion of the Project). Year 2016 acoustic surveys will expand on previous efforts and include a total of 11 detectors deployed from 1 April 2016 until 31 October 2016. This survey window is longer than suggested in MDIFW Recommendations, but was recommended by MDIFW during a meeting on 23 February 2016 between MDIFW, APEX, and Stantec. The 2016 survey period will encompass the spring migration, summer residency, and fall migration seasons for bats. In addition to the 6 detector locations used in fall 2015, Stantec will deploy an additional detector on the onsite met tower at ~40 m in height. Stantec will also deploy an additional 4 detectors in trees at ~5–8 m in new locations in the northern portion of the Project area, resulting in 11 detectors total. If a second met tower is deployed in the Project area, we will also deploy detectors at heights of ~40 m and ~20 m on the tower, for a total of 13 detectors.

A combination of SM3 (Wildlife Acoustics ©) and Anabat (Titley Electronics Pty Ltd.) detectors will be used for data collection. Specifically, we will use SM3 detectors in the met tower at heights of ~40 m and ~20 m. Detectors will sample from approximately ½ hour before sunset until ½ hour after sunrise on a nightly basis throughout the survey periods. Stantec will visit each detector at a maximum interval of every 3 weeks to download and store data and maintain equipment.

Acoustic data will be analyzed using Kaleidoscope (classifier version 3.1.0) and BCID (version 2.7b), approved USFWS automated analysis programs. Stantec will then visually examine any calls identified as a state or federally listed species. Additionally, automated programs calculate a nightly maximum likelihood estimator (MLE) to assess the likelihood that individual species are present at a given location on a single night. According to the USFWS *2015 Range-Wide Indiana Bat Summer Survey Guidelines* (April 2015) a MLE of less than 0.05 indicates likely presence. Stantec will compare file-level identification results for each automated program and manual vetting as well as nightly MLE values to evaluate patterns in rare species detection such as seasonality, frequency, and distribution across habitats.

Because automated analysis programs sometimes filter out poor quality bat passes, Stantec will also visually analyze all files recorded by the detectors deployed near the rotor zone in the met tower (detectors at ~20 and ~40 m in height) to ensure that all bat passes are included in analysis of activity versus conditions in the rotor zone, and to allow better comparability with results of similar studies at other Projects. Stantec will determine the temperature (hourly average) and wind speed (10-minute average) at which each bat pass occurred to quantify the conditions during which bats were active near the rotor zone. Stantec will also evaluate

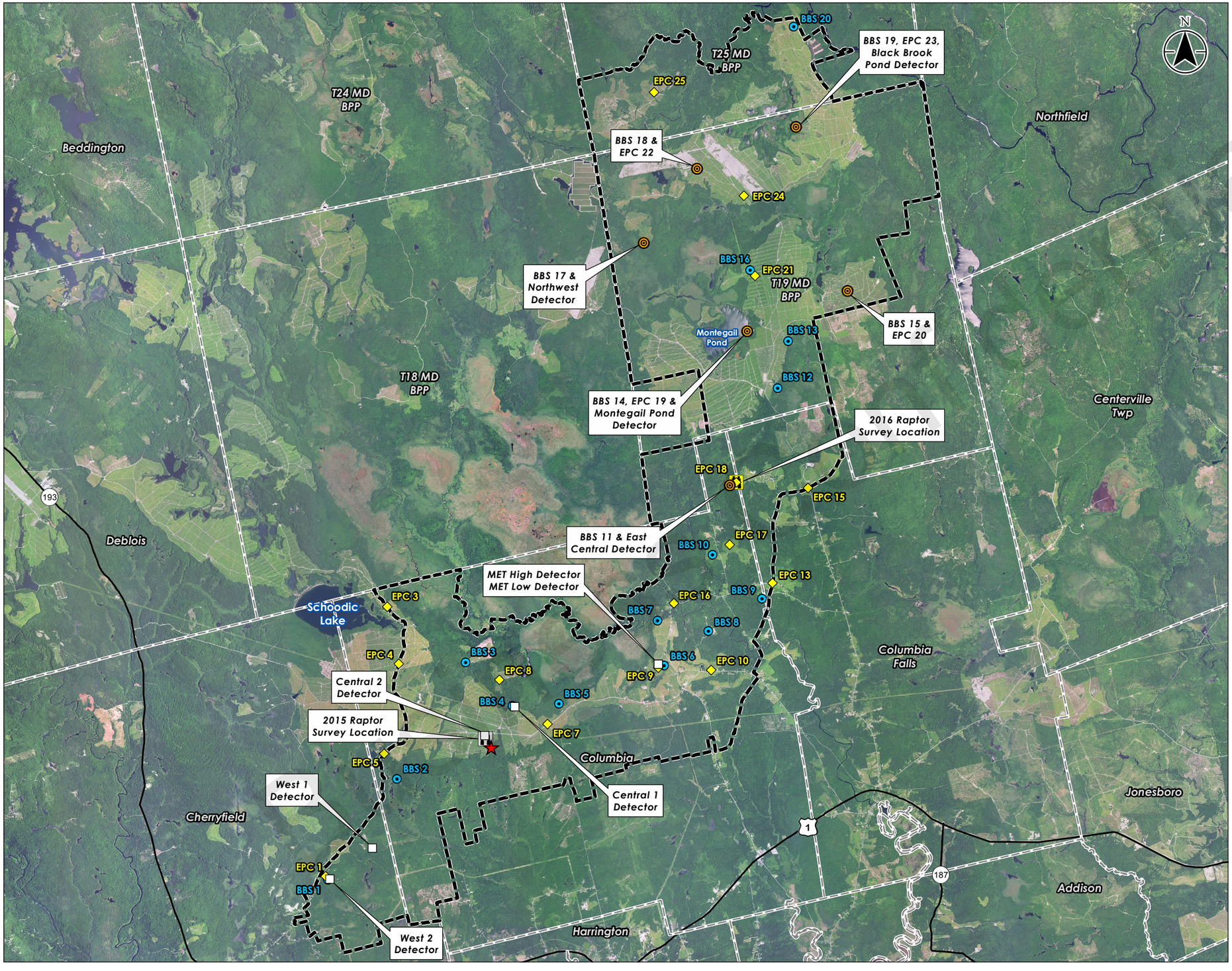
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seasonal and temporal patterns in bat activity near the rotor zone based on acoustic data from the detectors deployed at ~20 and ~40 m. Methods, results, and a discussion will be included in an acoustic bat report after the completion of the survey.

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FIGURE 1

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Legend

- 2015 Radar Location
- 2015 Raptor Survey Location
- 2016 Raptor Survey Location
- 2016 Acoustic Bat Survey Location
- 2016 Breeding Bird Survey (BBS) Point Location
- 2016 Eagle Survey Point Count (EPC) Location
- 2016 Multiple Surveys at Same Location
- Approximate Project Area (2015-11-23)
- Town Boundary

0 1.5 3 Miles

1" = 1.5 miles (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 19N
2. Town boundary data provided by the Maine Office of GIS (MEGIS).
3. 2015 National Agriculture Imagery Program (NAIP) aerial orthoimagery provided by USDA's Farm Service Agency.



Project Location
Washington County, Maine

195601142
Prepared by DLJ on 2015-12-14
Quality Review by KWH on 2015-12-15
Independent Review by SBG on 2015-12-16

Client/Project
Apex Clean Energy, Inc.
Apex Downeast Wind Project
Washington County, Maine

Figure No.
1

Title
2016 Work Plan Bird and Bat Survey Locations

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

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APPENDIX B INCIDENTAL SPECIES

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Appendix B Table 1. Bird species observed incidentally during bald eagle use surveys, Downeast Wind Project, 2015–2016.

Species Common Name	Species Scientific Name	No. Observations	Point Locations
American black duck	*Anas rubripes*	1	9
American crow	*Corvus brachyrhynchos*	117	1, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, New 21, New 22, New 23, New 24
American goldfinch	*Spinus tristis*	5	10, 13, 16
American kestrel	*Falco sparverius*	18	1, 3, 4, 5, 7, 9, 10, 13, 15, 21, 7a, New 25
American robin	*Turdus migratorius*	61	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 22, 23, 25, New 21, New 24, New 25
bald eagle	*Haliaeetus leucocephalus*	3	1, 5
belted kingfisher	*Megaceryle alcyon*	2	9, New 22
black-and-white warbler	*Mniotilta varia*	1	19
black-capped chickadee	*Poecile atricapillus*	42	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18, 19, 20, 24, New 21
blue jay	*Cyanocitta cristata*	38	1, 3, 4, 5, 8, 9, 10, 11, 13, 14, 15, 17, 18, 20, 22, 24, New 22, New 24
blue-headed vireo	*Vireo solitarius*	3	15, 16, 19
broad-winged hawk	Buteo platypterus	20	3, 4, 5, 7, 9, 11, 12, 13, 14, 17, New 25
brown thrasher	*Toxostoma rufum*	4	17, 22, 23
Canada goose	*Branta canadensis*	31	5, 9, 10, 22
cedar waxwing	*Bombycilla cedrorum*	16	1, 3, 7, 11, 13, 15, 18, New 24, New 25
chestnut-sided warbler	*Setophaga pensylvanica*	2	11, 17
chipping sparrow	*Spizella passerina*	12	13, 15, 16, 19, 21, New 21, New 22
cliff swallow	*Petrochelidon pyrrhonota*	3	7, 9, 10
common grackle	*Quiscalus quiscula*	12	16, 19, New 22
common loon	*Gavia immer*	5	17, 19, New 20
common nighthawk	*Chordeiles minor*	1	17
common raven	*Corvus corax*	176	All points besides 6 and 8a
common yellowthroat	*Geothlypis trichas*	3	10, 16, New 21
Cooper's hawk	Accipiter cooperii	2	10, 13
dark-eyed junco	*Junco hyemalis*	7	3, 10, 13, 15, 16, 18
double-crested cormorant	*Phalacrocorax auritus*	1	19
downy woodpecker	*Picoides pubescens*	1	16
eastern phoebe	*Sayornis phoebe*	2	13, 16
European starling	*Sturnus vulgaris*	2	13, 22
great blue heron	*Ardea herodias*	3	5, 7
hermit thrush	*Catharus guttatus*	2	16, 23
killdeer	*Charadrius vociferus*	1	9
mallard	*Anas platyrhynchos*	2	5
merlin	Falco columbarius	1	New 23
mourning dove	*Zenaida macroura*	16	1, 4, 5, 10, 13, 16, 18, 19, 21, 25
northern cardinal	*Cardinalis cardinalis*	2	1, 18
northern flicker	*Colaptes auratus*	6	7, 15, 18, 19, 21, 22
northern harrier	*Circus cyaneus*	20	1, 3, 4, 7, 8, 15, 16, 20, 21, 7a
northern parula	*Setophaga americana*	2	16, 19
osprey	Pandion haliaetus	5	19, 22, New 21
palm warbler	*Setophaga palmarum*	4	New 22

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2015-2016 BALD EAGLE USE AND BALD EAGLE NEST AND HERON ROOKERY SURVEYS FOR THE DOWNEAST WIND PROJECT

November 10, 2016

Species Common Name	Species Scientific Name	No. Observations	Point Locations
pileated woodpecker	*Dryocopus pileatus*	1	15
red-breasted nuthatch	*Sitta canadensis*	2	3, 16
red-winged blackbird	*Agelaius phoeniceus*	1	22
ruby-crowned kinglet	*Regulus calendula*	1	19
red-tailed hawk	Buteo jamaicensis	3	1
ruby-throated hummingbird	*Archilochus colubris*	1	13
ruffed grouse	*Bonasa umbellus*	2	16, 19
savannah sparrow	*Passerculus sandwichensis*	10	4, 8, 13, 15, 16, 17, 18, 21, New 22
semipalmated plover	*Charadrius semipalmatus*	200	5
sharp-shinned hawk	Accipiter striatus	3	10, 13, 15
snow bunting	*Plectrophenax nivalis*	11	3, 5, 8, 11, 20, 22, 23
song sparrow	*Melospiza melodia*	13	5, 7, 10, 13, 16, 17, 18, 22, 24
tree swallow	*Tachycineta bicolor*	2	3, 22
turkey vulture	Cathartes aura	51	1, 3, 5, 7, 8, 9, 10, 13, 18, 19, 24, 25, 7a, New 20, New 21, New 23, New 24
upland sandpiper	*Bartramia longicauda*	5	23, 24
vesper sparrow	*Pooecetes gramineus*	5	21, 24, New 21
white-throated sparrow	*Zonotrichia albicollis*	5	5, 13, 16, 17, 23
wild turkey	*Meleagris gallopavo*	2	25
wood duck	*Aix sponsa*	1	16
yellow-bellied sapsucker	*Sphyrapicus varius*	2	5, 15
yellow-rumped warbler	*Setophaga coronata*	53	13, 16, 19, 21, 22, New 21, New 22
unidentified bird	*Aves (gen, sp)*	2	17, New 22
unidentified raptor	*Accipitridae (gen, sp)*	13	9, 10, 13, 15, 17, 18, 7a
unidentified sparrow	*Emberizidae (gen, sp)*	4	8, 10, 20, New 25
unidentified warbler	*Parulidae (gen, sp)*	1	1

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2017 Bald Eagle Nest and Heron Rookery Surveys for the Downeast Wind Project

Washington County, Maine



Prepared by:
Stantec Consulting Services Inc.
30 Park Drive
Topsham, ME 04086

June 28, 2017

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2017 BALD EAGLE NEST AND HERON ROOKERY SURVEYS FOR THE DOWNEAST WIND PROJECT

June 28, 2017

Executive Summary

Stantec Consulting Services Inc. conducted an aerial nest survey for the proposed 30-turbine (90-megawatt) Downeast Wind Project (DOW or Project) in Washington County, Maine. This survey represented the second year of aerial nest surveys conducted at DOW. The objective of the survey was to locate bald eagle (*Haliaeetus leucocephalus*) nests and great blue heron (*Ardea herodias*) rookeries within 4 miles of the area proposed for development. Surveys followed methods described in the Project Work Plan developed in coordination with U.S. Fish and Wildlife Service (USFWS) and Maine Department of Inland Fisheries and Wildlife (MDIFW) and were consistent with the USFWS final eagle rule (81 FR 91494, USFWS 2016) and MDIFW's June 2015 *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (MDIFW Recommendations) dated June 2015.

Survey flights were completed on April 10 and May 24, 2017. Bald eagle nests and great blue heron rookeries were recorded, and incidental observations of bald eagles, great blue heron, osprey (*Pandion haliaetus*) and osprey nests were recorded if observed.

Three occupied bald eagle nests were located: 1 within the Project area on Schoodic Lake, 1 located 2.6 miles southeast of the Project area on the Pleasant River in Columbia Falls, and 1 located 3.3 miles southeast of the Project area on the Pleasant River in Addison. One active great blue heron rookery was documented in southern Deblois, approximately 2.2 miles west of the Project area, with 6 to 8 nests containing several adult great blue herons. This rookery was found to be occupied during the 2016 flights, and the number of nests seen were similar between years. In addition, 4 active osprey nests were observed within the survey area approximately 1 to 4 miles west and northwest of the Project area. No other nests, rookeries or incidental observations were made during the survey.

2017 BALD EAGLE NEST AND HERON ROOKERY SURVEYS FOR THE DOWNEAST WIND PROJECT

June 28, 2017

1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) conducted an aerial bald eagle nest and heron rookery survey in and adjacent to the 30-turbine (90-megawatt) Downeast Wind Project (DOW or Project) in Washington County, Maine, in spring 2017. This survey represented the second year of aerial nest surveys conducted at DOW. Results of the first year of aerial nest surveys were included in the *2015-2016 Bald Eagle Use and Bald Eagle Nest and Heron Rookery Surveys for the Downeast Wind Project* (Stantec 2016).

The objective of the survey was to locate bald eagle (*Haliaeetus leucocephalus*) nests and great blue heron (*Ardea herodias*) rookeries within 4 miles of the Project. The survey was conducted to comply with the U.S. Fish and Wildlife Service's (USFWS) final eagle rule (81 FR 91494, USFWS 2016) and the Maine Department of Inland Fisheries and Wildlife's (MDIFW) *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (MDIFW Recommendations) dated June 2015. Surveys followed methods described in the Project Work Plan submitted to MDIFW on February 19, 2016 and as discussed in a March 2, 2017 coordination meeting.

2.0 METHODS

Stantec conducted 2 aerial flights in the spring of 2017. Prior to flights, Stantec reviewed information provided by MDIFW regarding known occupied and historic bald eagle nest and great blue heron rookery locations in the vicinity of the Project, as well as the results of aerial surveys conducted in spring 2016. Following protocol previously established by the USFWS (2007)[1], Stantec notified Mark McCollough of the USFWS Maine Field Office on April 3, 2017 that flights were being conducted in the area and that Stantec was coordinating with MDIFW on the timing and methods of the flights.

The survey was conducted in a Cessna fixed-wing aircraft piloted by Mr. Scott Story (first flight) and Mr. Shawn Michaud (second flight) of Penobscot Island Air. Charlie Todd, Endangered & Threatened Species Coordinator for MDIFW, was an observer on the first flight. The survey consisted of low altitude passes, approximately 300–500 feet above ground level (agl), along transects spaced ¾ miles apart within 4 miles of the Project area.

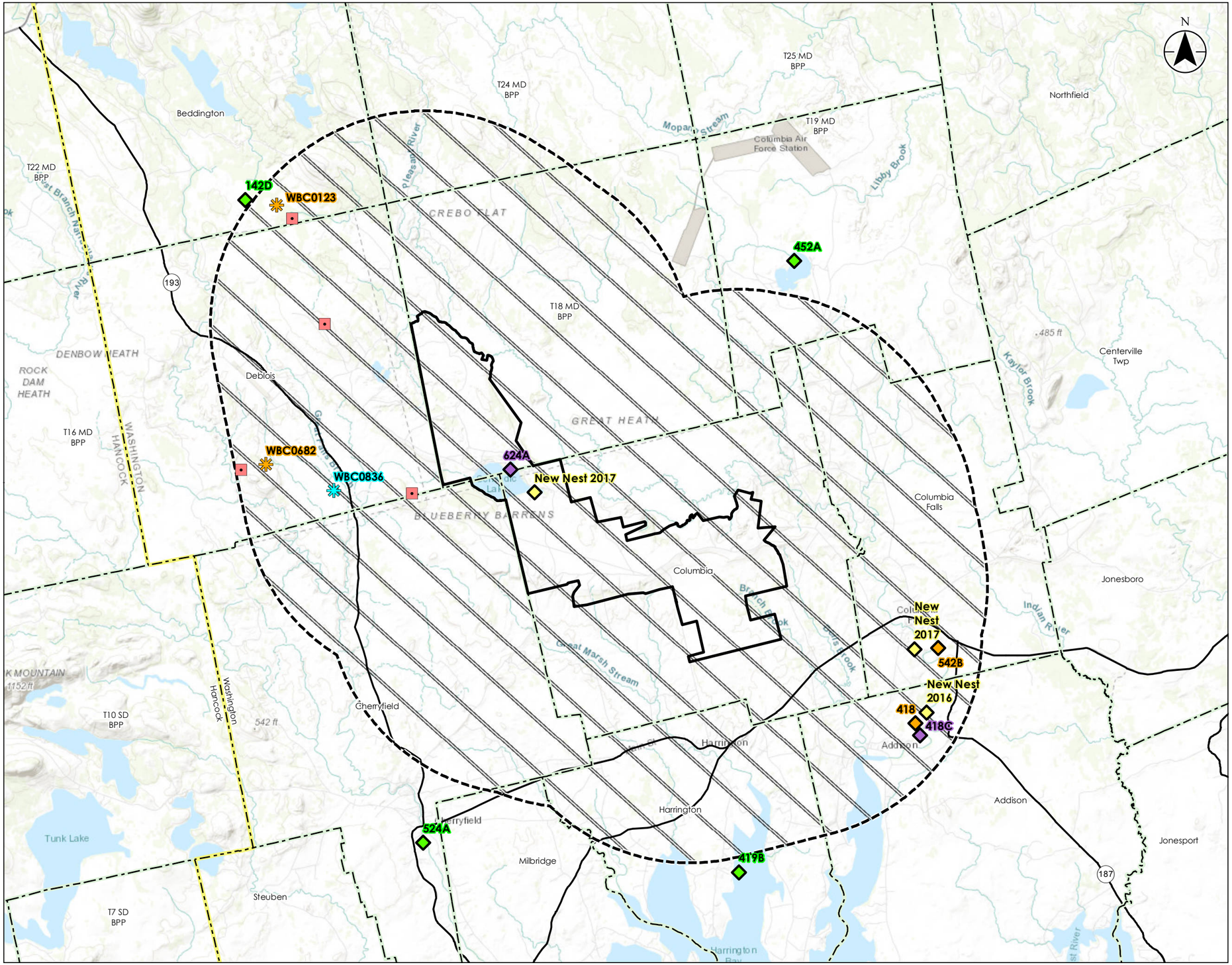
The first flight was conducted on April 10, 2017 and focused on surveying for bald eagle nests. The timing of the first flight was chosen to correspond with the time period when bald eagles are actively incubating eggs in the nests. The purpose of the first flight was to survey the previously mapped bald eagle nests and to search potential nesting habitat for new bald eagle nests within 4 miles of the Project area (Figure 1). Stantec also surveyed 4 mapped bald eagle nests

[1] U.S. Fish and Wildlife Service. 2007. *National Bald Eagle Management Guidelines*. U.S. Fish and Wildlife Service, Washington, DC.

located just outside of the 4-mile search area. The survey area included inland waterbodies and portions of Narraguagus River, Harrington Bay, and other bays and inlets on the Atlantic Ocean. The survey also included the shoreline of rivers and lakes, the ocean, and major wetland systems to target preferred potential bald eagle nesting habitat. Consistent with the final eagle rule, bald eagle nests were considered occupied if a pair of adult bald eagles were observed at or near a nest during the normal incubation time period.During this flight, observers also surveyed for great blue heron nests and recorded other large bird nests if observed.

The second flight was conducted on May 24, 2017 and focused on surveying for great blue heron rookeries by surveying a transect pattern as described above, and large wetland complexes (marshes, bogs, etc.) and the adjacent upland habitat out to a distance of 4 miles from the Project area. The survey also included investigation of known rookeries or bald eagle nests within 4 miles of the Project area, for eggs and/or occupancy. Any newly discovered bald eagle nets were also recorded. The timing of the second flight was chosen to correspond with the time period when great blue herons are actively incubating eggs or brooding chicks in the nests.

During the 2 flights, incidental observations of bald eagles, osprey (*Pandion haliaetus*), and great blue heron were recorded if these species were observed.



Stantec

Legend

- 3/4 Mile Transects
- Project Area
- Aerial Survey Area (4 miles from Project Area)

2017 Eagle Flight Results

Bald Eagle Nests 2017

- Occupied
- Occupied, Not Previously Documented
- Unoccupied
- Previously Documented, Not Located

Other Nests

- Occupied Great Blue Heron Rookery
- Previously Documented, Not Located Great Blue Heron Rookery
- Occupied Osprey Nest 2017

Aerial Nest Survey Flight Dates

First Flight: April 10, 2017

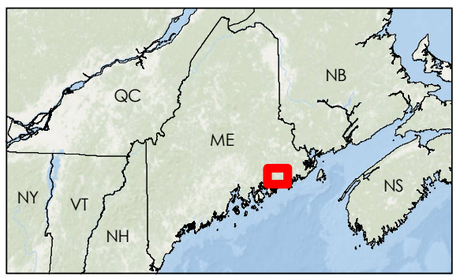
Second Flight: May 24, 2017

0 2 4 Miles

1" = 2 miles (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 19N
2. Town boundary data provided by the Maine Office of GIS (MEGIS).
3. Base map: ESRI World Topographic Map web mapping service.



Project Location
Washington County, Maine

195601142
Prepared by GAC on 2017-06-08
Reviewed by TT on 2017-06-08

Client/Project
Apex Clean Energy, Inc.
Apex Downeast Wind Project
Washington County, Maine

Figure No.
1

Title
2017 Aerial Nest Survey Area and Results

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

V:\1958\active\195601142\03_data\gis_cad\GIS\mxd\AvianBat\Eagles\Eagle_Flight\Report\601420_01_EagleFlight2017.mxd Revised: 2017-06-21 By: acarpenter

3.0 RESULTS

3.1 EAGLES

Stantec identified 5 bald eagle nests within the survey area: 3 occupied and 2 unoccupied (Figure 1, Table 1). Four additional occupied nests were identified just outside the survey area and are also shown in Figure 1 and Table 1. The historic MDIFW mapped nest on Schoodic Lake (#624) in the Project area was not occupied in 2016 or 2017. However, a new nest was discovered in the southeast corner of the lake during the second flight. Two adult bald eagles were observed perched on the shoreline near the nest location. The view into this nest was obscured by branches and therefore it could not be determined if eggs or young were present.

Table 1. Results for bald eagle nests during the 2017 aerial nest survey, Downeast Wind Project.

MDIFW Nest #	Location	Flight 1 Nest Status	Flight 2 Nest Status	Distance to Current Project Area (mi)
New Nest 2017	Schoodic Lake	Not Located	Occupied	Inside Project Area
624A	Schoodic Lake	Unoccupied	Unoccupied	Inside Project Area
New Nest 2017	Pleasant River-North	Occupied	Occupied	2.6
542B	Pleasant River-North	Not Located	Not Located	3.1
New Nest 2016	Pleasant River-South	Occupied	Occupied	3.3
418C	Pleasant River-South	Unoccupied	Unoccupied	3.3
418A&B	Pleasant River-South	Not Located	Not Located	3.4
142D	Bog Brook Flowage	Occupied	Unoccupied	4.1
419B	Harrington Bay	Occupied	Occupied	4.3
452A	Montegail Pond	Occupied	Occupied	4.7
524A	Narraguagus River	Occupied	Occupied	5.4

Two additional occupied nests were identified within the survey area that are presumed to be alternate nests for previous MDIFW-mapped locations (542B and 418). One of the new occupied nests is located on the Pleasant River near Route 1 in Columbia Falls, 2.6 miles east of the Project area. This location is presumed to be an alternate nest for the MDIFW nest 542B. That nest was mapped 0.5 miles to the east of the new nest, but nest 542B was not found during the 2017 flights. The other occupied nest was a new location identified in 2016 and a presumed alternate for MDIFW nests 418A,B,C. The new occupied nest location is on the Pleasant River in Addison, an estimated 3.4 miles southeast of the Project area.

The 4 occupied nests located just beyond the survey limits were previously identified by MDIFW (142D, 452A, 419B, and 524A). Adult eagles were observed on or near these nests during both flights, except for nest 142D on Bog Brook Flowage, where no adults were observed during the second flight. It could not be determined if eggs or nestlings were present in any of these occupied nests due to obscured views by the adult or overhanging branches.

3.2 HERONS

No new heron rookeries were detected during the 2017 survey (Figure 1). Rookery 836 was occupied with 6 to 8 nests containing several adult herons. This rookery is located an estimated 2.2 miles west of the current Project area (Figure 1). Rookeries 682 (in Southern Deblois) and 123 in Beddington were not located. No other great blue heron nests were observed in previously mapped locations or other wetland complexes within the survey area during either survey flight.

3.3 OSPREY

During the first flight, Stantec observed 2 osprey nests on the transmission line in Deblois (Figure 1). During the second flight, 2 additional osprey nests were located, 1 on a cell tower in eastern Deblois and 1 in a large dead tree in Bog Brook Flowage in Beddington. Adult ospreys were observed on or near all 4 nests during the second flight.

3.4 OTHER SPECIES

No large bird nests or incidental observations of other raptors occurred during the survey.

4.0 DISCUSSION

One bald eagle nest, a new occupied nest on the southeastern shore of Schoodic Lake, is within the Project area. This is a new nest location and is presumed to have replaced 624A on Schoodic Lake, which was located but found to be unoccupied in both 2016 and 2017. All other bald eagle nests are over 2.5 miles from the current Project area and over 4 miles from proposed turbine locations. The active great blue heron rookery is approximately 2.3 miles from proposed turbine locations. This rookery was occupied with a similar number of nests during the 2016 flights.

One of the osprey nests found in 2017 in Deblois was also documented in 2016. All 4 osprey nests found in 2017 are located outside of the Project area.

Stantec

Memo

To:	Dana Valleau	From:	Tom Tetreau
	TRC		Stantec Consulting Services Inc.
File:	195601654	Date:	June 14, 2019

Reference: Downeast Wind Project – 2019 Aerial Nest Survey

INTRODUCTION

Stantec Consulting Services Inc. (Stantec) conducted an aerial survey for great blue heron (*Ardea herodias*) rookeries in the vicinity of the proposed Downeast Wind Project (Project) in Washington County, Maine (Figure 1). A survey for great blue heron rookeries was recommended by the Maine Department of Inland Fisheries and Wildlife (MDIFW) during agency consultation for the Project. Concurrent with the great blue heron survey Stantec surveyed for bald eagle (*Haliaeetus leucocephalus*) nests consistent with previous surveys conducted at the Project to provide current data on eagle nest status in the area surrounding the Project.

Prior to the survey, Stantec reviewed information provided by the MDIFW regarding known active and historic heron rookery and bald eagle nest locations in the vicinity of the Project. Eagle nest locations were recently updated by the MDIFW following their own aerial surveys for the entire state of Maine in 2018. Following eagle survey protocol previously established by the United States Fish and Wildlife Service (USFWS) (2007)[1], Stantec notified Mark McCollough of the USFWS Maine Field Office on May 20, 2019, that a flight was being conducted in the area.

METHODS

Stantec conducted the aerial nest survey on May 22, 2019, in a Cessna fixed-wing aircraft piloted by Jeremy Harmon of Penobscot Island Air and accompanied by two Stantec observers, Tom Tetreau and Derek Benedix. The timing of the flight was chosen to correspond with the period when great blue herons are actively incubating eggs or brooding chicks in the nests. The survey covered the area within four miles of the currently proposed Project turbine locations. The survey targeted mapped heron rookeries and surveyed large wetland complexes (marshes, bogs, etc.) and the adjacent upland habitat. The survey consisted of low altitude passes, approximately 300–500 feet above ground level, at the large wetland complexes. New nest locations were located using a tablet equipped with a global positioning system receiver. In addition, known bald eagle nests were surveyed, and the shorelines of rivers and lakes within four miles of the proposed turbines, including Spruce Mountain Lake, Southwest Pond, Pleasant River Lake, Mopang Stream, and Pleasant River, were surveyed for new bald eagle nests. Incidental observations of great blue herons, bald eagles, osprey (*Pandion haliaetus*) and other raptors were also recorded. Results are described below and in Table 1.

RESULTS

Stantec surveyed five historic great blue heron rookery locations. No nests were observed at three of these locations. Stantec observed great blue heron nesting activity at WBC0836, where two stick nests and one adult great blue heron were observed in the standing dead trees within the wetland complex. Great blue heron nesting activity was observed at another, previously undocumented location approximately 1.7 miles east of WBC0836. Four stick nests were observed in the standing dead trees in this wetland complex. No adult birds were observed.

[1] U.S. Fish and Wildlife Service, 2007. *National Bald Eagle Management Guidelines*. U.S. Fish and Wildlife Service, Washington, DC.

Stantec surveyed the three known bald eagle nest locations (142D, 624B, and 452A) within four miles of the proposed turbines. Adult eagles were observed on the nests at 624B and 452A. No eagles were observed at 142D No new bald eagle nests were observed.

Three osprey nests were observed on transmission line poles and a cell tower in Deblois and Beddington, east of the Project, during the flight. Incidental raptor observations included flying adult bald eagles and turkey vultures (*Cathartes aura*).

Table 1. 2019 Results of Aerial Nest Survey within 4 miles of proposed turbines at the Downeast Wind Project.

Nest/Rookery ID	Location	MDIFW 2018 Eagle Flight Status	Stantec 2019 Flight Status	Distance to Nearest Proposed Turbine (mi)
New Rookery 2019	Unnamed wetland, Deblois/Cherryfield	N/A – heron rookery	4 nests, no adults observed	1.7
WBC0836	Unnamed wetland, Deblois	N/A – heron rookery	Occupied, 2 nests with 1 adult	2.6
WBC0123	Bog Brook Flowage, Beddington	N/A – heron rookery	No nests observed	2.7
WBC0682	Unnamed pond, Deblois	N/A – heron rookery	No nests observed	3.6
IFW125	Horseshoe Pond, Beddington	N/A – heron rookery	No nests observed	3.4
WBC0843	Unnamed wetland, Beddington	N/A – heron rookery	No nests observed	3.8
624B	Schoodic Lake	Occupied, single adult	Occupied, adult on nest	1.1
452A	Montegail Pond, T19 MD	Occupied, breeding pair	Occupied, adult on nest and adult flying nearby	1.2
142D	Bog Brook Flowage, Beddington	Occupied, breeding pair	Unoccupied	3.2

Please contact us if you have any questions about the information presented in this memo.

Stantec Consulting Services Inc.

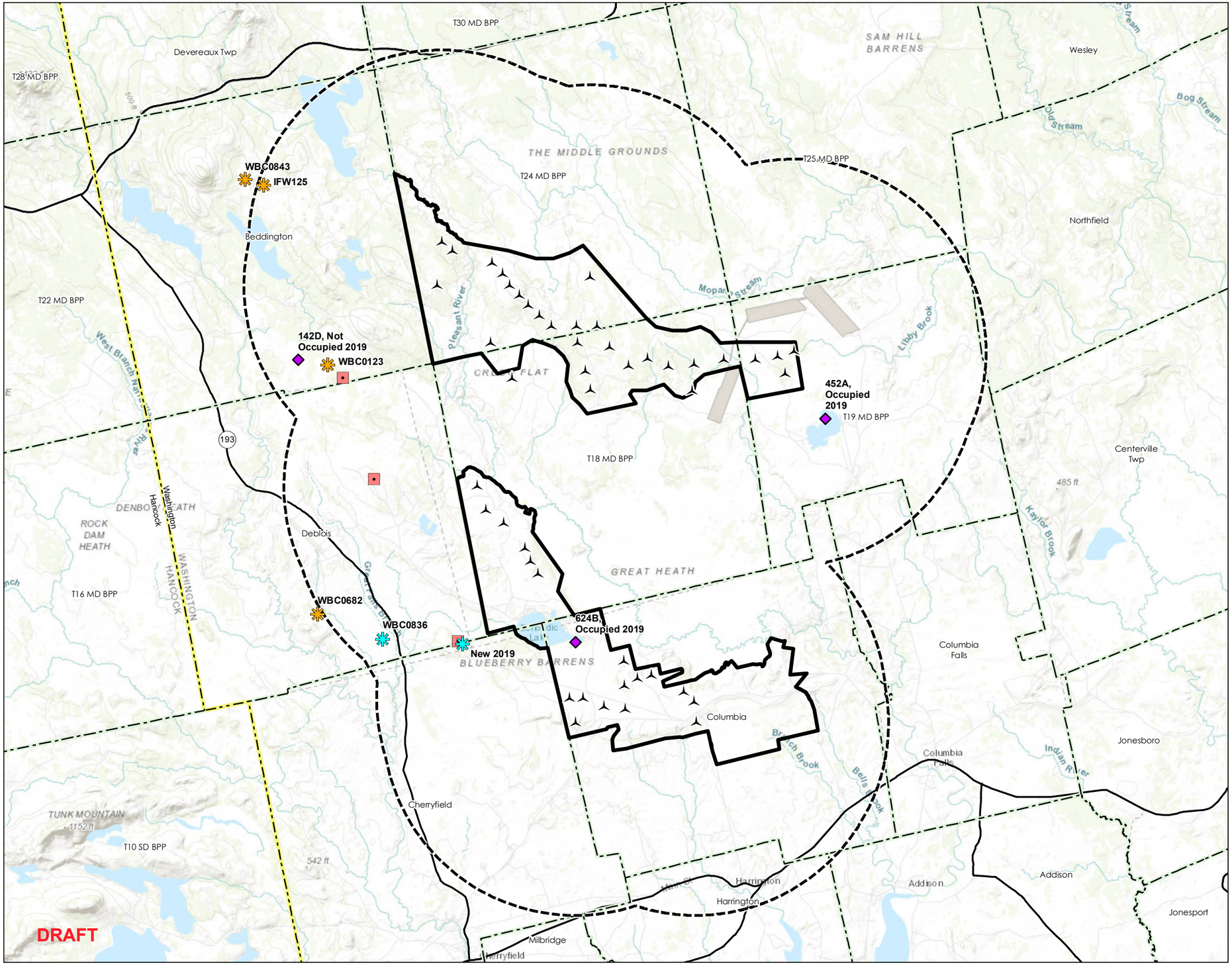


Tom Tetreau PWS, NHCWS, CPESC
Project Manager, Environmental Scientist

Phone: (207) 406-5496
tom.tetreau@stantec.com

Attachment: Figure 1: 2019 Aerial Nest Survey Results

c. Adam Gravel, Stantec



Stantec

Legend

- Proposed Turbine Layout
- Project Boundary
- Aerial Survey Area (4 miles from proposed turbine layout)
- IFW Intact Eagle Nest 2018
- Occupied Great Blue Heron Rookery
- Previously Documented, Not Located Great Blue Heron Rookery
- Osprey Nest
- County Boundary
- Town Boundary

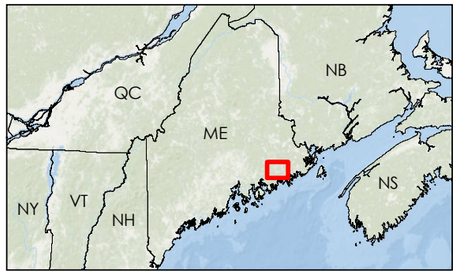
N

0 11,000 22,000 Feet

(At original document size of 11x17)
1:132,000

Notes

1. Coordinate System: NAD 1983 UTM Zone 19N
2. L30 turbine locations from 4/30/2019. 2018 eagle nests from MDIFW. Town boundary data provided by the Maine Office of GIS (MEGIS).
3. Background: ESRI World Topographic Map web mapping service.



Project Location
Washington County, Maine

Prepared by REM on 2019-06-10
TR by GAC on 2019-06-10
IR Review by TT on 2019-06-10

Client/Project
195601654
Apex Clean Energy, Inc.
Apex Downeast Wind Project
Washington County, Maine

Figure No.
1

DRAFT

Title
2019 Aerial Nest Survey Results

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Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

EXHIBIT 7-8: EAGLE NEST MONITORING REPORT

Schoodic Nest Monitoring Report
Proposed Downeast Wind Project

Town of Columbia, and Unorganized Territories of
T24 MD BPP and T18 MD BPP,
Washington County, Maine

Prepared for:

Downeast Wind, LLC
PO Box 219
366 US Hwy 1
Columbia Falls, ME 04623

Prepared by:

TRC
14 Gabriel Drive
Augusta, ME 04330

March 2021

EXECUTIVE SUMMARY

Downeast Wind, LLC is developing the Downeast Wind Project (Project) in Washington County, Maine. TRC conducted nest monitoring at the Schoodic Lake bald eagle nest, which is the only known active eagle nest within four miles of the Project area. Surveys were completed from March 5, 2019 to September 6, 2019 to determine the extent and map the spatial use and any patterns the nesting eagle pair and any fledged juveniles exhibited to inform Project planning and design. Methods were developed with United States Fish and Wildlife Service (USFWS) during a consultation meeting held on February 22, 2019.

Four-hour monitoring events were conducted bi-weekly in March and April, when the eagles were expected to begin using the nest, then completed every week from May until the juveniles were confirmed to have fledged in early September, for a total of 92 hours of monitoring. Surveyors recorded all observations of the nesting pair and juveniles during each monitoring event, including estimated flight height, flight path, and age class of the individual. In addition, any federally and/or state listed species were recorded if observed incidentally within the Project area at any time during the surveys.

Two adult eagles were first observed on the nest at Schoodic Lake on April 12, 2019. Over the season the pair successfully fledged two juvenile eagles. The juvenile eagles were last observed on August 30. The adult pair were generally observed leaving the nest flying to the west, down the lake and returning from the same direction. The eagles were recorded within 263 meters of the nest on average and the maximum recorded distance from the nest was 854 m. The nearest proposed turbine to the nest is at least 1,600 m from this nest, and therefore risk to nesting eagles is anticipated to be low. Northern harrier, a State of Maine Species of Special Concern, was observed incidentally once during the Schoodic Lake nest monitoring. This was the only other state or federally listed species observed.

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APPENDICES

Appendix A Data Sheets

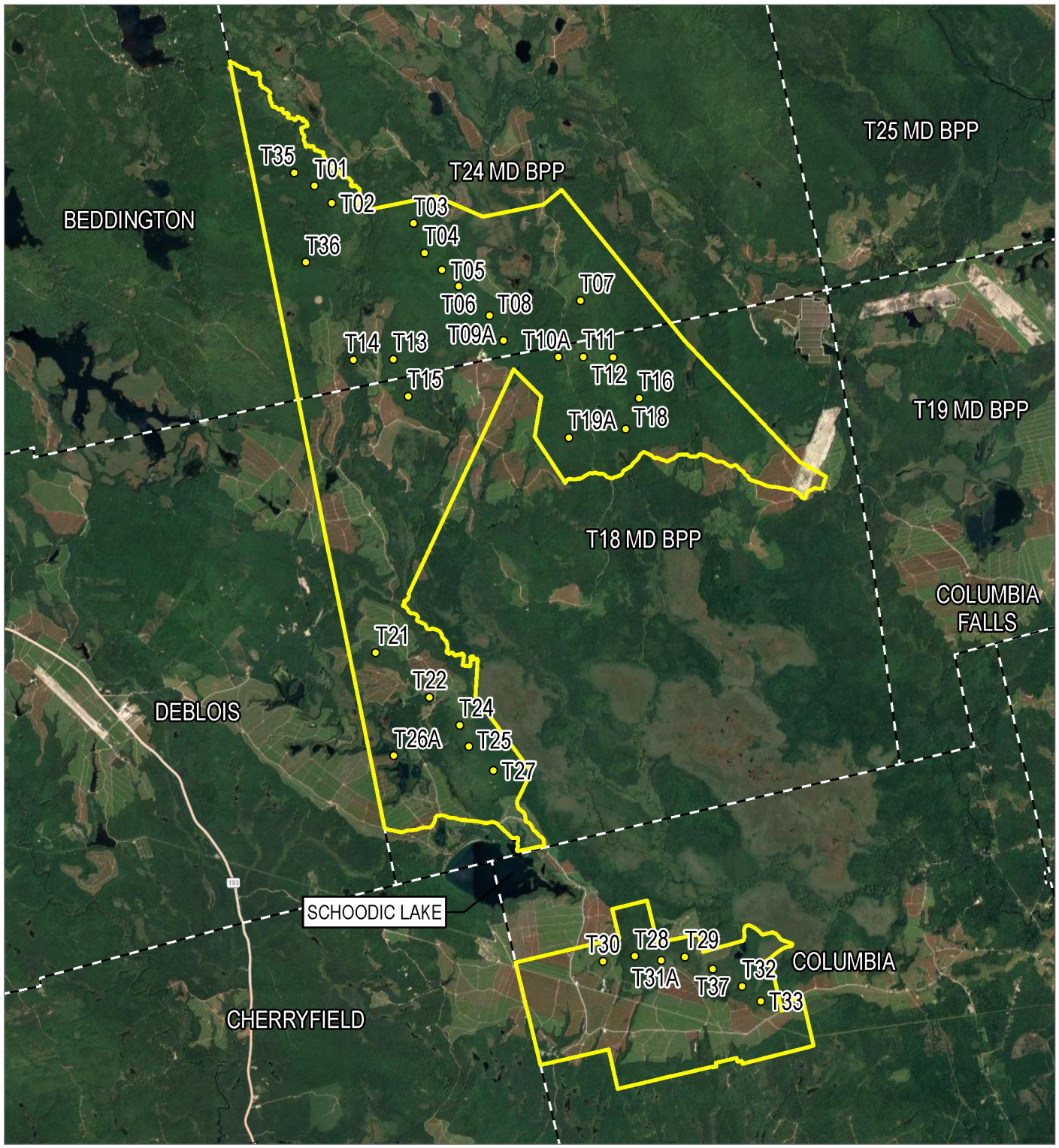
1.0 INTRODUCTION

1.1 PROJECT AREA

Downeast Wind, LLC is developing the Downeast Wind Project (Project), a proposed 126 MW wind generating facility, in Washington County, Maine (Figure 1). The Project area is comprised of commercial agriculture in the form of blueberry barrens and forestry land. There are several ponds and lakes within the Project area, the largest being Schoodic Lake, which is approximately 385 acres.

1.2 PURPOSE AND OBJECTIVES

TRC conducted eagle nest monitoring at the only known active nest occurring within four miles of the Project area (nest located on Schoodic Lake). The primary objective of this survey was to determine the extent of spatial use and map any spatial patterns the nesting eagle pair and fledged juvenile eagles exhibited to inform Project planning and design. Methods were developed through consultation with the United States Fish and Wildlife Service (USFWS). In addition, any federally and/or state listed species were recorded if observed incidentally within the Project area at any time during the surveys.



TURBINE LOCATION
PROJECT BOUNDARY
TOWN BOUNDARY

0 4,450 8,900
FEET
1:106,800 1" = 8,900'



BASE MAP: GOOGLE IMAGERY
DATA SOURCES: DOWNEAST WIND, ESRI, ME GIS, TRC

PROJECT:
DOWNEAST WIND
WASHINGTON COUNTY, MAINE

TITLE:
DOWNEAST WIND PROJECT AREA

DRAWN BY:	P. JACQUES	PROJ. NO.:	325066
CHECKED BY:	M. STEVENSON		
APPROVED BY:	R. JACKSON		FIGURE 1
DATE:	FEBRUARY 2021		

TRC
14 Gabriel Drive
Augusta, ME 04330
Phone: 207-620-3886

FILE: APEX_Downeast

Coordinate System: NAD 1983 UTM Zone 19N Foot US; Map Rotation: 0
--Saved By: PJACQUES on 2/26/2021, 14:58:22 PM; File Path: S:\1-PROJECTS\APEX\Downeast_Wind\9-APRX\APEX_Downeast.aprx; Layout Name: Eagle_Fig1_PROJECT_AREA_8_5x11P

2.0 MONITORING PROTOCOL

2.1 MONITORING DESIGN

2.1.1 Nest Monitoring

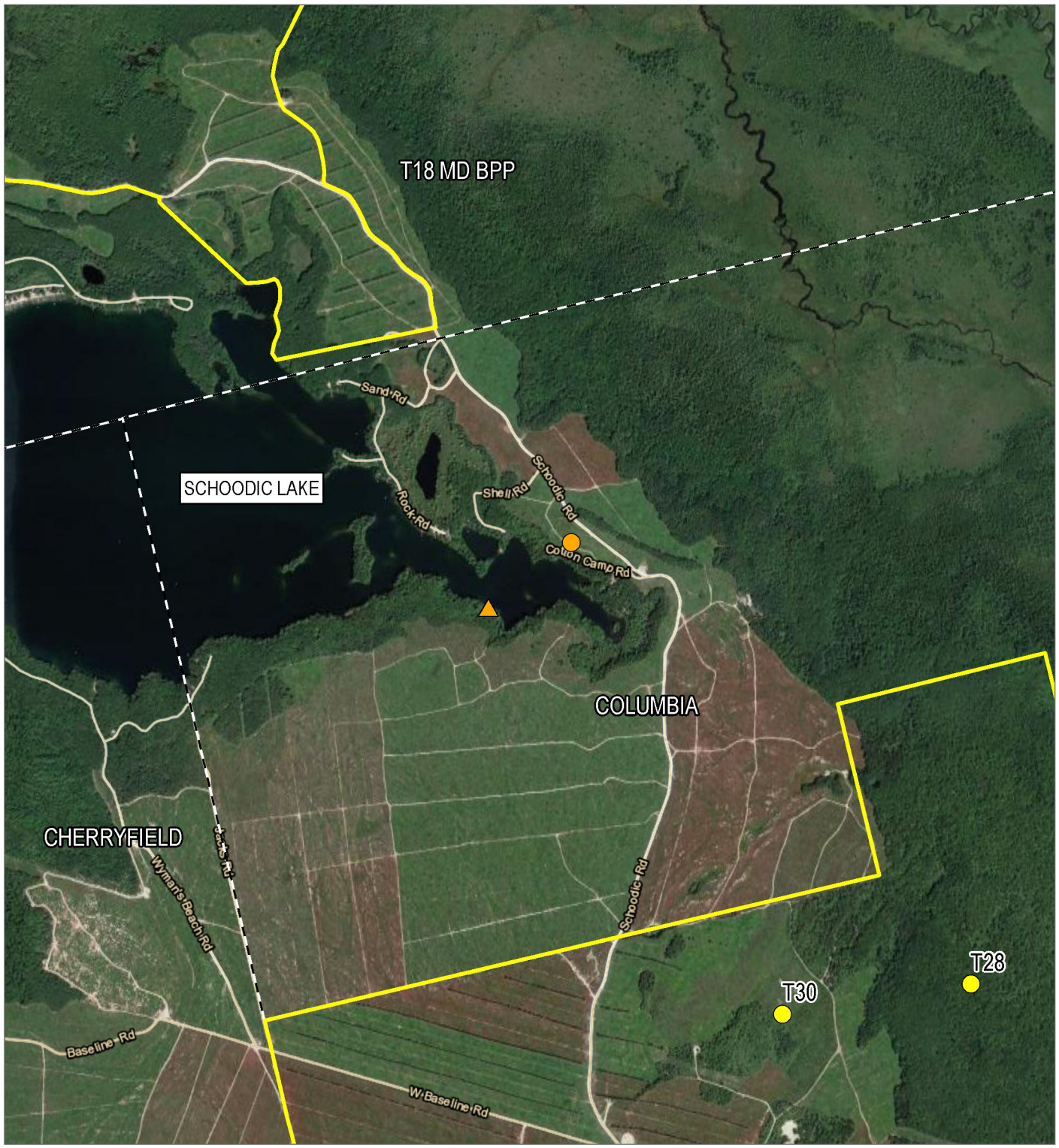
The Schoodic Lake bald eagle nest was identified during aerial nest surveys at the Project in 2017 and 2019. Observers monitored the bald eagle nest from one survey point located at the north shore of Schoodic Lake approximately 1,100 ft from the nest (Figure 2). The nest was monitored bi-weekly during the months of March and April, when eagles were expected to begin using the nest, and then weekly through the beginning of September, or when the juveniles were confirmed to have fledged (i.e., not observed for an entire survey). Monitoring periods lasted for four hours during daylight hours and took place during all weather conditions, however observers targeted good weather days, or days with good potential visibility. An additional survey by canoe was undertaken on September 6, 2019 to determine if the eagles and / or juvenile(s) were still active on or near the nest.

2.2 DATA COLLECTION

Flight paths and locations for observed eagles were digitized over aerial maps of the Project and appended to data sheets. Detailed bird and weather observation data was collected during the nest monitoring survey on digital data sheets accessed by smart phone or tablet. Data forms were developed based on the Hawk Migration Association of North America (HMANA) data forms for raptor migration.

2.2.1 Data QA/QC, Entry and Summary

Data sheets were reviewed for completeness and accuracy prior to leaving the survey point. Any errors or inconsistencies noted were rectified at that time. Data was further reviewed and verified by survey management staff following each survey event. Data was analyzed concurrently with ongoing field work to ensure Project objectives were being met by the types and method of data being collected. Data was uploaded to the survey database. Survey Data Sheets are provided as Appendix A. Summaries of temporal and spatial distributions of eagles and listed species (if observed) were generated.

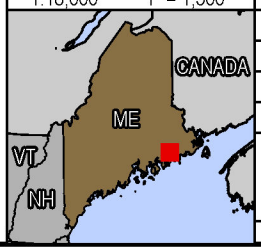


SCHOODIC NEST
OBSERVATION LOCATION
TURBINE LOCATION
PROJECT BOUNDARY
TOWN BOUNDARY

BASE MAP: GOOGLE IMAGERY
DATA SOURCES: DOWNEAST WIND, ESRI, ME GIS, TRC

N

0 750 1,500
FEET
1:18,000 1" = 1,500'



PROJECT:
DOWNEAST WIND
WASHINGTON COUNTY, MAINE

TITLE:
SCHOODIC NEST MONITORING SITE

DRAWN BY:	P. JACQUES	PROJ. NO.:	325066
CHECKED BY:	M. STEVENSON		
APPROVED BY:	R. JACKSON		FIGURE 2
DATE:	FEBRUARY 2021		

TRC
14 Gabriel Drive
Augusta, ME 04330
Phone: 207-620-3886

FILE: APEX_Downeast

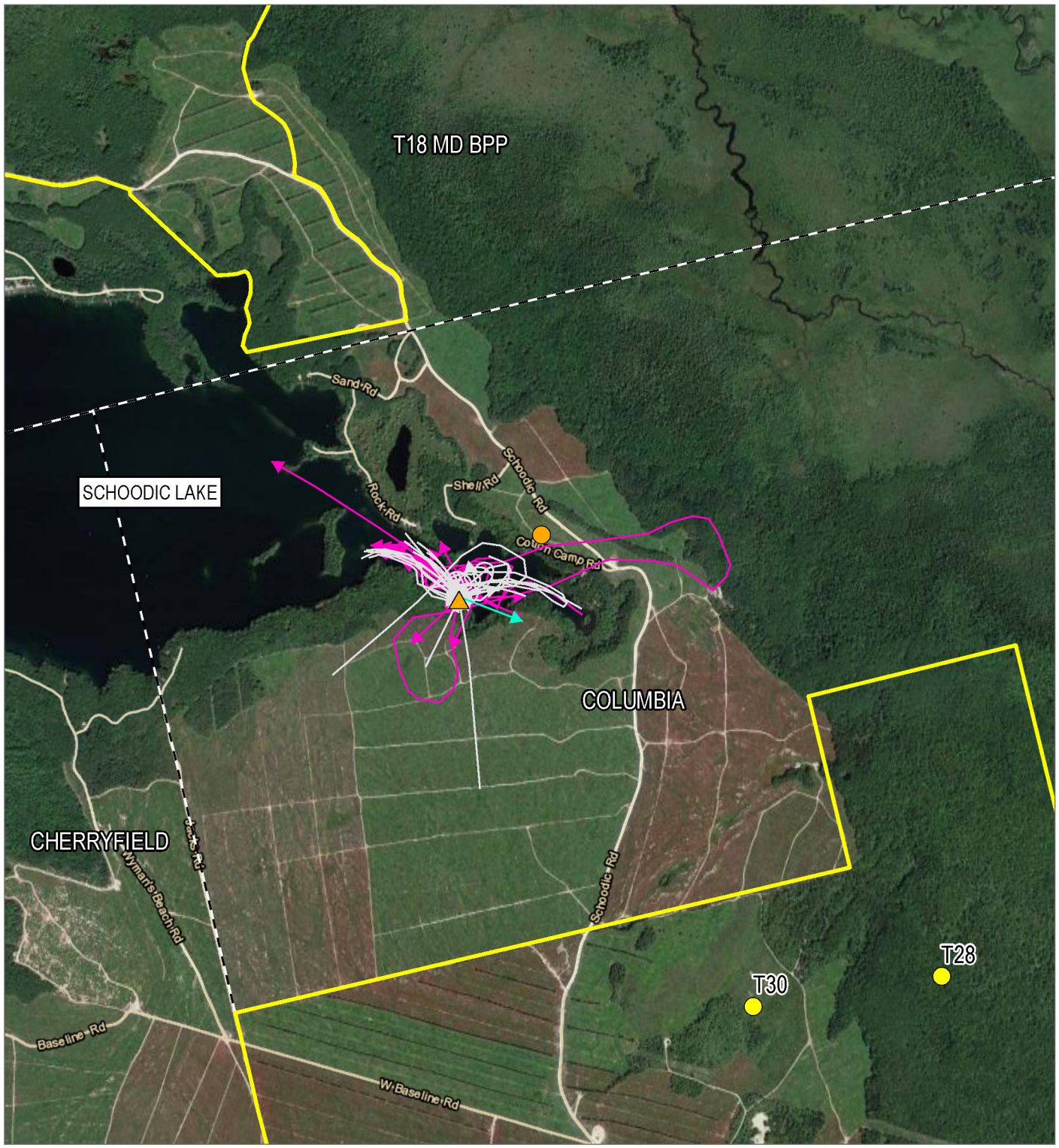
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3.0 RESULTS

3.1 SCHOODIC LAKE NEST MONITORING

A total of 23 monitoring events for a total of 92 survey hours were completed at the Schoodic Lake bald eagle nest. The observation of one adult perched near the nest site occurred on March 5, 2019 and represented the first recorded eagle activity of the survey. Adult eagles were observed incubating the eggs on the nest on April 12, 2019, and eggs likely hatched around mid-May 2019. Two juveniles were confirmed in the nest on June 5, 2019. The juvenile eagles were first observed in flight on July 24, 2019. The last observation of eagles near the nest was recorded on August 30, 2019. An additional survey by canoe was undertaken on September 6, 2019 to determine if the eagles and / or juvenile(s) were still using the lake. No eagles were observed during this canoe survey and therefore no additional nest monitoring surveys were completed after this confirmation.

Adults were typically seen leaving the nest to forage, flying to the west along the lake away from areas where turbine locations are proposed. They would return from the west or from the south, which is generally in the direction of Schoodic Lake or the barrens to the south. The average distance of observed flights was approximately 263 m from the nest, with the furthest observed flight approximately 854 m from the nest. The adult and fledged juvenile eagles were only observed flying from the nest in the general direction of the proposed turbine areas once out of a total of 56 flight observations. The recorded distance of this flight path was 215 meters, which is less than the distance of proposed turbines from the nest. Figure 3 outlines the estimated flight paths of eagles observed during the survey flying to and from the nest. One Northern harrier, a State of Maine Species of Special Concern, was observed once, incidentally, during the survey. This was the only other state or federally listed species observed.

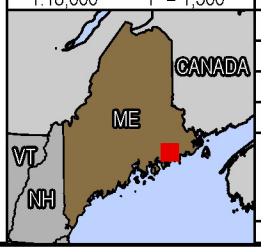


- SCHOODIC NEST
- OBSERVATION LOCATION
- FROM NEST
- TO NEST
- TOWARD DIRECTION OF PROPOSED TURBINES
- TURBINE LOCATION
- PROJECT BOUNDARY
- TOWN BOUNDARY

BASE MAP: GOOGLE IMAGERY
DATA SOURCES: DOWNEAST WIND, ESRI, ME GIS, TRC

N

0 750 1,500
FEET
1:18,000 1" = 1,500'



PROJECT:
DOWNEAST WIND
WASHINGTON COUNTY, MAINE

TITLE:
EAGLE FLIGHT PATHS
TO AND FROM NEST

DRAWN BY:	P. JACQUES	PROJ. NO.:	325066
CHECKED BY:	M. STEVENSON		
APPROVED BY:	R. JACKSON		FIGURE 3
DATE:	FEBRUARY 2021		

TRC
14 Gabriel Drive
Augusta, ME 04330
Phone: 207-620-3886

FILE: APEX_Downeast

Coordinate System: NAD 1983 UTM Zone 19N Foot US; Map Rotation: 0
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4.0 DISCUSSION AND CONCLUSIONS

The eagles were rarely observed flying in the direction of any of the proposed turbine locations and generally stayed within the vicinity of Schoodic Lake. Of the 56 observations recorded, 52 occurred over Schoodic Lake. The eagles were recorded within 263 meters of the nest on average and the maximum recorded distance from the nest was 854 m. The nearest proposed turbine to the nest is at least 1,600 m and, therefore, risk to nesting eagles is expected to be low. In general, flight paths of eagles observed were greater than 0.7 miles from a proposed turbine location. The nest establishment near Schoodic Lake allows for abundant and proximal foraging opportunities within the lake area. Eagles were rarely observed outside of this area or near any of the proposed turbine locations.

High-risk behaviors such as territorial behavior, kiting, and foraging can increase the mortality rate from turbine collision (Smallwood et al 2009). It is thought that these behaviors increase mortality because birds lose their spatial awareness of the turbine locations. Foraging by the adults was often observed; however, this was observed only over the lake and never within the Project area where turbines are proposed. There were three observations of territorial behavior. The territorial behavior took place over the lake and in the vicinity of the nest. There were no high-risk behaviors observed in the Project area near proposed turbine locations. Rather, most high-risk behavior observations occurred near or over the lake. Based on the results of the survey and the flight information recorded, it does not appear that the nesting pair or fledged eagle(s) frequently entered the areas with proposed turbines. Therefore, the eagles associated with the nest site would not be at higher risk of mortality due to turbine collision.

5.0 REFERENCES

Hawk Migration Association of North America (HMANA). 2005. Hawk Migration Association of North America Daily Report Form and data collection instructions. Information available online at: www.hmana.org

Pagel, J.E., Kritz, K.J., Millsap, B.A., Murphy, R.K. 2013. Bald Eagle and Golden Eagle Mortalities at Wind Energy Facilities in the Contiguous United States. *Journal of Raptor Research*, 47(3):311-315. 2013.

Smallwood, K.S., Rugge, L., Morrison, M. L. 2009. Influence of Behavior on Bird Mortality in Wind Energy Developments. *Journal of Wildlife Management* 73 (7):1082-1098.

Todd, C.S. 2004, Bald Eagle Assessment. Maine Department of Inland Fisheries and Wildlife.

U.S. Fish and Wildlife Service, 2020. Updated Eagle Nest Survey Protocol. https://www.fws.gov/migratorybirds/pdf/management/EagleNestSurveyGuidanceUpdated.pdf

U.S. Fish and Wildlife Service, 2013. Eagle Conservation Plan Guidance U.S. Fish and Wildlife Service, Washington DC. https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf

Watson, J. 2002. Comparative Home Ranges and Food Habits of Bald Eagles Nesting in Four Aquatic Habitats in Western Washington. *Northwestern Naturalist, 83*(3), 101-108. doi:10.2307/3536608

APPENDIX A
DATA SHEETS

Schoodic Nest, 2019-03-05

Created	2019-03-05 16:11:51 UTC by Joseph Roy
Updated	2019-03-18 18:10:21 UTC by Meg Stevenson
Location	44.6929456, -67.8782026
Lead Observer	Joseph Roy
Survey Interval	March
Date	2019-03-05
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	10:50
Survey End Time	14:50
Duration of survey (minutes)	240
Count of eagles observed	1
Count of raptors observed	1

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	NW
Temperature (F)	20
Cloud Cover (percent)	0
Visibility	10

Bald Eagle, 1

Raptor Site	Nest
Raptor Date	3/5/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	10:50
Time last observed	11:00
Duration of observation (minutes)	10
Age	Adult
Sex	Unknown
Behavior	Flapping, Perching
General Flight Direction	NW
Flight Height	2 - within rotor swept area
Horizontal Position Code	flight over lake
Notes	Perched near neat area for 10 minutes, flew NW over lake. Lost visual

Weather during observation

Wind Speed	2 - Light breeze
Wind Direction	NW
Temperature (F)	20
Cloud Cover (percent)	0

Visibility	10
Precipitation	0 - none

Schoodic Nest, 2019-03-11

Created	2019-03-11 15:26:49 UTC by Joseph Roy
Updated	2019-03-18 18:10:02 UTC by Meg Stevenson
Location	44.6955146, -67.874285
Lead Observer	Joseph Roy
Survey Interval	March
Date	2019-03-11
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	11:00
Survey End Time	15:00
Duration of survey (minutes)	240

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	SE
Temperature (F)	38
Cloud Cover (percent)	50
Visibility	10
Precipitation	0 - none
Weather Comment	Warm and breezy.

14:12

Time of weather observation	14:12
Wind Speed	4 - Moderate breeze
Wind Direction	SE
Temperature (F)	39
Cloud Cover (percent)	60
Visibility	10
Precipitation	0 - none
Weather Comment	Winds increasing

Schoodic Nest, 2019-04-12

Created	2019-04-12 13:00:19 UTC by Joe Roy
Updated	2019-04-22 19:36:41 UTC by Meg Stevenson
Location	44.7813984, -67.872207
Lead Observer	Joe Roy
Survey Interval	April
Date	2019-04-12
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	09:00
Survey End Time	13:00
Duration of survey (minutes)	240
Count of eagles observed	1
Count of raptors observed	1
Survey Summary Comments	One eagle in nest

Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	4/12/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	11:30
Time last observed	13:00
Duration of observation (minutes)	90
Age	Adult
Sex	Unknown
Behavior	sitting on nest
Notes	Did not see eagle down in nest at first. Heard a vocalization then saw eagle head in nest. Sat for the entire survey

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	N
Temperature (F)	37
Barametric Pressure (inches)	1014
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none

Schoodic Nest, 2019-04-24

Created	2019-04-24 13:22:32 UTC by Randi Jackson
Updated	2019-04-30 13:02:54 UTC by Meg Stevenson
Location	44.6954594739198, -67.8743227199352
Lead Observer	Randi Jackson
Survey Interval	April
Date	2019-04-24
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	09:00
Survey End Time	13:00
Duration of survey (minutes)	240
Count of eagles observed	1
Count of raptors observed	2

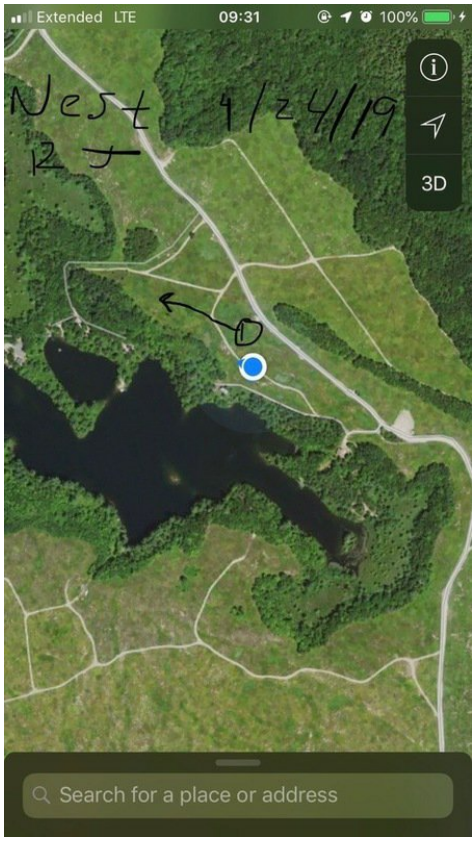
Weather Summary

Wind Speed	1 - Light air
Wind Direction	W
Temperature (F)	39
Relative Humidity	97
Barametric Pressure (inches)	29.75
Cloud Cover (percent)	100
Visibility	5km
Precipitation	1 - Haze or Fog

Northern Harrier, 1

Raptor Site	Schoodic Nest
Raptor Date	4/24/19
Species	Northern Harrier
Raptor observation number	1
Count of individuals in group	1
Time first observed	08:57
Time last observed	08:58
Duration of observation (minutes)	1
Age	Adult
Sex	Male
Behavior	Hunting, Flapping
General Flight Direction	W
Flight Height	1 - below rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Incidental observation: First spotted while driving into the eagle nest survey site. Spotted flying in from the east low over the blueberry barrens. Flew down towards the field and landed.

Map of Flight Path

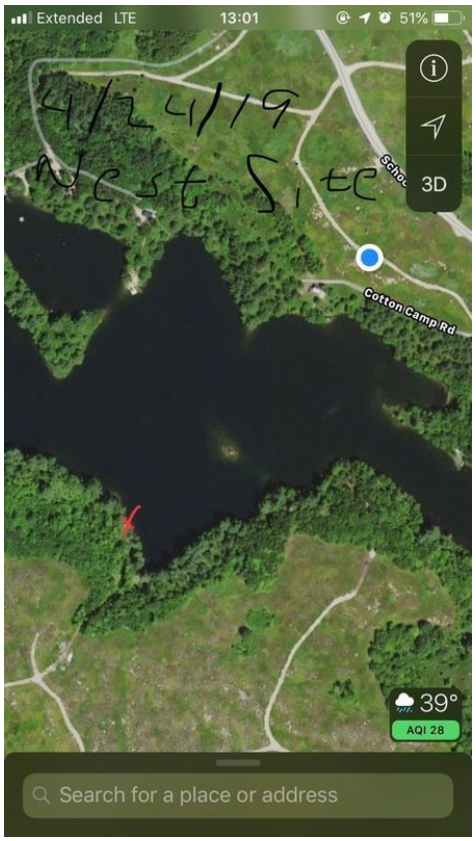


Weather during observation

Wind Speed	1 - Light air
Wind Direction	W
Temperature (F)	39
Relative Humidity	97
Barametric Pressure (inches)	29.97
Cloud Cover (percent)	100
Visibility	5km
Precipitation	1 - Haze or Fog

Bald Eagle, 2

Raptor Site	Schoodic Nest
Raptor Date	4/24/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1
number of eagles observed	1
Time first observed	08:57
Time last observed	13:02
Duration of observation (minutes)	245
Age	Adult
Sex	Female
Behavior	Sitting on nest

General Flight Direction	S
Flight Height	1 - below rotor swept area
Notes	First spotted sitting on the nest. At 9:46 individual on the nest re-arranged sticks in the nest. Re-arranged sticks for about 15 min. Around 10:30 the individual shifted and shuffled in the nest. Individual remained in the nest throughout the duration of the survey.
Map of Flight Path	

Weather during observation

Wind Speed	1 - Light air
Wind Direction	W
Temperature (F)	39
Relative Humidity	97
Barametric Pressure (inches)	29.97
Cloud Cover (percent)	100
Visibility	5km
Precipitation	1 - Haze or Fog

11:15

Time of weather observation	11:15
Wind Speed	1 - Light air
Wind Direction	W
Temperature (F)	36
Relative Humidity	99
Barametric Pressure (inches)	29.74
Cloud Cover (percent)	100

Visibility	5km
Precipitation	2 - Drizzle

12:22

Time of weather observation	12:22
Wind Speed	1 - Light air
Wind Direction	W
Temperature (F)	36
Relative Humidity	99
Barametric Pressure (inches)	29.97
Cloud Cover (percent)	100
Visibility	5km
Precipitation	3 - Rain

Schoodic Nest, 2019-04-30

Created	2019-04-30 09:34:35 UTC by Meg Stevenson
Updated	2019-12-17 19:58:15 UTC by Meg Stevenson
Location	44.6954857512, -67.8744021804
Lead Observer	Meg Dood
Survey Interval	April
Date	2019-04-30
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	05:16
Survey End Time	09:16
Duration of survey (minutes)	240
Count of eagles observed	6
Count of raptors observed	7

Weather Summary

Wind Speed	0 - Calm
Temperature (F)	35
Relative Humidity	85
Barametric Pressure (inches)	30.26
Cloud Cover (percent)	100
Visibility	10km
Precipitation	0 - none

Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	4/30/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	05:21
Time last observed	06:32
Duration of observation (minutes)	71
Duration within survey boundary	71
Age	Adult
Sex	Female
Behavior	Flapping, Perching, Sitting on nest
General Flight Direction	NW
Horizontal Position Code	Over lake
Notes	One individual (a) observed on nest until 6:23 when second parent returns flying low over the lake. Swap incubation and the first individual perches in near by white pine for about 9 minutes grooming till it flys down lake at tree height and out of site. Second individual (b) remains on nest.

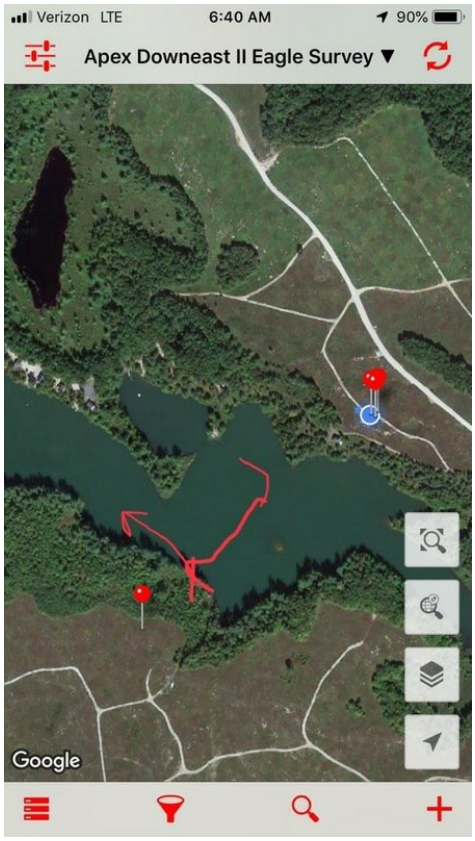
Weather during observation

Wind Speed	0 - Calm
Temperature (F)	33
Relative Humidity	84
Barametric Pressure (inches)	30.26
Cloud Cover (percent)	100
Visibility	10km
Precipitation	0 - none

Bald Eagle, 2

Raptor Site	Schoodic Nest
Raptor Date	4/30/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1
number of eagles observed	1
Time first observed	06:23
Time last observed	07:16
Duration of observation (minutes)	53
Duration within survey boundary	53
Age	Adult
Sex	Male
Behavior	Flapping, On nest
General Flight Direction	S
Flight Height	0 - outside of turbine array area
Notes	Flys up to nest and swaps incubation with eagle a. Came from western end of lake, flying low over lake as it was not seen till it flew up to nest site. Leaves at 7:16.

Map of Flight Path

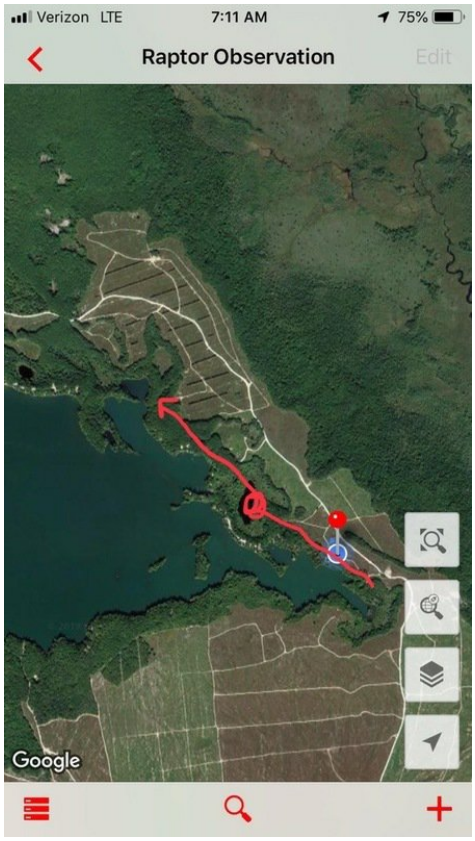


Weather during observation

Wind Speed	0 - Calm
Temperature (F)	33
Relative Humidity	84
Barametric Pressure (inches)	30.26
Cloud Cover (percent)	100
Visibility	10km
Precipitation	0 - none

Turkey Vulture, 3

Raptor Site	Schoodic Nest
Raptor Date	4/30/19
Species	Turkey Vulture
Raptor observation number	3
Count of individuals in group	1
Time first observed	07:04
Time last observed	07:06
Duration of observation (minutes)	2
Age	Adult
Sex	Unknown
Behavior	Flapping, Gliding
General Flight Direction	NW
Flight Height	1 - below rotor swept area, 2 - within rotor swept area

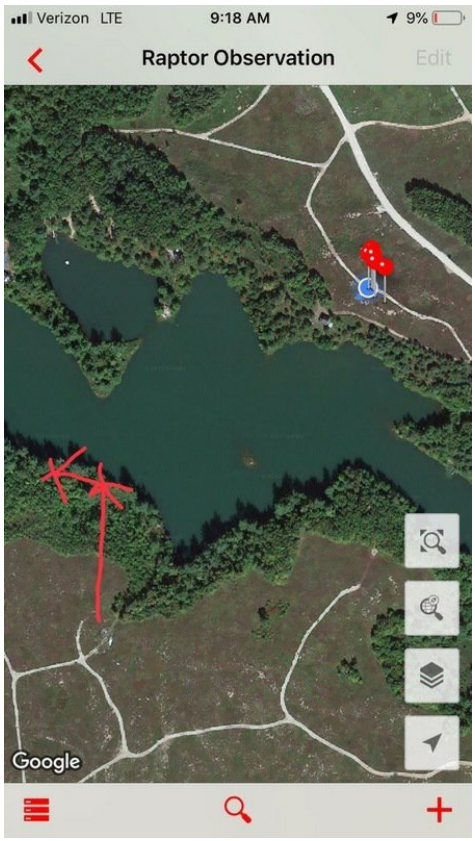
Horizontal Position Code	Over barren
Notes	One TUVU glides along souther edge of barren, circling over trees gaining altitude and then continuing west
Map of Flight Path	

Weather during observation

Wind Speed	1 - Light air
Wind Direction	NW
Temperature (F)	36
Relative Humidity	84
Barametric Pressure (inches)	30.26
Cloud Cover (percent)	100
Visibility	10km
Precipitation	0 - none

Bald Eagle, 4

Raptor Site	Schoodic Nest
Raptor Date	4/30/19
Species	Bald Eagle
Raptor observation number	4
Count of individuals in group	1
number of eagles observed	1
Time first observed	07:16
Time last observed	09:17
Duration of observation (minutes)	121

Duration within survey boundary	121
Age	Adult
Sex	Female
Behavior	Flapping, Sitting on nest
Notes	Flys in from south side of nest and swaps incubation with male. Flys off nest at 8:25 and swaps incubation with male. Perches in nearby tree. In tree till end of survey
Map of Flight Path	

Bald Eagle, 5

Raptor Site	Schoodic Nest
Raptor Date	4/30/19
Species	Bald Eagle
Raptor observation number	5
Count of individuals in group	1
number of eagles observed	1
Time first observed	07:20
Time last observed	07:21
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Male
Behavior	Hunting, Flapping
General Flight Direction	NW
Notes	Returns to nest with fish and immediately leaves.

Map of Flight Path



Bald Eagle, 6

Raptor Site	Schoodic Nest
Raptor Date	4/30/19
Species	Bald Eagle
Raptor observation number	6
Count of individuals in group	2
number of eagles observed	2
Time first observed	08:11
Time last observed	09:18
Duration of observation (minutes)	67
Duration within survey boundary	67
Age	Adult
Sex	Male
Behavior	Perching
Notes	Male returns and perches in tree. Moves to nest at 8:15 and swaps incubation at 8:23. On nest till end of survey

Map of Flight Path



05:40

Time of observation	05:40
Describe observation	AMRO HETH CHSP RBNU EAPH PUFI COLO BAOW HOME BRTH

Schoodic Nest, 2019-05-10

Created	2019-05-10 15:53:56 UTC by Karla Fortier
Updated	2020-02-05 18:45:23 UTC by Karla Fortier
Location	44.6954637, -67.8743317
Lead Observer	Karla Fortier
Survey Interval	May
Date	2019-05-10
Survey Site	Schoodic Nest

Survey Overview

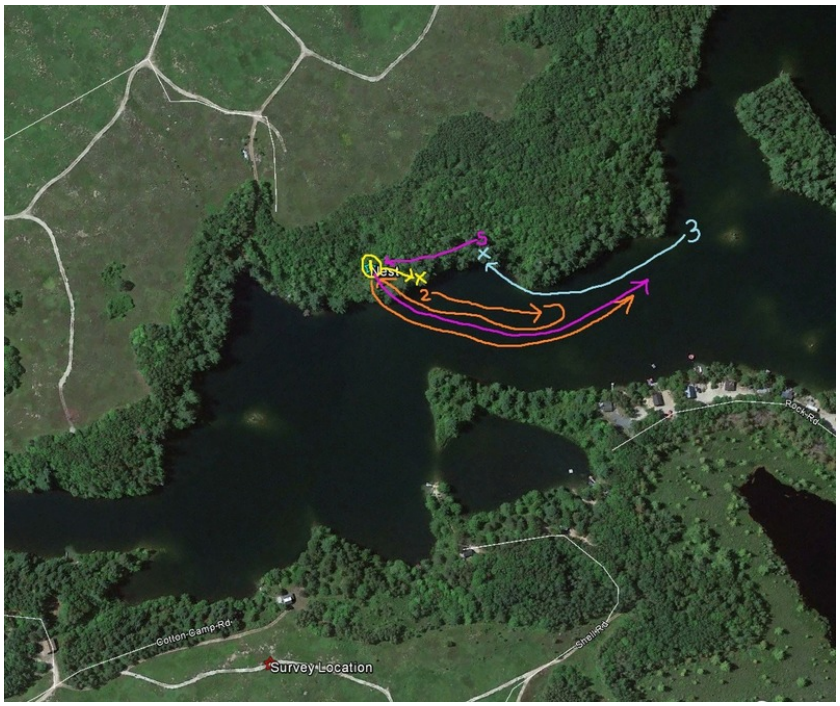
Survey Start Time	11:47
Survey End Time	15:47
Duration of survey (minutes)	240
Count of eagles observed	7
Count of raptors observed	8
Survey Summary Comments	Two resident adult balds. Rain was steady most of survey period. Visibility not hindered. Based on past surveys and notes, guess would be mid/late May for hatch. Both adults observed upon arrival but only one on departure after nest switch.

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	SSE
Temperature (F)	42
Relative Humidity	99
Barametric Pressure (inches)	30.22
Cloud Cover (percent)	100
Visibility	6.4
Precipitation	3 - Rain
Weather Comment	Rain did not let up entire survey period.

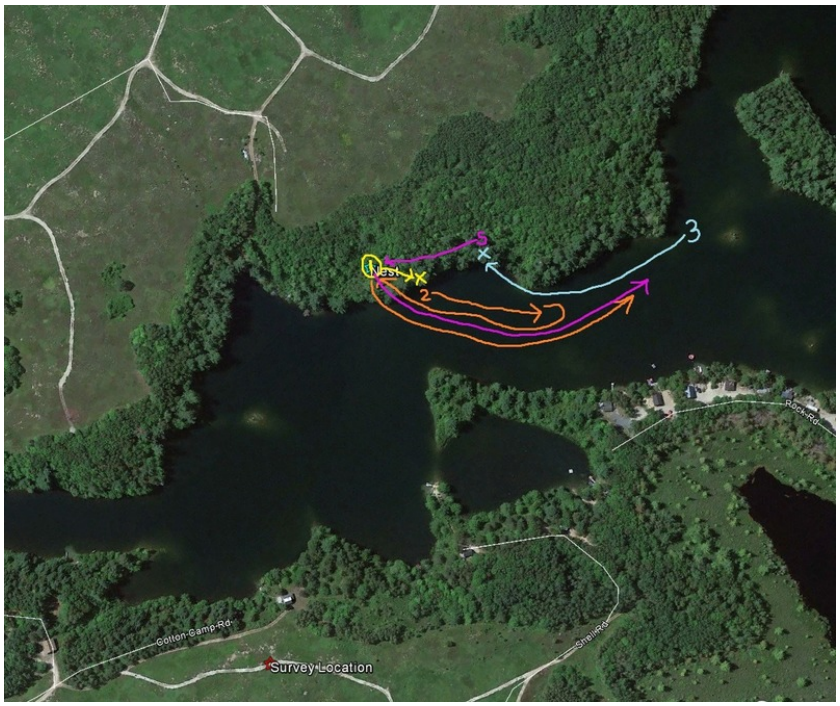
Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	5/10/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	2
number of eagles observed	2
Time first observed	11:47
Time last observed	11:49
Duration of observation (minutes)	2
Duration within survey boundary	0
Age	Adult
Sex	Female, Male
Behavior	Flapping, Perching
General Flight Direction	NW
Flight Height	0 - outside of turbine array area

Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over Lake
Notes	Upon arrival to site, both adults on nest. One incubating, the second adult perched on edge of nest. Bird on edge defecates off front of nest then takes off NW ~200ft away to perch in nearby low, dead snag along same side of shoreline.
Map of Flight Path	 

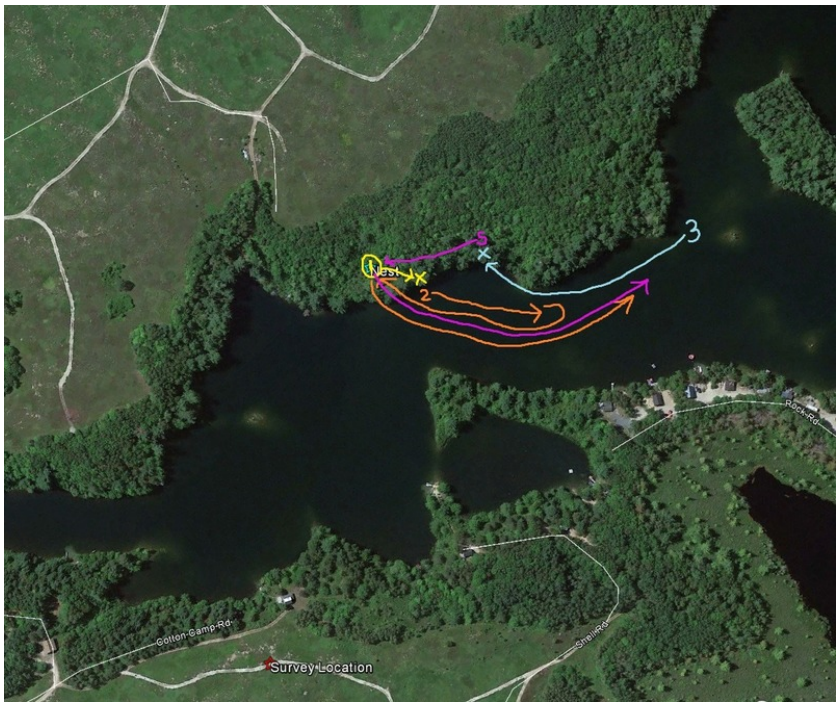
Bald Eagle, 2

Raptor Site	Schoodic Nest
Raptor Date	5/10/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	2

number of eagles observed	2
Time first observed	12:05
Time last observed	12:07
Duration of observation (minutes)	2
Duration within survey boundary	0
Age	Adult
Sex	Female, Male
Behavior	Flapping, Perching
General Flight Direction	NW
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over Lake
Notes	Adult perched in nearby snag leaves briefly and brings a fish back to nest to other adult incubating. Lots of vocalization. This individual then leaves the nest again NW over the lake out of sight.
Map of Flight Path	

Bald Eagle, 3

Raptor Site	Schoodic Nest
Raptor Date	5/10/19
Species	Bald Eagle
Raptor observation number	3
Count of individuals in group	1
number of eagles observed	1
Time first observed	13:09
Time last observed	15:47
Duration of observation (minutes)	158
Duration within survey boundary	0

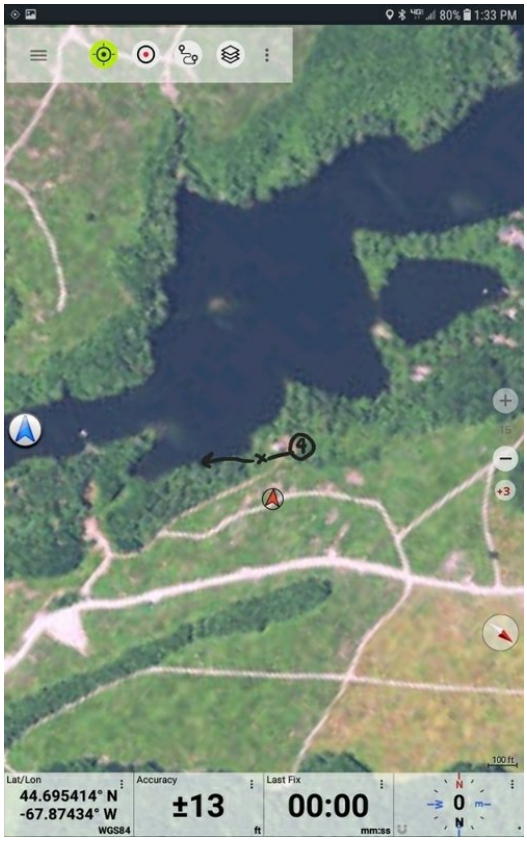
Age	Adult
Sex	Unknown
Behavior	Perching
General Flight Direction	SE
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over Lake
Notes	Mate returns from NW direction over lake, flying SE. Perches in nearby tree, very top of tree, about the 5th tallest pine tree to the right, looking at current nesting tree along same shoreline.
Map of Flight Path	



Kestrel, 4

Raptor Site	Schoodic Nest
Raptor Date	5/10/19
Species	Kestrel
Raptor observation number	4
Count of individuals in group	1
Time first observed	13:22
Time last observed	13:23
Duration of observation (minutes)	1
Duration within survey boundary	0
Age	Adult
Sex	Female
Behavior	Flapping, Perching
General Flight Direction	SE
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Eastern lake shoreline by camp
Notes	Bird emerges from woods slightly north of camp. Perches in tree next to camp, south side, along driveway for a few moments. Takes off SE along Eastern shoreline of lake behind trees in view of foreground.

Map of Flight Path

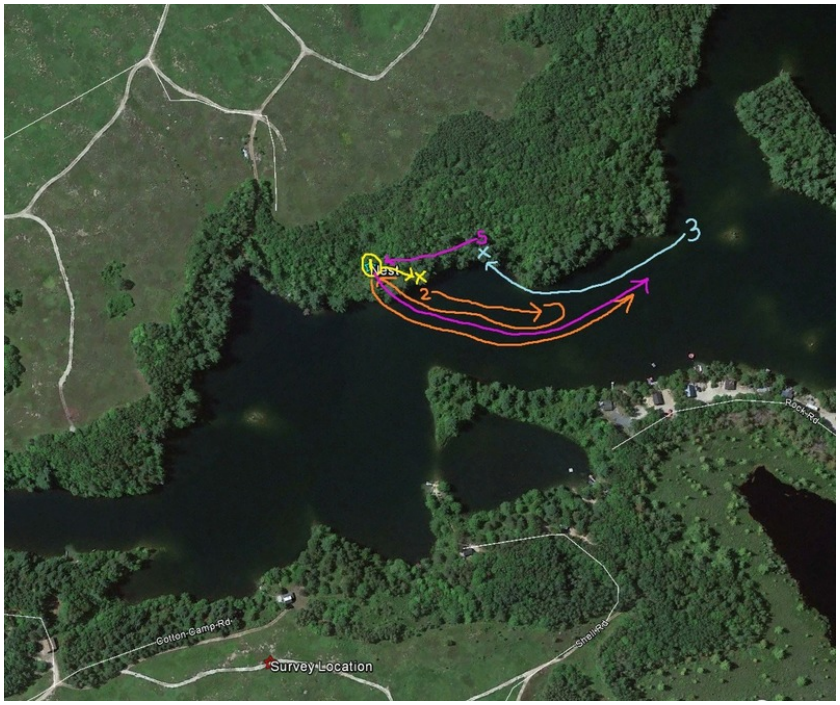


Weather during observation

Precipitation	3 - Rain

Bald Eagle, 5

Raptor Site	Schoodic Nest
Raptor Date	5/10/19
Species	Bald Eagle
Raptor observation number	5
Count of individuals in group	2
number of eagles observed	2
Time first observed	15:05
Time last observed	15:07
Duration of observation (minutes)	2
Duration within survey boundary	0
Age	Adult
Sex	Female, Male
Behavior	Flapping, Perching, Soaring
General Flight Direction	NW
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over lake

Notes	Rain turns to drizzle around 3pm and mate perched high in nearby tree visits nest. The two adults do a nest switch. Adult that has been sitting on nest entire time leaves nest and flies NW out over lake out of sight. Did not see this adult return before survey ended. Other adult sat on nest after a few mins on edge.
Map of Flight Path	

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	SE
Temperature (F)	46
Relative Humidity	93
Barametric Pressure (inches)	30.1
Cloud Cover (percent)	100
Visibility	6.4
Precipitation	2 - Drizzle

15:00

Time of weather observation	15:00
Wind Speed	3 - Gentle breeze
Wind Direction	SE
Temperature (F)	46
Relative Humidity	93
Barametric Pressure (inches)	30.1
Cloud Cover (percent)	100
Visibility	6.4
Precipitation	2 - Drizzle
Weather Comment	Update only to note rain turns to drizzle, finally letting up.

12:01

Time of observation	12:01
Describe observation	A gull flies by over lake heading SE.

15:05

Time of observation	15:05
Describe observation	Visited by two men in a dark blue truck working for Cherryfield Foods. Came to chat to see if okay and why here. Mentioned doing bird surveys in area. He knew there were nesting eagles there. The camp right here is his brother in law's and he has two other camps on lake. He asked what he can do to attract more eagles. Starting going off about wind and Apex, he brought up, not I. Kept things vauge. Very much opposes anything wind related and upset with doing away with so much hydro. Pleasant fellow otherwise.

Schoodic Nest, 2019-05-15

Created	2019-05-15 13:50:21 UTC by Karla Fortier
Updated	2020-02-05 19:04:23 UTC by Karla Fortier
Location	44.6954741, -67.8743215
Lead Observer	Karla Fortier
Survey Interval	May
Date	2019-05-15
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	09:45
Survey End Time	13:35
Duration of survey (minutes)	230
Count of eagles observed	7
Count of raptors observed	10
Survey Summary Comments	Both eagles active in nest today. Raw, chilly, windy day. Recent AM rain, passing drizzle surrounding area otherwise clear viewing. Survey ended a tiny bit early due to employee needing to leave to seek immediate medical attention.

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	N
Temperature (F)	40
Relative Humidity	85
Barametric Pressure (inches)	29.68
Cloud Cover (percent)	100
Visibility	8
Precipitation	0 - none
Weather Comment	Clear at survey location over lake & @nest; light fog towards east.

Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	5/15/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	09:45
Time last observed	12:26
Duration of observation (minutes)	161
Duration within survey boundary	240
Age	Adult
Sex	Unknown
Behavior	Perching
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A

Horizontal Position Code	@Nest
Notes	One adult BAEA on nest upon arrival. Second adult not around.
Map of Flight Path	
	

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	N
Temperature (F)	40
Visibility	8
Precipitation	0 - none

Kestrel, 2

Raptor Site	Schoodic Nest

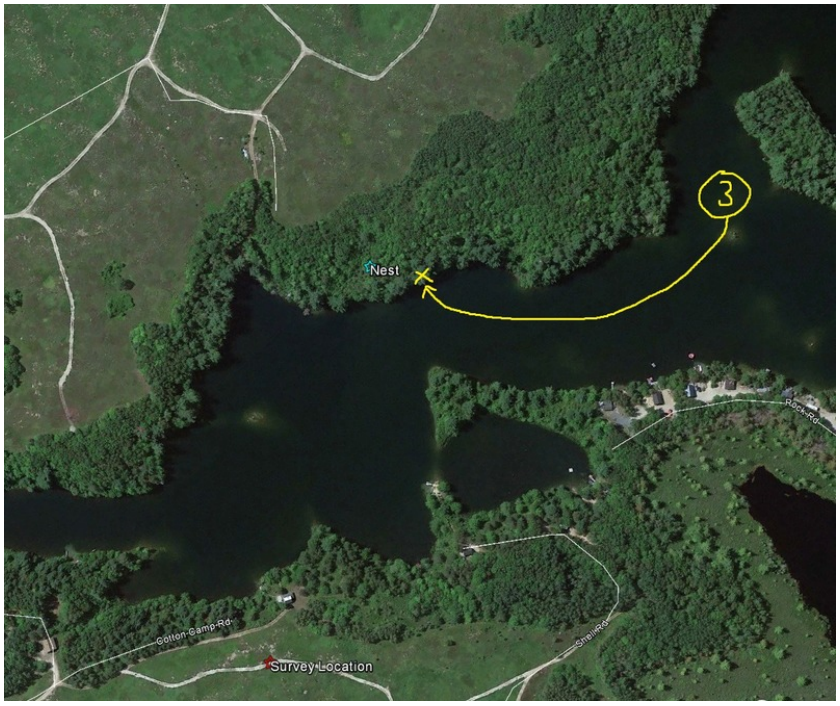
Raptor Date	5/15/19
Species	Kestrel
Raptor observation number	2
Count of individuals in group	1
Time first observed	10:05
Time last observed	10:07
Duration of observation (minutes)	2
Duration within survey boundary	2
Age	Adult
Sex	Male
Behavior	Flapping, Perching
General Flight Direction	E
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	D - flight path over a valley
Notes	Bird flies out of woods from west and lands on a rock, roadside to north of survey location approximately 300ft away towards lone tree in Blueberry field. Birds sits on ground for a few before taking off out of sight to the east low above fields and roads.
Map of Flight Path	

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	N
Temperature (F)	40
Cloud Cover (percent)	100

Visibility	8
Precipitation	0 - none

Bald Eagle, 3

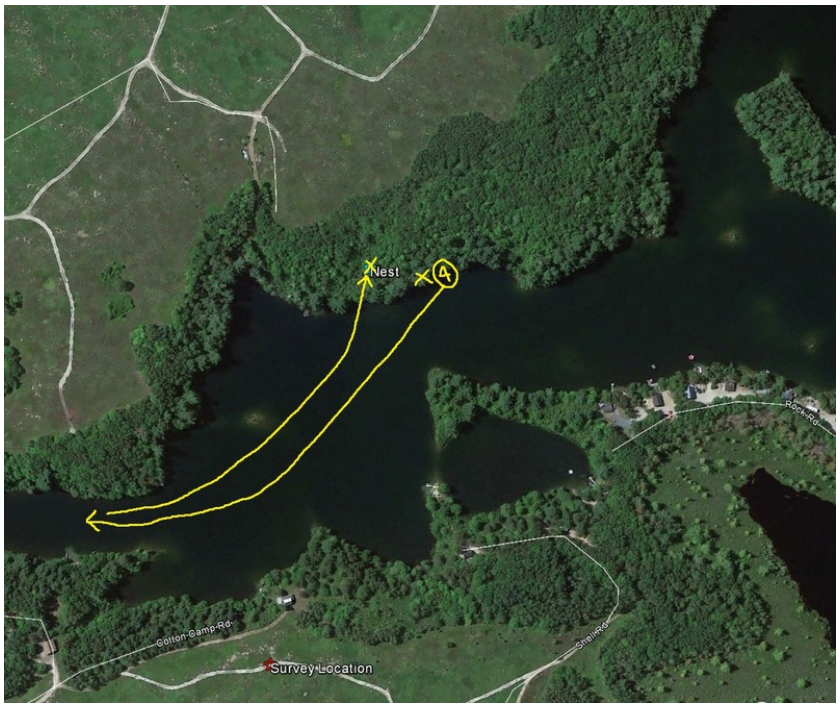
Raptor Site	Schoodic Nest
Raptor Date	5/15/19
Species	Bald Eagle
Raptor observation number	3
Count of individuals in group	1
number of eagles observed	1
Time first observed	10:22
Time last observed	11:25
Duration of observation (minutes)	63
Duration within survey boundary	203
Age	Adult
Sex	Unknown
Behavior	Flapping, Perching
General Flight Direction	SE
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over Lake
Notes	Mate arrives in area. Flies in from NW over lake and perches in nearby snag slightly north of nest along same shoreline. Other adult still in nest.
Map of Flight Path	

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	N

Temperature (F)	40
Cloud Cover (percent)	100
Visibility	8
Precipitation	2 - Drizzle

Bald Eagle, 4

Raptor Site	Schoodic Nest
Raptor Date	5/15/19
Species	Bald Eagle
Raptor observation number	4
Count of individuals in group	1
number of eagles observed	1
Time first observed	11:25
Time last observed	12:25
Duration of observation (minutes)	60
Duration within survey boundary	140
Age	Adult
Sex	Unknown
Behavior	Flapping, Hunting, Perching
General Flight Direction	SE to NW
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over lake
Notes	Adult leaves snag, flying over lake SE out of sight to southern cove for a few minutes. Adult returns to nest with fish and sits with mate.
Map of Flight Path	

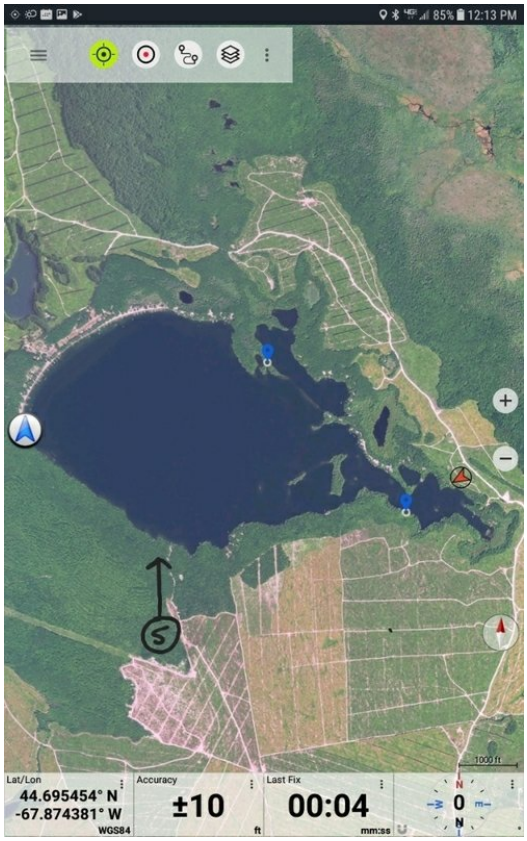
Weather during observation

Wind Speed	4 - Moderate breeze
Wind Direction	N
Cloud Cover (percent)	100
Visibility	8
Precipitation	0 - none

Turkey Vulture, 5

Raptor Site	Schoodic Nest
Raptor Date	5/15/19
Species	Turkey Vulture
Raptor observation number	5
Count of individuals in group	2
Time first observed	11:33
Time last observed	11:35
Duration of observation (minutes)	2
Duration within survey boundary	0
Age	Unknown
Sex	Unknown
Behavior	Soaring
General Flight Direction	N
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	D - flight path over a valley
Notes	Two TUVU far beyond lake to west, soaring skies above fields in distance headed north until out of sight behind trees in foreground.

Map of Flight Path



Weather during observation

Wind Speed	4 - Moderate breeze
Wind Direction	NNW
Temperature (F)	43
Relative Humidity	77
Barametric Pressure (inches)	29.68
Cloud Cover (percent)	100
Visibility	8
Precipitation	0 - none

Bald Eagle, 6

Raptor Site	Schoodic Nest
Raptor Date	5/15/19
Species	Bald Eagle
Raptor observation number	6
Count of individuals in group	2
number of eagles observed	2
Time first observed	12:25
Time last observed	12:26
Duration of observation (minutes)	1
Duration within survey boundary	0
Age	Adult
Sex	Female, Male

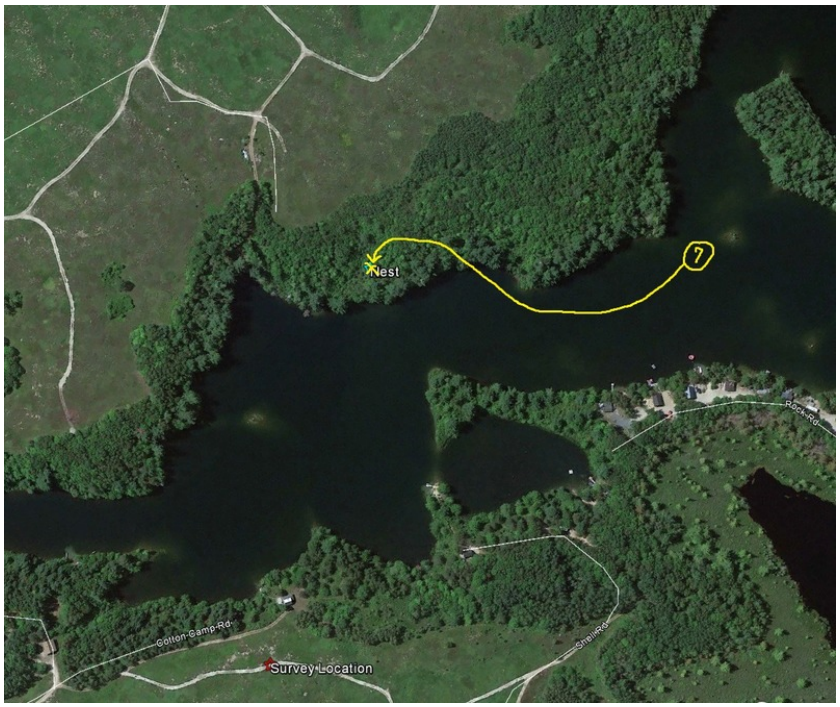
Behavior	Flapping, Perching, Soaring
General Flight Direction	NW
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over lake
Notes	Nest switch. Mate that brought fish, takes over incubating and original adult on nest (since arrival to survey location) leaves NW over lake out of sight.
Map of Flight Path	

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	NNW
Temperature (F)	43
Cloud Cover (percent)	100
Visibility	8
Precipitation	0 - none

Bald Eagle, 7

Raptor Site	Schoodic Nest
Raptor Date	5/15/19
Species	Bald Eagle
Raptor observation number	7
Count of individuals in group	1
number of eagles observed	1
Time first observed	12:44
Time last observed	12:54
Duration of observation (minutes)	10
Duration within survey boundary	0

Age	Adult
Sex	Unknown
Behavior	Flapping, Perching
General Flight Direction	SE
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over lake
Notes	Mate returns to nest over lake from NW direction. Swoops behind nest and accesses from SW side. Jumps up a couple branches from nest after initial landing.
Map of Flight Path	

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	NNW
Temperature (F)	44
Cloud Cover (percent)	100
Visibility	8
Precipitation	0 - none

Bald Eagle, 8

Raptor Site	Schoodic Nest
Raptor Date	5/15/19
Species	Bald Eagle
Raptor observation number	8
Count of individuals in group	1
number of eagles observed	1
Time first observed	12:54
Time last observed	13:35

Duration of observation (minutes)	41
Duration within survey boundary	0
Age	Adult
Sex	Unknown
Behavior	Flapping, Soaring
General Flight Direction	NW
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over lake
Notes	Adult that was perched in branches just above nest leaves area again. Flies NW over lake out of sight. Mate continues to incubate. The adult that leaves is not seen again for duration of survey period.
Map of Flight Path	

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	NNW
Temperature (F)	44
Cloud Cover (percent)	100
Visibility	8
Precipitation	0 - none

10:20

Time of weather observation	10:20
Wind Speed	3 - Gentle breeze
Wind Direction	N
Temperature (F)	40
Cloud Cover (percent)	100
Visibility	8

Precipitation	2 - Drizzle
Weather Comment	Update only to note drizzle begins. Lasts maybe 15 mins.

10:30

Time of observation	10:30
Describe observation	Swallows, Robin's & Blue Jays around.

11:05

Time of observation	11:05
Describe observation	One adult common loon flies over lake from SE to NW out of sight.

12:31

Time of observation	12:31
Describe observation	One male and one female Common Merganser preening out on shallows, rock pile on lake.

Schoodic Nest, 2019-05-21

Created	2019-05-21 12:47:19 UTC by Randi Jackson
Updated	2019-12-17 17:57:31 UTC by Meg Stevenson
Location	44.6954892297, -67.8743738495
Lead Observer	Randi Jackson
Survey Interval	May
Date	2019-05-21
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	08:02
Survey End Time	12:04
Duration of survey (minutes)	242
Count of eagles observed	6
Count of raptors observed	15

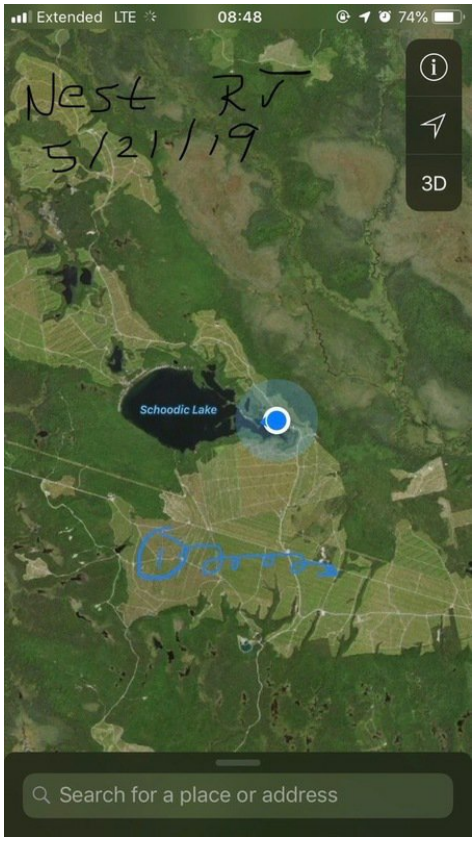
Weather Summary

Wind Speed	6 - Strong breeze
Wind Direction	W
Temperature (F)	56
Relative Humidity	67
Barametric Pressure (inches)	29.59
Cloud Cover (percent)	95
Visibility	Unlimited
Precipitation	0 - none

Turkey Vulture, 1

Raptor Site	AD-10
Raptor Date	5/21/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	3
Time first observed	08:29
Time last observed	08:32
Duration of observation (minutes)	3
Age	Unknown
Sex	Unknown
Behavior	Circling
General Flight Direction	E
Flight Height	2 - within rotor swept area
Horizontal Position Code	A1 - Over ridge, parallel
Notes	Spotted three TUVU circling together in the south. All three circled together making their way east out of site.

Map of Flight Path



Bald Eagle, 2

Raptor Site	AD-10
Raptor Date	5/21/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1
number of eagles observed	1
Time first observed	08:34
Time last observed	12:04
Duration of observation (minutes)	210
Duration within survey boundary	210
Age	Adult
Sex	Female
Behavior	Flapping, Gliding, Perching
General Flight Direction	S
Flight Height	1 - below rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	First spotted the female BAEA flying low over the lake coming in from the narrow channel in the east. The eagle glided low over the lake heading south towards the nest where she then flew up to and landed on a branch in the tree. She perched for a few minutes then hoped over and sat on the nest at 8:37. Female remained on the nest for the rest of the survey duration.

Map of Flight Path



Bald Eagle, 3

Raptor Site	AD-10
Raptor Date	5/21/19
Species	Bald Eagle
Raptor observation number	3
Count of individuals in group	1
number of eagles observed	1
Time first observed	08:51
Time last observed	08:53
Duration of observation (minutes)	2
Duration within survey boundary	2
Age	Adult
Sex	Unknown
Behavior	Gliding, Flapping
General Flight Direction	E
Flight Height	2 - within rotor swept area
Horizontal Position Code	A1 - Over ridge, parallel
Notes	First spotted the BAEA in the south gliding making its way east. Lost site of the individual in the east.

Map of Flight Path



Bald Eagle, 4

Raptor Site	Schoodic Nest
Raptor Date	5/21/19
Species	Bald Eagle
Raptor observation number	4
Count of individuals in group	1
number of eagles observed	1
Time first observed	09:02
Time last observed	09:31
Duration of observation (minutes)	29
Duration within survey boundary	29
Age	Adult
Sex	Male
Behavior	Flapping, Perching, Gliding
General Flight Direction	S
Flight Height	2 - within rotor swept area, 1 - below rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	First spotted a male BAEA flying in from the south heading north. Once closer and over the lake I noticed the individual had a rodent in its talon. The individual made a lap around the northern to eastern edge of the lake then continued to fly over the lake and land in the nest tree. The male then looked to be feeding fledglings in nest (hard to see from this distance clearly). The male then took off from the nest at 9:22 and flapped, glided, and circled its way around the lake numerous times. At 9:30 the male began gliding making its way south over the tree line and out of site.

Map of Flight Path



Turkey Vulture, 5

Raptor Site	AD-10
Raptor Date	5/21/19
Species	Turkey Vulture
Raptor observation number	5
Count of individuals in group	1
Time first observed	09:36
Time last observed	09:37
Duration of observation (minutes)	1
Age	Unknown
Sex	Unknown
Behavior	Gliding
General Flight Direction	SW
Flight Height	2 - within rotor swept area
Horizontal Position Code	A1 - Over ridge, parallel
Notes	First spotted gliding in from the south east. Continued gliding making its way south west.

Map of Flight Path



Bald Eagle, 6

Raptor Site	AD-10
Raptor Date	5/21/19
Species	Bald Eagle
Raptor observation number	6
Count of individuals in group	1
number of eagles observed	1
Time first observed	09:38
Time last observed	09:42
Duration of observation (minutes)	4
Duration within survey boundary	4
Age	Adult
Sex	Unknown
Behavior	Flapping, Gliding, Circling
General Flight Direction	NE
Flight Height	4 - No predominant height
Horizontal Position Code	A2 - Over ridge, perpendicular
Notes	First spotted gliding in from the west. Circled flapped and glided over the fields to the north of the lake for a few minutes. Then took off and continued gliding north east out of site.

Map of Flight Path



Turkey Vulture, 7

Raptor Site	AD-10
Raptor Date	5/21/19
Species	Turkey Vulture
Raptor observation number	7
Count of individuals in group	2
Time first observed	09:44
Time last observed	09:45
Duration of observation (minutes)	1
Age	Adult
Sex	Unknown
Behavior	Gliding
General Flight Direction	S
Flight Height	1 - below rotor swept area
Horizontal Position Code	A3 - Over ridge, saddle
Notes	First spotted gliding in from the west low over the tree line. Continued gliding south over the tree line and out of site.

Map of Flight Path



Turkey Vulture, 8

Raptor Site	AD-10
Raptor Date	5/21/19
Species	Turkey Vulture
Raptor observation number	8
Count of individuals in group	2
Time first observed	09:59
Time last observed	10:01
Duration of observation (minutes)	2
Duration within survey boundary	2
Age	Unknown
Sex	Unknown
Behavior	Circling
General Flight Direction	N
Flight Height	1 - below rotor swept area
Horizontal Position Code	A3 - Over ridge, saddle
Notes	First spotted circling in the north. Circled for a few minutes heading north over the tree line and out of site.

Map of Flight Path



Broad-winged Hawk, 9

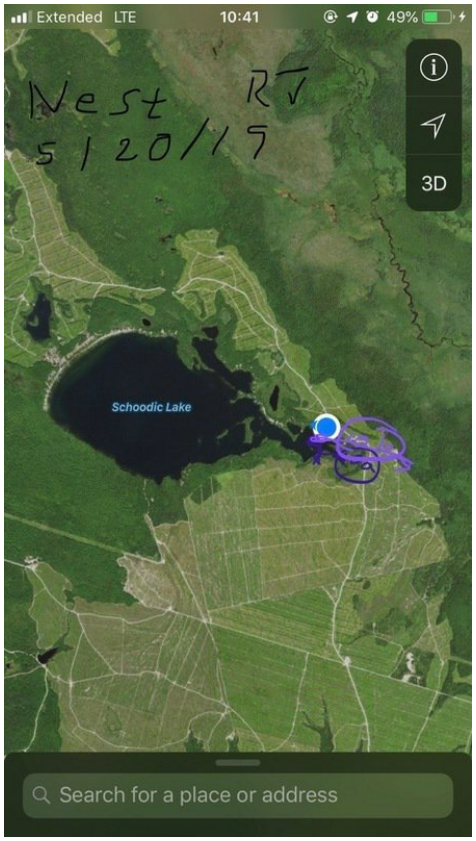
Raptor Site	AD-10
Raptor Date	5/21/19
Species	Broad-winged Hawk
Raptor observation number	9
Count of individuals in group	1
Time first observed	10:04
Time last observed	10:05
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Juvenile
Sex	Unknown
Behavior	Gliding
General Flight Direction	NE
Flight Height	1 - below rotor swept area
Horizontal Position Code	A3 - Over ridge, saddle
Notes	First spotted gliding in from the east heading west. Turned and continued gliding north east.

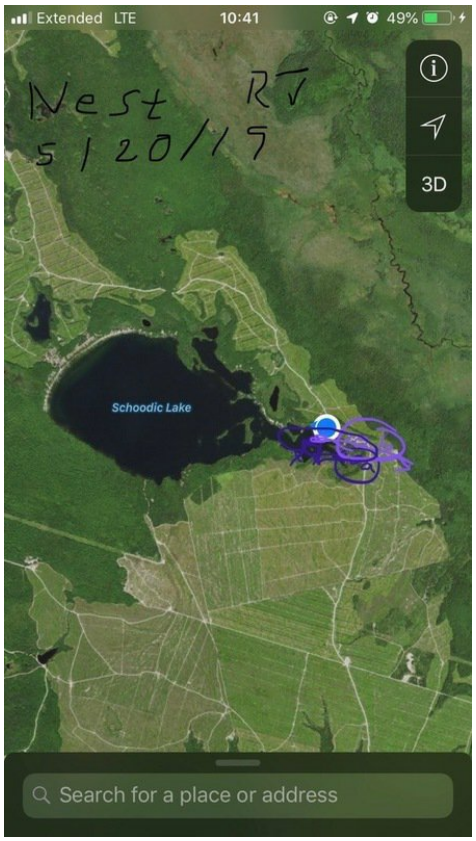
Map of Flight Path

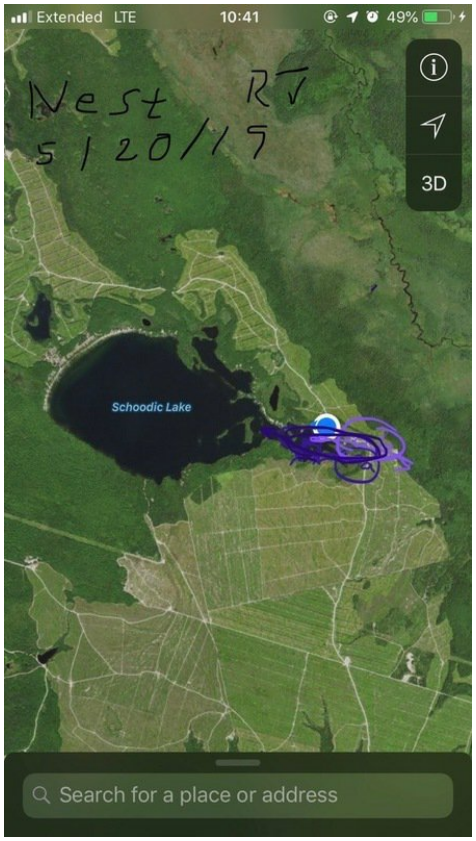


Bald Eagle, 10

Raptor Site	AD-10
Raptor Date	5/21/19
Species	Bald Eagle
Raptor observation number	10
Count of individuals in group	2
number of eagles observed	2
Time first observed	10:08
Time last observed	12:59
Duration of observation (minutes)	171
Duration within survey boundary	171
Age	Adult
Sex	Male, Unknown
Behavior	Flapping, Circling, Gliding
General Flight Direction	W
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley

Notes	First spotted the male BAEA (10a) flying in from the eastern narrows of the lake. The male then landed in a tree along the south eastern side of the lake. Around 10:12 another adult BAEA (10b) flew in from the east over the lake. The male bald eagle flew out of the tree and locked talons with the second eagle. They fought with each other for about a minute until the second bald eagle took off and glided back east. The male then landed in the same tree as before and perched. At 10:44 the perching male then took off low over the lake and landed on a log in the water. The male then flew low over the lake and pulled a fish out of the water and flew up to the nest tree with it. The male and female are both tending to the fledgeling. At 11:20 the male took off out of the nest tree and made a lap around the lake. The male then landed in the same tree it was originally perching in on the south east side of the lake. At 11:37 the male then took off over the lake and landed in the nest tree and perched. The male took off at 11:56 and made a few laps around the lake before taking off heading west over the lake out of site.
Map of Flight Path	


Extended LTE
10:41
49%
Nest
5/20/19
RV
3D
Schoodic Lake
Search for a place or address


Extended LTE
10:41
49%
Nest
5/20/19
RV
3D
Schoodic Lake
Search for a place or address

Schoodic Nest, 2019-05-31

Created	2019-05-31 10:20:41 UTC by Meg Stevenson
Updated	2019-12-19 21:15:53 UTC by Meg Stevenson
Location	44.6954396088, -67.8743124102
Lead Observer	Meg Dood
Survey Interval	May
Date	2019-05-31
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	06:20
Survey End Time	10:20
Duration of survey (minutes)	240
Count of eagles observed	2
Count of raptors observed	2

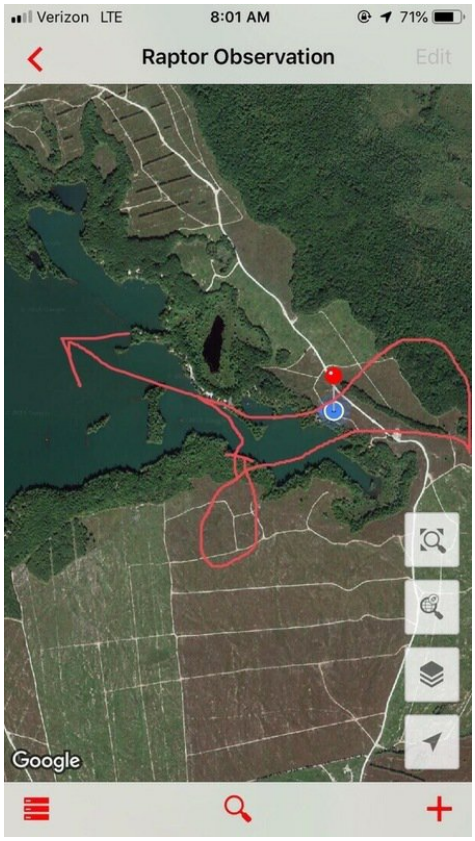
Weather Summary

Wind Speed	0 - Calm
Visibility	2km
Precipitation	1 - Haze or Fog
Weather Comment	Nest visible

Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	5/31/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	08:00
Time last observed	08:18
Duration of observation (minutes)	18
Duration within survey boundary	18
Age	Adult
Sex	Unknown
Behavior	Flapping, Perching
General Flight Direction	NW
Flight Height	1 - below rotor swept area, 2 - within rotor swept area
Notes	One BAEA flew up from west and perched on tree. 8:14 two crows fly toward eagle, eagle chases them off to NE, loops back flapping to the NW and down the lake out of site. Flys at or below tree height over lake, approx 100-50 ft over ground

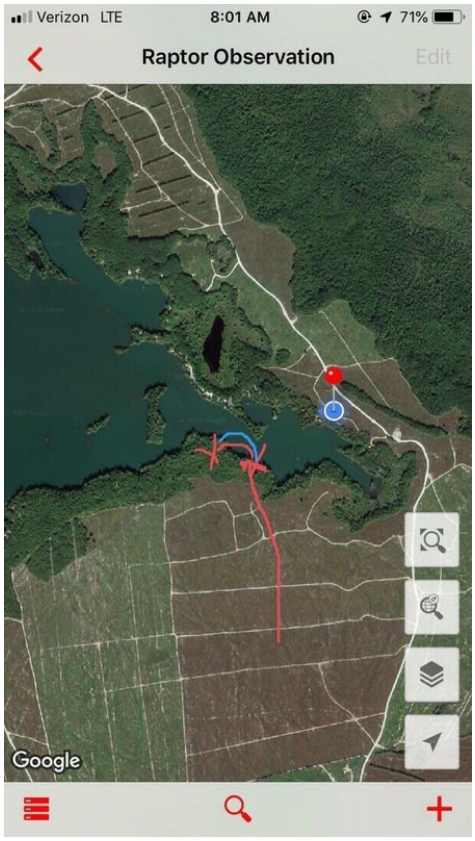
Map of Flight Path



Bald Eagle, 2

Raptor Site	Schoodic Nest
Raptor Date	5/31/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1
number of eagles observed	1
Time first observed	09:05
Time last observed	10:20
Duration of observation (minutes)	75
Duration within survey boundary	75
Age	Adult
Sex	Unknown
Behavior	Flapping, On Nest
General Flight Direction	N
Flight Height	1 - below rotor swept area
Notes	One individual flys into nest, feeds chick. At least one chick visible, able to stand, grey down. Adult perches in tree 8:21. Flys down out of site for moment, returns to nest to feed chick 9:30. Stays in nest

Map of Flight Path



08:04

Time of weather observation	08:04
Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	50
Relative Humidity	100
Barametric Pressure (inches)	29.72
Cloud Cover (percent)	100
Visibility	5km
Precipitation	1 - Haze or Fog

08:37

Time of weather observation	08:37
Wind Speed	2 - Light breeze
Wind Direction	NW
Temperature (F)	50
Relative Humidity	100
Barametric Pressure (inches)	29.72
Cloud Cover (percent)	100
Visibility	10km
Precipitation	0 - none
Weather Comment	Fog lifts

09:36

Time of weather observation	09:36
Wind Speed	2 - Light breeze
Wind Direction	NW
Temperature (F)	50
Relative Humidity	100
Barametric Pressure (inches)	29.72
Cloud Cover (percent)	80
Visibility	10km
Precipitation	0 - none

09:57

Time of weather observation	09:57
Wind Speed	4 - Moderate breeze
Wind Direction	NW
Temperature (F)	50
Relative Humidity	100
Barametric Pressure (inches)	29.72
Cloud Cover (percent)	30
Visibility	10km
Precipitation	0 - none
Weather Comment	Gusting wind

08:53

Time of observation	08:53
Describe observation	CHSP EAPH HETH YEWA AMCO BRTH CSWA YRWA

Schoodic Nest, 2019-06-05

Created	2019-06-05 17:36:19 UTC by Karla Fortier
Updated	2020-02-05 19:16:37 UTC by Karla Fortier
Location	44.6954644, -67.8743507
Lead Observer	Karla Fortier
Survey Interval	June
Date	2019-06-05
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	13:20
Survey End Time	17:20
Duration of survey (minutes)	240
Count of eagles observed	5
Count of raptors observed	5
Survey Summary Comments	Gorgeous afternoon & evening. Wind kicks up around 5pm. Only one adult in area during entire survey period. 90% sure, two chicks approximately 5-6weeks old in nest. Based on color of body and wing span when stretching/preening.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SW
Temperature (F)	67
Relative Humidity	52
Barametric Pressure (inches)	29.81
Cloud Cover (percent)	30
Visibility	16
Precipitation	0 - none
Weather Comment	Clear, sunny, plenty of blue skies.

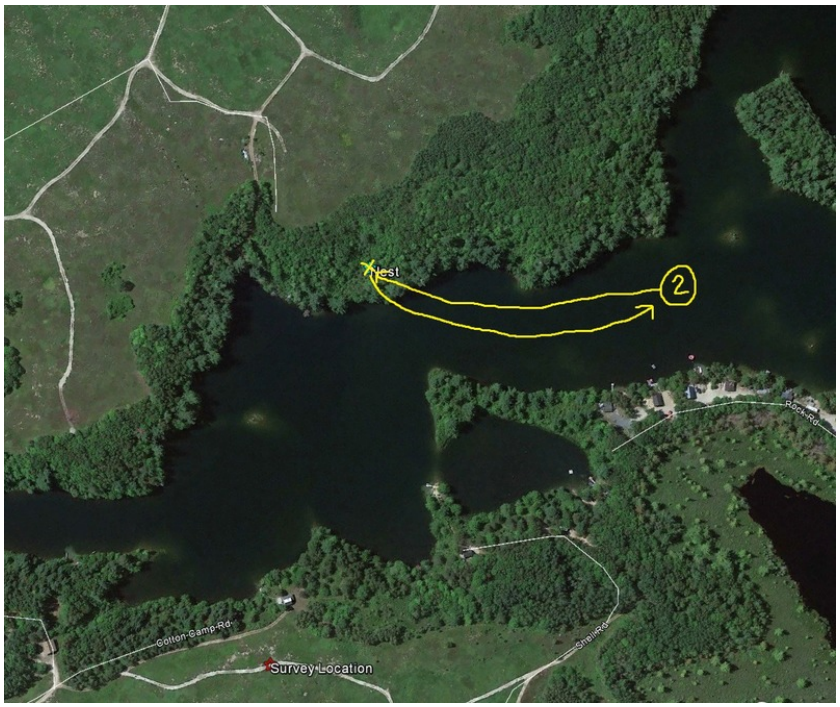
Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	6/5/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	13:20
Time last observed	17:20
Duration of observation (minutes)	240
Duration within survey boundary	0
Age	Juvenile
Sex	Unknown
Behavior	Sitting on nest
General Flight Direction	N/A
Flight Height	0 - outside of turbine array area

Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over Lake
Notes	One confirmed juvenile BAEA, maybe a second one but hard to tell. The first appears to be dark not a lot of down, maybe 5 weeks old. Lots of movement in nest, active. No adults in area.
Map of Flight Path	 

Bald Eagle, 2

Raptor Site	Schoodic Nest
Raptor Date	6/5/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1

number of eagles observed	1
Time first observed	13:50
Time last observed	15:27
Duration of observation (minutes)	97
Duration within survey boundary	0
Age	Adult
Sex	Unknown
Behavior	Flapping, Perching, Soaring
General Flight Direction	SE
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over lake
Notes	Adult comes in over lake from NW. Brings a fish to nest. Sits for a while before taking off NW back down lake.
Map of Flight Path	

Bald Eagle, 3

Raptor Site	Schoodic Nest
Raptor Date	6/5/19
Species	Bald Eagle
Raptor observation number	3
Count of individuals in group	2
number of eagles observed	2
Time first observed	16:55
Time last observed	17:20
Duration of observation (minutes)	25
Duration within survey boundary	0
Age	Juvenile

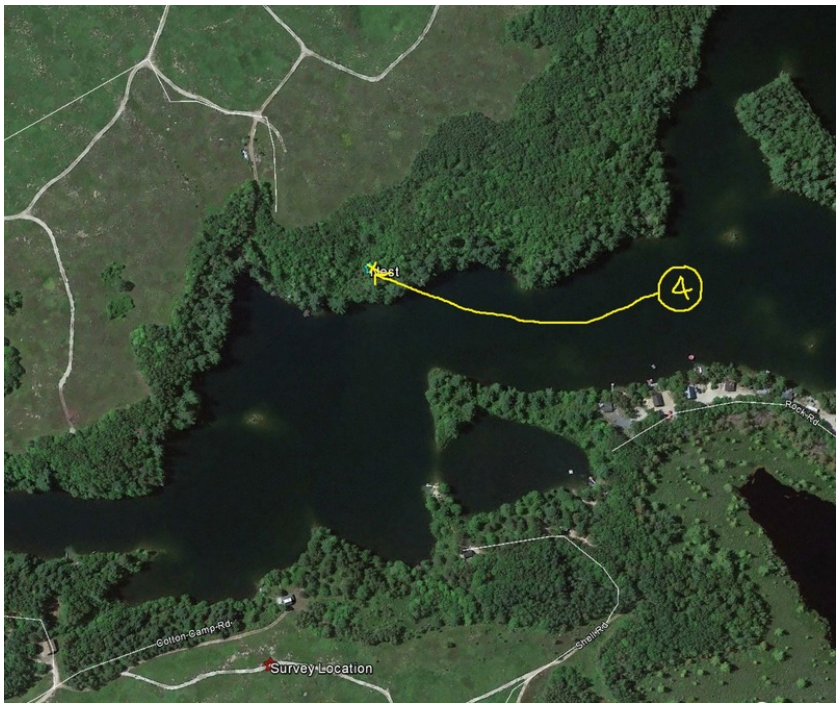
Sex	Unknown
Behavior	Flapping, Perching
General Flight Direction	N/A
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	In Nest
Notes	Big gusts of wind kicks up. One chick moves and opens/flaps wings a few times. Looked like it was about to blow off nest. A second body seems to be in nest as well, moved over just enough, still hard to see, but opens wings up as well and flaps a couple times while wind blows. 90% sure there are two chicks in nest. ~5-6weeks old based on color and size of wing span.
Map of Flight Path	

Weather during observation

Wind Speed	4 - Moderate breeze
Wind Direction	SW
Temperature (F)	65
Relative Humidity	40
Barametric Pressure (inches)	29.68
Cloud Cover (percent)	30
Visibility	16
Precipitation	0 - none

Bald Eagle, 4

Raptor Site	Schoodic Nest
Raptor Date	6/5/19
Species	Bald Eagle
Raptor observation number	4
Count of individuals in group	1

number of eagles observed	1
Time first observed	17:08
Time last observed	17:20
Duration of observation (minutes)	12
Duration within survey boundary	0
Age	Adult
Sex	Unknown
Behavior	Flapping, Perching
General Flight Direction	SE
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over Lake, on Nest
Notes	One adult returns to nest from NW direction over lake, no fish this time. Sits on edge of nest through end of survey, still there upon departure.
Map of Flight Path	

Weather during observation

Wind Speed	4 - Moderate breeze
Wind Direction	SW
Temperature (F)	65
Relative Humidity	40
Barametric Pressure (inches)	29.68
Cloud Cover (percent)	30
Visibility	16
Precipitation	0 - none

17:00

Time of weather observation	17:00

Wind Speed	4 - Moderate breeze
Wind Direction	SW
Temperature (F)	65
Relative Humidity	40
Barametric Pressure (inches)	29.68
Cloud Cover (percent)	30
Visibility	16
Precipitation	0 - none
Weather Comment	Update to note wind kicks up a lot.

Schoodic Nest, 2019-06-12

Created	2019-06-12 10:53:52 UTC by Karla Fortier
Updated	2020-02-05 19:29:12 UTC by Karla Fortier
Location	44.6954418, -67.8743913
Lead Observer	Karla Fortier
Survey Interval	June
Date	2019-06-12
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	06:00
Survey End Time	10:00
Duration of survey (minutes)	240
Count of eagles observed	6
Count of raptors observed	6
Survey Summary Comments	Clear, crisp AM. Constant wind to keep black flies off. Two juvinile BAEAs in nest confirmed. Only one adult in & out/around at a time during survey period.

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	50
Relative Humidity	77
Barametric Pressure (inches)	30.04
Cloud Cover (percent)	0
Visibility	16+
Precipitation	0 - none
Weather Comment	Beautiful morning.

Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	6/12/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	2
number of eagles observed	2
Time first observed	06:00
Time last observed	10:00
Duration of observation (minutes)	240
Duration within survey boundary	0
Age	Juvenile, Adult
Sex	Unknown
Behavior	Perching
General Flight Direction	N/A
Flight Height	0 - outside of turbine array area

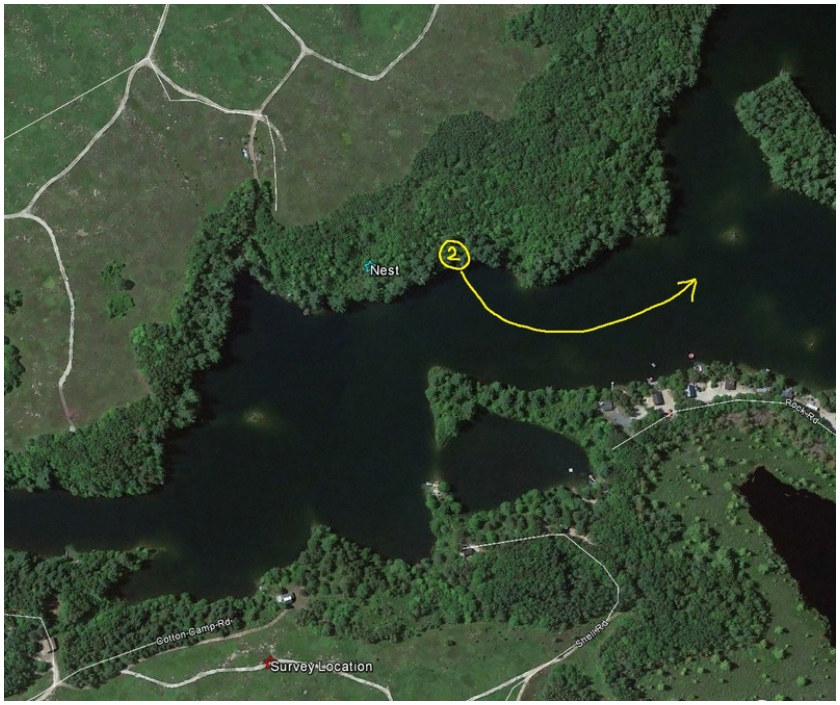
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	On nest & over lake
Notes	Upon arrival at least one chick confirmed in nest. Shadows make it difficult to see alot of detail in nest this AM. One adult nearby in treetop slightly NW of nest ~200ft away along shoreline.
Map of Flight Path	 

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	50
Relative Humidity	77
Barametric Pressure (inches)	30.04

Cloud Cover (percent)	0
Visibility	16+
Precipitation	0 - none

Bald Eagle, 2

Raptor Site	Schoodic Nest
Raptor Date	6/12/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1
number of eagles observed	1
Time first observed	07:19
Time last observed	07:20
Duration of observation (minutes)	1
Duration within survey boundary	0
Age	Adult
Sex	Unknown
Behavior	Flapping, Soaring
General Flight Direction	NW
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over lake
Notes	Adult takes off from tree perch NW over lake and away.
Map of Flight Path	

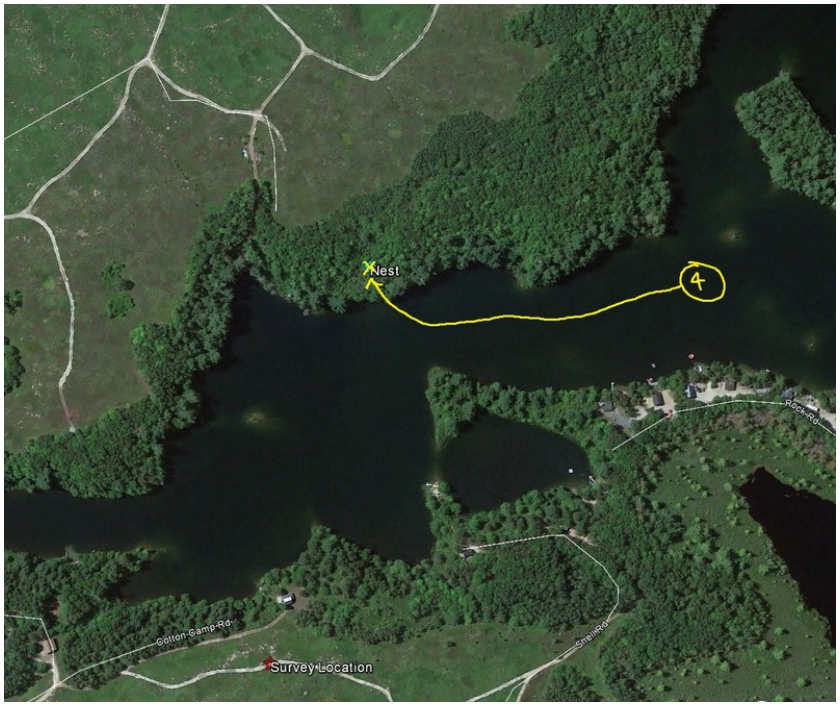
Bald Eagle, 3

Raptor Site	Schoodic Nest
Raptor Date	6/12/19

Species	Bald Eagle
Raptor observation number	3
Count of individuals in group	2
number of eagles observed	2
Time first observed	07:30
Time last observed	10:00
Duration of observation (minutes)	150
Duration within survey boundary	0
Age	Juvenile
Sex	Unknown
Behavior	Flapping, Perching
General Flight Direction	None
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	In nest
Notes	Update to note two juvenile BAEAs confirmed in nest. Both sit up on opposite ends of nest, opening wings, flapping a couple times. Both sit perched on edges of nest.
Map of Flight Path	

Bald Eagle, 4

Raptor Site	Schoodic Nest
Raptor Date	6/12/19
Species	Bald Eagle
Raptor observation number	4
Count of individuals in group	1
number of eagles observed	1
Time first observed	08:43
Time last observed	10:00

Duration of observation (minutes)	77
Duration within survey boundary	0
Age	Adult
Sex	Unknown
Behavior	Flapping, Perching
General Flight Direction	SE
Flight Height	0 - outside of turbine array area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Over lake
Notes	One adult returns to area, flies into nest with fish. Perches, sits on edge of nest. Adult was still there upon survey end/departure.
Map of Flight Path	

07:35

Time of observation	07:35
Describe observation	Tractor passes by grating road headed north.

Schoodic Nest, 2019-06-20

Created	2019-06-20 15:48:43 UTC by Randi Jackson
Updated	2019-09-16 17:12:27 UTC by Randi Jackson
Location	44.6954189893, -67.8743412439
Lead Observer	Randi Jackson
Survey Interval	June
Date	2019-06-20
Survey Site	Schoodic Nest

Survey Overview

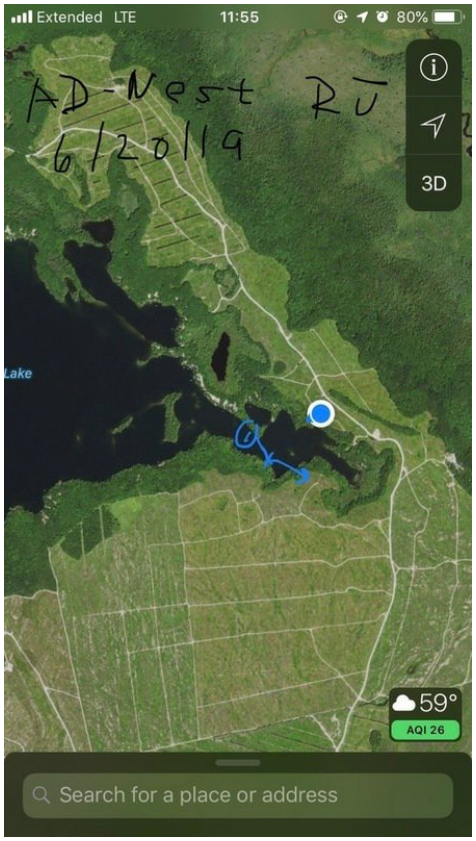
Survey Start Time	11:32
Survey End Time	15:33
Duration of survey (minutes)	241
Count of eagles observed	2
Count of raptors observed	3
Survey Summary Comments	Two juveniles observed sitting on the nest during the entire survey. Both moved periodically around the nest throughout the survey.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	E
Temperature (F)	58
Relative Humidity	96
Barametric Pressure (inches)	29.85
Cloud Cover (percent)	100
Visibility	5km
Precipitation	1 - Haze or Fog

Bald Eagle, 1

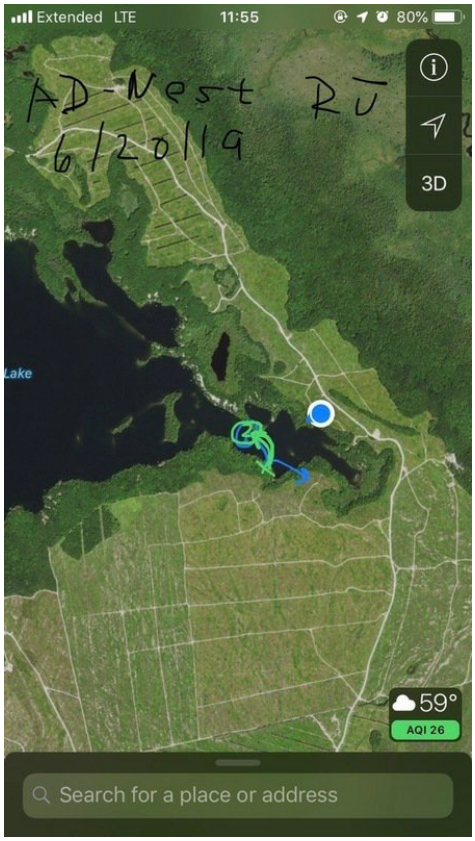
Raptor Site	Schoodic Nest
Raptor Date	6/20/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	11:36
Time last observed	11:42
Duration of observation (minutes)	6
Duration within survey boundary	6
Age	Adult
Sex	Female
Behavior	Flapping, Perching
General Flight Direction	W
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley

Notes	Spotted flying in from the south west side of the lake. Landed on the nest and fed the chicks. Took off after a minute and flew east over the lake out of site.
Map of Flight Path	

Bald Eagle, 2

Raptor Site	Schoodic Nest
Raptor Date	6/20/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1
number of eagles observed	1
Time first observed	12:18
Time last observed	12:22
Duration of observation (minutes)	4
Duration within survey boundary	4
Age	Adult
Sex	Female
Behavior	Flapping, Gliding
General Flight Direction	W
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Flew in from the western side of the lake and landed on the nest. Hung out on the nest for a few minutes then took off flying west. *Confirmed two chicks in the nest.

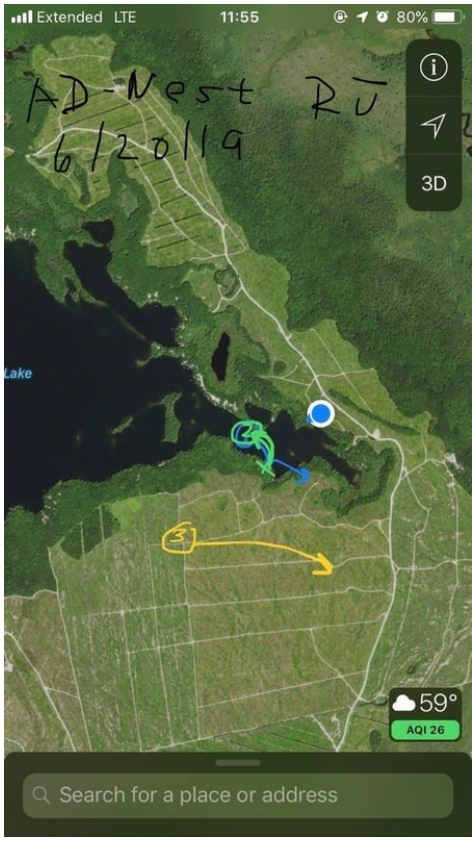
Map of Flight Path



Turkey Vulture, 3

Raptor Site	Schoodic Nest
Raptor Date	6/20/19
Species	Turkey Vulture
Raptor observation number	3
Count of individuals in group	1
Time first observed	13:52
Time last observed	13:55
Duration of observation (minutes)	3
Duration within survey boundary	3
Age	Unknown
Sex	Unknown
Behavior	Soaring
General Flight Direction	E
Flight Height	2 - within rotor swept area
Notes	Spotted in the south over the blueberry fields gliding east.

Map of Flight Path



Schoodic Nest, 2019-06-26

Created	2019-06-26 13:16:55 UTC by Randi Jackson
Updated	2019-08-05 16:26:44 UTC by Meg Stevenson
Location	44.6954871761, -67.8743313533
Lead Observer	Randi Jackson
Survey Interval	June
Date	2019-06-26
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	07:02
Survey End Time	11:07
Duration of survey (minutes)	245
Count of eagles observed	1
Count of raptors observed	1

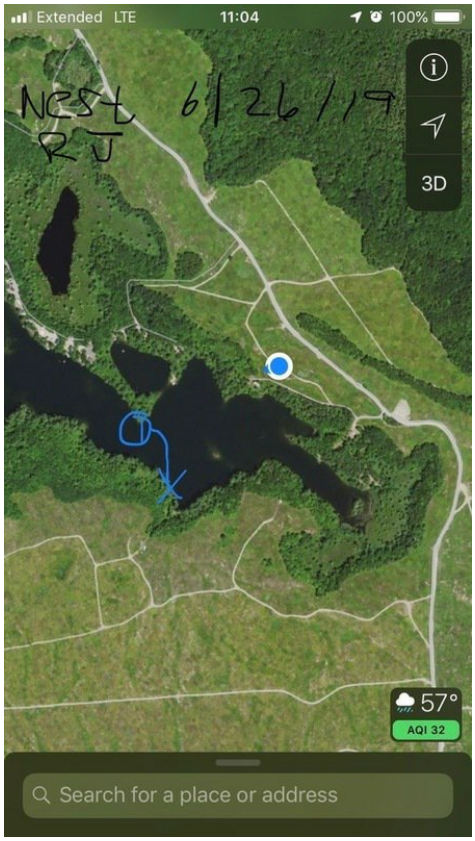
Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	E
Temperature (F)	55
Relative Humidity	96
Barametric Pressure (inches)	29.85
Cloud Cover (percent)	100
Visibility	Limited
Precipitation	3 - Rain

Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	6/26/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	10:47
Time last observed	11:05
Duration of observation (minutes)	18
Duration within survey boundary	18
Age	Adult
Sex	Female
Behavior	Flapping, Nesting
General Flight Direction	S
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Spotted flying in from the western side of the lake. Flew in and perched on the nest for the rest of the survey duration.

Map of Flight Path



Schoodic Nest, 2019-07-03

Created	2019-07-03 12:08:09 UTC by Randi Jackson
Updated	2020-01-02 15:53:15 UTC by Randi Jackson
Location	44.6954757767, -67.8743711673
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-03
Survey Site	Schoodic Nest

Survey Overview

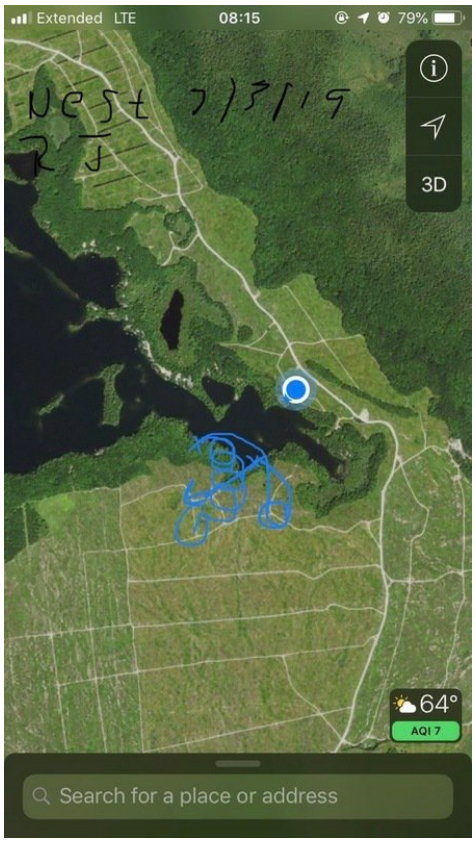
Survey Start Time	06:56
Survey End Time	10:56
Duration of survey (minutes)	240
Count of eagles observed	2
Count of raptors observed	7

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	E
Temperature (F)	71
Relative Humidity	66
Barametric Pressure (inches)	29.85
Cloud Cover (percent)	25
Visibility	Unlimited
Precipitation	0 - none

Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	7/3/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	07:46
Time last observed	08:18
Duration of observation (minutes)	32
Duration within survey boundary	32
Age	Adult
Sex	Female
Behavior	Circling, Flapping, Gliding, Perching
General Flight Direction	S
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley

Notes	Initially spotted circling in the south heading north. Landed in the top of a tree on the edge of the lake near the nest. Perched until 8:08 when it took off to deter ravens away from the nest. Chased the ravens for a minute in the south then flew back and landed in another tree on the edge of the lake and perched. Left the tree at 8:18 and flew south out of sight.
Map of Flight Path	

Turkey Vulture, 2

Raptor Site	Schoodic Nest
Raptor Date	7/3/19
Species	Turkey Vulture
Raptor observation number	2
Count of individuals in group	2
Time first observed	09:12
Time last observed	09:21
Duration of observation (minutes)	9
Duration within survey boundary	9
Age	Adult, Unknown
Sex	Unknown
Behavior	Circling, Gliding
General Flight Direction	N
Flight Height	3 - above rotor swept area, 2 - within rotor swept area
Horizontal Position Code	A2 - Over ridge, perpendicular

Notes	Two individuals spotted circling in the south. Ascended high up while circling. Lost one of the individuals while circling high up. The second individual continued circling for a few minutes then began gliding north while descending. Circled a few minutes in the north then continued gliding north.
Map of Flight Path	

Turkey Vulture, 3

Raptor Site	Schoodic Nest
Raptor Date	7/3/19
Species	Turkey Vulture
Raptor observation number	3
Count of individuals in group	3
Time first observed	10:07
Time last observed	10:11
Duration of observation (minutes)	4
Duration within survey boundary	4
Age	Adult
Sex	Unknown
Behavior	Gliding, Circling
General Flight Direction	S
Flight Height	2 - within rotor swept area
Horizontal Position Code	A2 - Over ridge, perpendicular
Notes	Initially spotted gliding in together from the north. Circled a few times over the eastern branch of the lake then all three took off gliding south.

Map of Flight Path



Bald Eagle, 4

Raptor Site	Schoodic Nest
Raptor Date	7/3/19
Species	Bald Eagle
Raptor observation number	4
Count of individuals in group	1
number of eagles observed	1
Time first observed	10:12
Time last observed	10:54
Duration of observation (minutes)	42
Duration within survey boundary	42
Age	Adult
Sex	Female
Behavior	Flapping, Perching
General Flight Direction	W
Flight Height	1 - below rotor swept area
Notes	First spotted flying in from the eastern branch of the lake. Landed in a tree on the eastern edge of the lake. Took off from the tree at 10:54 and flew west over the lake out of sight.

Map of Flight Path



Schoodic Nest, 2019-07-10

Created	2019-07-10 14:16:58 UTC by Randi Jackson
Updated	2019-09-16 17:04:34 UTC by Randi Jackson
Location	44.6955046524, -67.8744520527
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-10
Survey Site	Schoodic Nest

Survey Overview

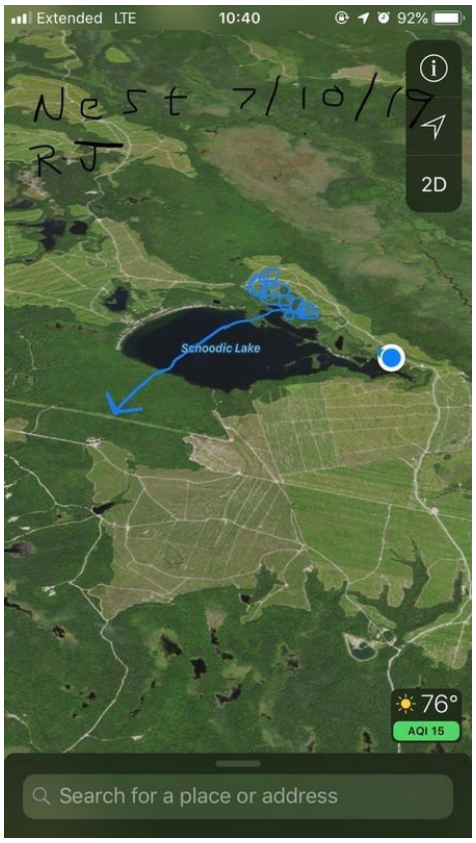
Survey Start Time	10:00
Survey End Time	14:01
Duration of survey (minutes)	241
Count of eagles observed	1
Count of raptors observed	1
Survey Summary Comments	Two juveniles observed in the nest sitting on the edge overlooking the lake. Calling throughout the survey.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	N
Temperature (F)	77
Relative Humidity	53
Barametric Pressure (inches)	30.04
Cloud Cover (percent)	25
Visibility	Unlimited
Precipitation	0 - none

Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	7/10/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	10:28
Time last observed	10:39
Duration of observation (minutes)	11
Duration within survey boundary	11
Age	Adult
Sex	Unknown
Behavior	Circling, Gliding
General Flight Direction	SW
Flight Height	2 - within rotor swept area, 3 - above rotor swept area
Horizontal Position Code	D - flight path over a valley

Notes	Spotted circling in the north over a field. Circled for quite a long time before taking off and gliding south west over the lake. The two juveniles in the nest called during the observation.
Map of Flight Path	

Schoodic Nest, 2019-07-19

Created	2019-07-19 14:33:05 UTC by Randi Jackson
Updated	2019-08-05 16:33:44 UTC by Meg Stevenson
Location	44.6954125353, -67.8743498773
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-19
Survey Site	Schoodic Nest

Survey Overview

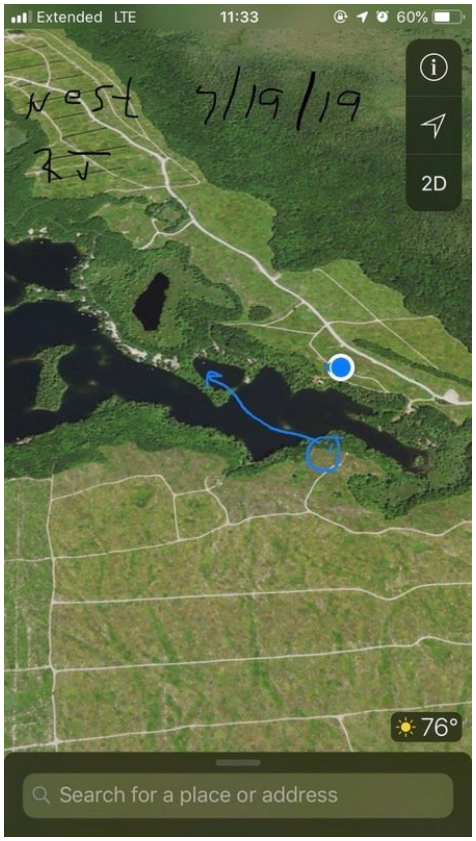
Survey Start Time	10:23
Survey End Time	14:24
Duration of survey (minutes)	241
Count of eagles observed	1
Count of raptors observed	4
Survey Summary Comments	Both juveniles still in the nest. The wind picked up slightly during the last hour of the survey. Both juveniles were observed raising and flapping their wings. Neither took flight.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	S
Temperature (F)	74
Relative Humidity	57
Barametric Pressure (inches)	29.87
Cloud Cover (percent)	0
Visibility	Unlimiyed
Precipitation	0 - none

Bald Eagle, 1

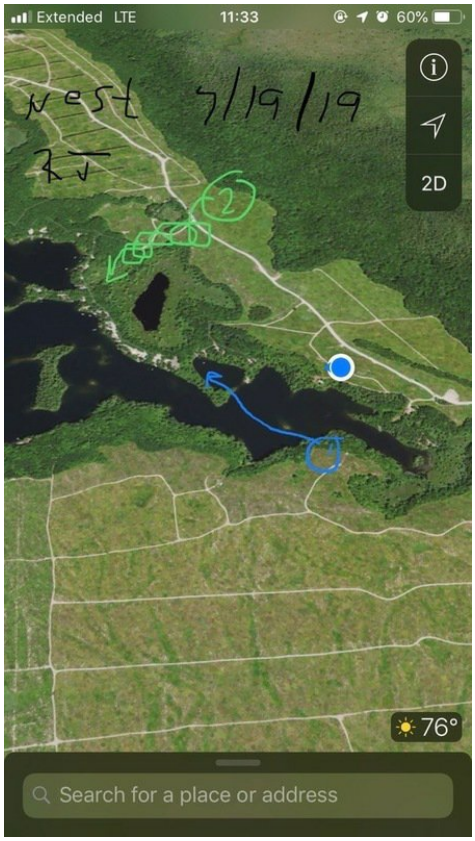
Raptor Site	Schoodic Nest
Raptor Date	7/19/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	11:32
Time last observed	11:33
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown
Behavior	Flapping, Gliding
General Flight Direction	W
Flight Height	1 - below rotor swept area

Notes	Initially spotted flying low over the lake from the east. Continued flying low over the lake heading west.
Map of Flight Path	

Turkey Vulture, 2

Raptor Site	Schoodic Nest
Raptor Date	7/19/19
Species	Turkey Vulture
Raptor observation number	2
Count of individuals in group	2
Time first observed	11:37
Time last observed	11:44
Duration of observation (minutes)	7
Duration within survey boundary	7
Age	Unknown
Sex	Unknown
Behavior	Circling
General Flight Direction	SW
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Initially spotted in the north circling over the blueberry fields. Circled for a while making their way south west while circling.

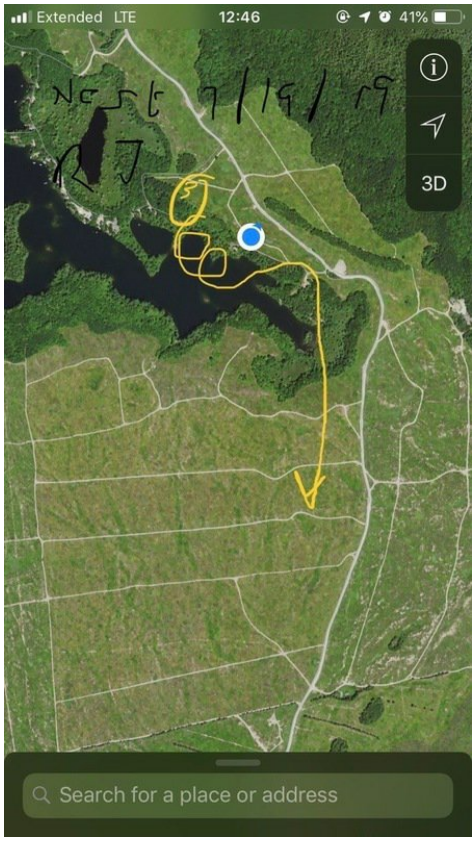
Map of Flight Path



Turkey Vulture, 3

Raptor Site	Schoodic Nest
Raptor Date	7/19/19
Species	Turkey Vulture
Raptor observation number	3
Count of individuals in group	1
Time first observed	12:33
Time last observed	12:44
Duration of observation (minutes)	11
Duration within survey boundary	11
Age	Adult
Sex	Unknown
Behavior	Circling, Soaring
General Flight Direction	S
Flight Height	2 - within rotor swept area
Horizontal Position Code	C - flight path over lower slope of ridge
Notes	First spotted circling in from the north. Circled a few times over the edge of the lake then took off soaring south.

Map of Flight Path



Schoodic Nest, 2019-07-24

Created	2019-07-24 14:28:08 UTC by Randi Jackson
Updated	2019-09-16 16:56:11 UTC by Randi Jackson
Location	44.6954536904, -67.8743475304
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-24
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	08:30
Survey End Time	12:31
Duration of survey (minutes)	241
Count of eagles observed	3
Count of raptors observed	4
Survey Summary Comments	One juvenile spent the morning flying around the area of the nest. At one point one of the juveniles joined the female in a longer flight (about 20min). The other juvenile remained in the nest tree during the entire duration of the survey. This juvenile worked on flapping its wings and hoping from one branch to another. Both juveniles remained in the nest tree afterwards. Hoping from branch to branch.

Weather Summary

Wind Speed	1 - Light air
Wind Direction	W
Temperature (F)	82
Relative Humidity	51
Barametric Pressure (inches)	29.93
Cloud Cover (percent)	90
Visibility	Unlimited
Precipitation	0 - none

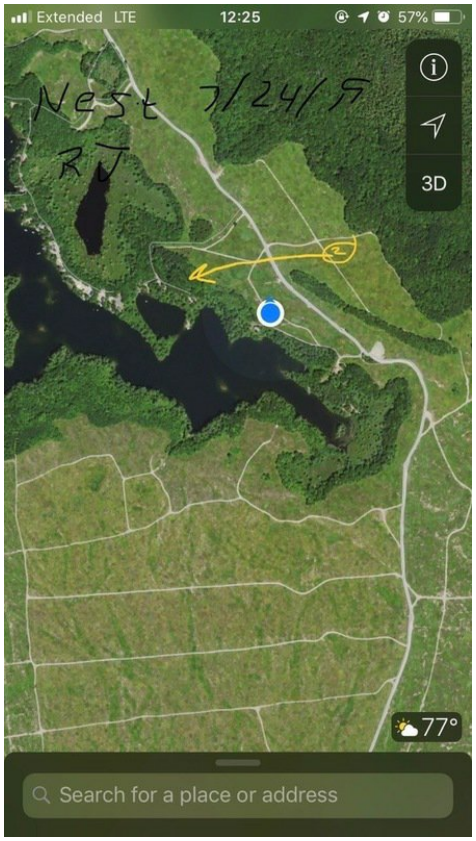
Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	7/24/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	3
number of eagles observed	3
Time first observed	10:01
Time last observed	10:23
Duration of observation (minutes)	22
Duration within survey boundary	5
Age	Juvenile, Adult
Sex	Unknown, Female
Behavior	Flapping, Perching
General Flight Direction	W

Flight Height	1 - below rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Only one juvenile was observed flying around the area of the nest all morning (blue on map). The female (red on map) came into the nest around 10 and perched briefly. The female and one of the juveniles (green on map) took of flying low over the lake heading west. The other juvenile remained in the nest calling. Very poor views of the western side of the lake due to tree line coverage. About 20 min later the female and juvenile were spotted flying low over the lake coming into the nest and landed. The female perched briefly then took off flying low over the lake again heading north west.
Map of Flight Path	

Osprey, 2

Raptor Site	Schoodic Nest
Raptor Date	7/24/19
Species	Osprey
Raptor observation number	2
Count of individuals in group	1
Time first observed	12:23
Time last observed	12:25
Duration of observation (minutes)	2
Duration within survey boundary	2
Age	Adult
Sex	Unknown
Behavior	Flapping
General Flight Direction	W
Flight Height	2 - within rotor swept area

Horizontal Position Code	D - flight path over a valley
Notes	Spotted flying in from the east heading west towards the lake.
Map of Flight Path	

Schoodic Nest, 2019-08-02

Created	2019-08-02 17:28:34 UTC by Randi Jackson
Updated	2020-01-02 15:51:14 UTC by Randi Jackson
Location	44.6954765311, -67.8743419145
Lead Observer	Randi Jackson
Survey Interval	August
Date	2019-08-02
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	09:32
Survey End Time	13:32
Duration of survey (minutes)	240
Count of eagles observed	2
Count of raptors observed	2
Survey Summary Comments	Both juveniles remained in the nest tree for the duration of the survey. They each hopped around to different branches but never left the tree.

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	S
Temperature (F)	82
Relative Humidity	37
Barametric Pressure (inches)	28.08
Cloud Cover (percent)	25
Visibility	Unlimited
Precipitation	0 - none

Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	8/2/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	2
number of eagles observed	2
Time first observed	09:32
Time last observed	13:32
Duration of observation (minutes)	240
Duration within survey boundary	240
Age	Juvenile
Sex	Unknown
Behavior	Perching
Notes	Both juvenile eagles were observed in the nest tree for the duration of the survey. They sat in the nest and hoped around branches of the tree but never took flight.

Map of Flight Path



Schoodic Nest, 2019-08-07

Created	2019-08-07 15:13:36 UTC by Meg Stevenson
Updated	2019-12-19 21:06:33 UTC by Meg Stevenson
Location	44.6953641717, -67.8743041959
Lead Observer	Meg Dood
Survey Interval	August
Date	2019-08-07
Survey Site	Schoodic Nest

Survey Overview

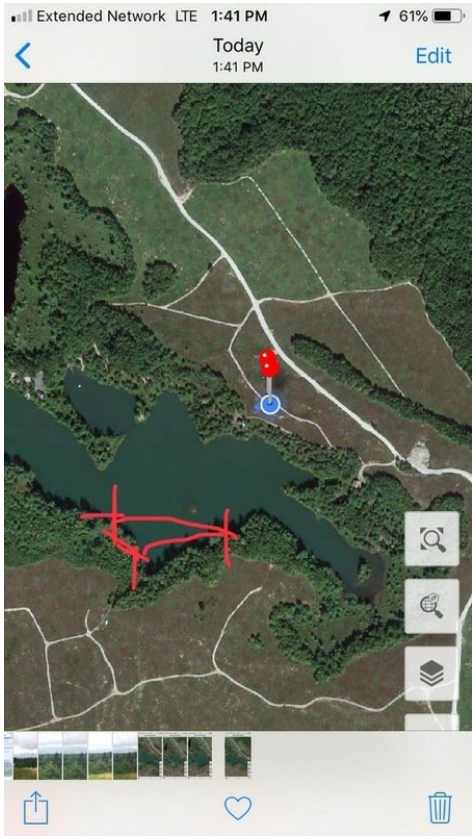
Survey Start Time	11:08
Survey End Time	15:08
Duration of survey (minutes)	240
Count of eagles observed	5
Count of raptors observed	5

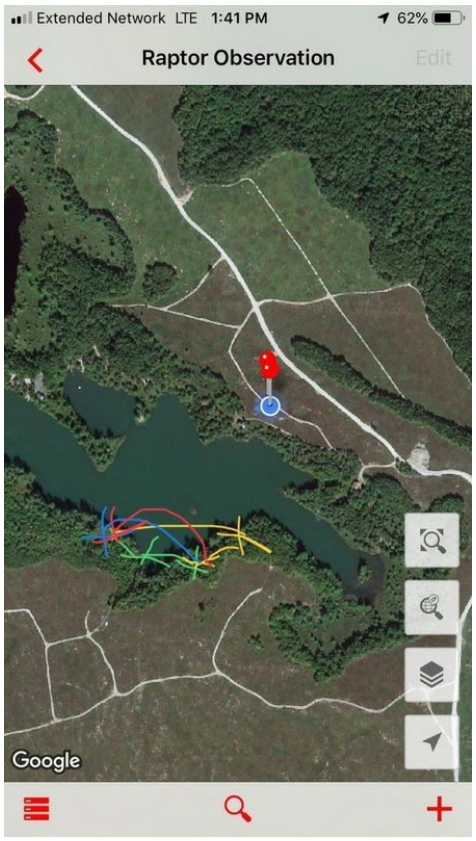
Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	8/7/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	2
number of eagles observed	2
Time first observed	11:08
Time last observed	15:08
Duration of observation (minutes)	240
Duration within survey boundary	240
Age	Juvenile
Sex	Unknown
Behavior	Perching
General Flight Direction	E
Flight Height	1 - below rotor swept area
Notes	One perched in tree, one in nest until 12:00 when adult returns and lands in nest for moment. Both juveniles fly around tree for less than a minute before landing back in the tree, one on lower branch, one in nest. Adult takes off in direction it came, from west. Juveniles vocalize on and off. One juvenile flys to tree on shoreline across from survey location, then flys back to dead tree and stays perched there from 12:10 to 1:03. Individual then flys back to nest, low, below tree height. 1:30 both juveniles perch in trees along shore, one in dead snag, other just to the east in a tree. At 1:33 both birds move into same pine tree perched next to each other 1:37 both birds fly back to nest.

Map of Flight Path


Extended Network LTE 12:03 PM
91%
Raptor Observation
Edit
Google


Extended Network LTE 1:41 PM
61%
Today
1:41 PM
Edit



Weather during observation

Wind Speed	2 - Light breeze
Wind Direction	SW
Temperature (F)	67
Relative Humidity	87
Barametric Pressure (inches)	29.98
Cloud Cover (percent)	100
Visibility	10km
Precipitation	0 - none

Bald Eagle, 2

Raptor Site	Schoodic Nest
Raptor Date	8/7/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1
number of eagles observed	1
Time first observed	12:00
Time last observed	12:01
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown

Behavior	Flapping, Perching
General Flight Direction	W
Flight Height	0 - outside of turbine array area, 1 - below rotor swept area
Notes	Adult flys in from west over lake, low below tree height. Swoops up and perches in nest, juveniles fly around nest tree, adult takes back off low over the lake to west
Map of Flight Path	

Bald Eagle, 3

Raptor Site	Schoodic Nest
Raptor Date	8/7/19
Species	Bald Eagle
Raptor observation number	3
Count of individuals in group	1
number of eagles observed	1
Time first observed	12:08
Time last observed	12:09
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown
Behavior	Perching, Flapping
General Flight Direction	S
Flight Height	1 - below rotor swept area, 0 - outside of turbine array area
Notes	Adult flys up from lake and perches low in pine tree along lake west of the nest. Lost visual on bird when it flew into tree.

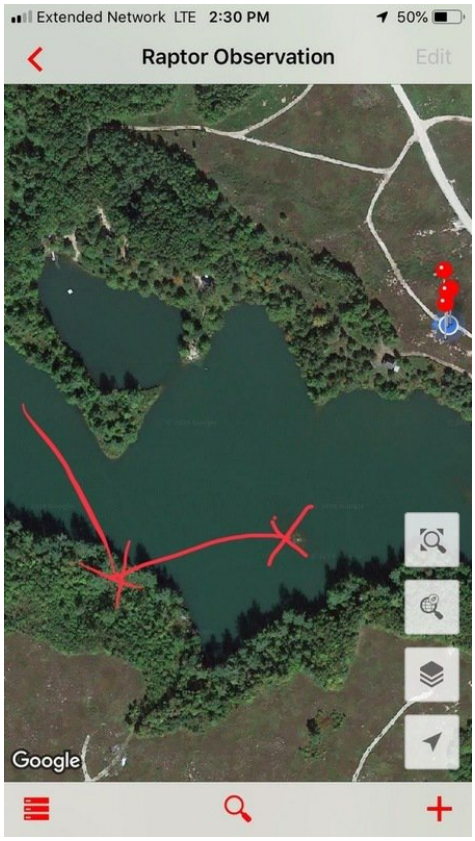
Map of Flight Path



Bald Eagle, 4

Raptor Site	Schoodic Nest
Raptor Date	8/7/19
Species	Bald Eagle
Raptor observation number	4
Count of individuals in group	1
number of eagles observed	1
Time first observed	14:21
Time last observed	14:26
Duration of observation (minutes)	5
Duration within survey boundary	5
Age	Adult
Sex	Unknown
Behavior	Flapping, Perching
General Flight Direction	E
Flight Height	1 - below rotor swept area
Notes	Adult returns and lands in nest then flys down to rocks in lake. Did not see it fly off, watching juveniles in nest.

Map of Flight Path



11:15

Time of weather observation	11:15
Wind Speed	3 - Gentle breeze
Wind Direction	SW
Temperature (F)	66
Relative Humidity	92
Barametric Pressure (inches)	29.9
Cloud Cover (percent)	50
Visibility	10km
Precipitation	0 - none

Schoodic Nest, 2019-08-13

Created	2019-08-13 16:58:12 UTC by Meg Stevenson
Updated	2019-08-15 14:37:22 UTC by Meg Stevenson
Location	44.6954676462754, -67.8743471112734
Lead Observer	Meg Dood
Survey Interval	August
Date	2019-08-13
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	12:51
Survey End Time	16:51
Duration of survey (minutes)	240
Count of eagles observed	3
Count of raptors observed	3

Weather Summary

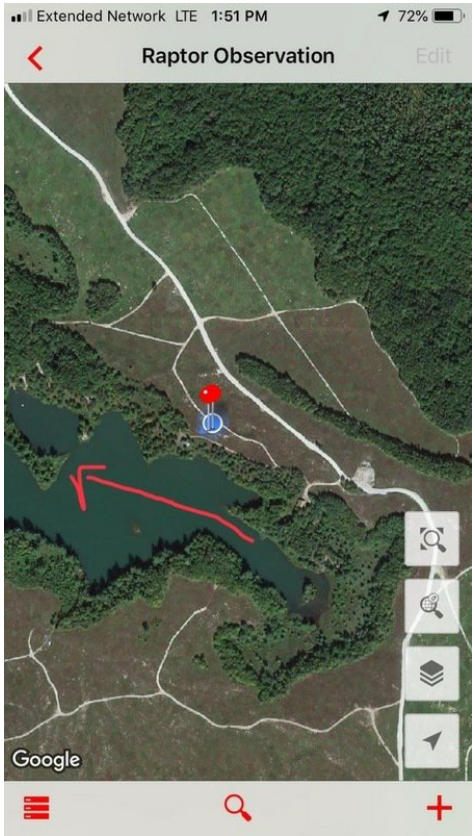
Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	83
Relative Humidity	50
Barametric Pressure (inches)	26.76
Cloud Cover (percent)	80
Visibility	10km
Precipitation	0 - none

Bald Eagle, 1

Raptor Site	Schoodic Nest
Raptor Date	8/13/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	2
number of eagles observed	2
Time first observed	12:51
Time last observed	16:51
Duration of observation (minutes)	240
Duration within survey boundary	240
Age	Juvenile
Sex	Unknown
Behavior	Perching
Notes	Both juveniles stayed in tree. Brief 15s flight around tree at 1:34 before landing back in tree. Vocalized periodically.

Bald Eagle, 2

Raptor Site	Schoodic Nest
Raptor Date	8/13/19

Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1
number of eagles observed	1
Time first observed	13:42
Time last observed	13:43
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown
Behavior	Flapping
General Flight Direction	W
Flight Height	0 - outside of turbine array area
Notes	Flight low, below 50ft. Flys from east end of lake out of site to the west, low below tree height entire time.
Map of Flight Path	

Schoodic Nest, 2019-08-23

Created	2019-08-23 14:50:09 UTC by Randi Jackson
Updated	2020-01-23 16:58:22 UTC by Meg Stevenson
Location	44.6954102721, -67.8744335287
Lead Observer	Randi Jackson
Survey Interval	August
Date	2019-08-23
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	08:00
Survey End Time	12:07
Duration of survey (minutes)	247
Count of eagles observed	3
Count of raptors observed	6

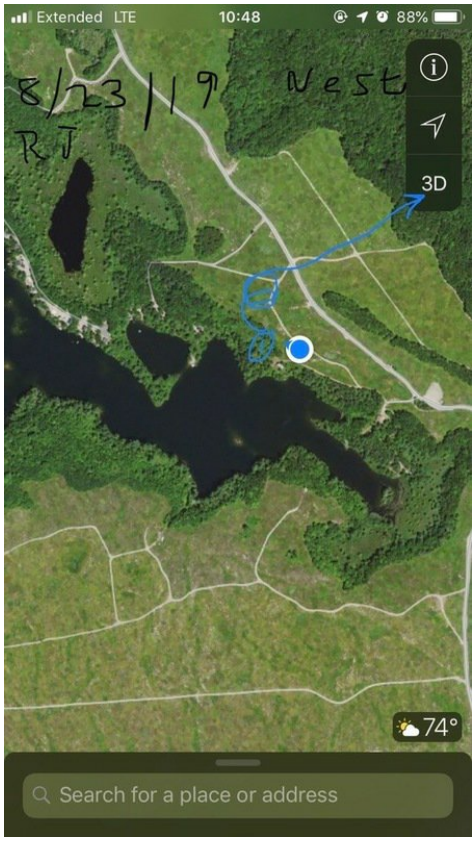
Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	N
Temperature (F)	76
Relative Humidity	64
Barametric Pressure (inches)	29.91
Cloud Cover (percent)	25
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Absolute gorgeous day. A nice fresh breeze on a sunny day!

Broad-winged Hawk, 1

Raptor Site	AD-6
Raptor Date	8/23/19
Species	Broad-winged Hawk
Raptor observation number	1
Count of individuals in group	1
Time first observed	09:28
Time last observed	09:31
Duration of observation (minutes)	3
Duration within survey boundary	3
Age	Adult
Sex	Unknown
Behavior	Circling, Gliding
General Flight Direction	NE
Flight Height	2 - within rotor swept area
Horizontal Position Code	B - Flight path over upper slope of ridge
Notes	Spotted circling over the tree line on the northern side of the lake. Circled for a few minutes then took off gliding north east.

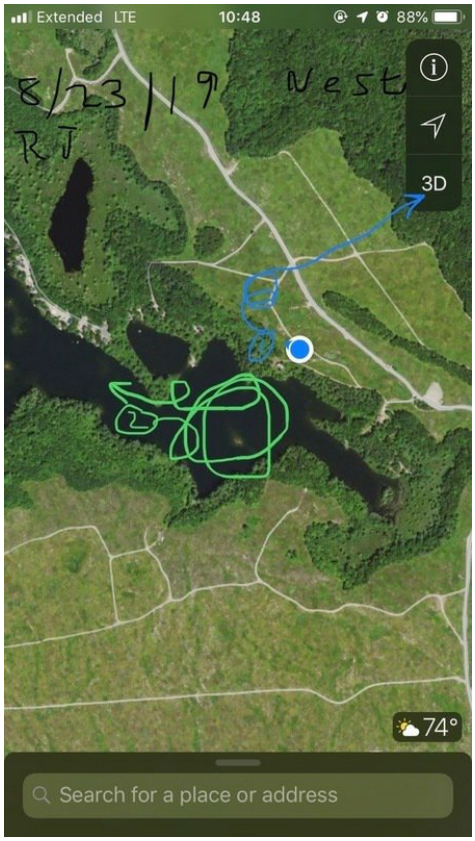
Map of Flight Path



Osprey, 2

Raptor Site	Schoodic Nest
Raptor Date	8/23/19
Species	Osprey
Raptor observation number	2
Count of individuals in group	2
Time first observed	10:18
Time last observed	10:40
Duration of observation (minutes)	22
Duration within survey boundary	22
Age	Adult
Sex	Unknown
Behavior	Circling
General Flight Direction	W
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Two osprey Spotted flying in from the western side of the lake. Both individuals Circled over the lake for the entire observation. The juvenile bald eagle that was in the nest harassed the osprey while they were circling over the lake. Last spotted circling heading west.

Map of Flight Path



Bald Eagle, 3

Raptor Site	Schoodic Nest
Raptor Date	8/23/19
Species	Bald Eagle
Raptor observation number	3
Count of individuals in group	1
number of eagles observed	1
Time first observed	10:18
Time last observed	10:40
Duration of observation (minutes)	22
Duration within survey boundary	22
Age	Juvenile
Sex	Unknown
Behavior	Perching, Circling
General Flight Direction	S
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	One juvenile bald eagle observed in the nest upon arrival. The eagle did not leave the nest until the osprey (observation 2) began circling over the lake near the nest. The juvenile eagle took off and began circling and harassing the osprey. The juvenile circled and pestered the osprey for the entire time they were circling around the lake. Once the osprey left the juvenile eagle landed back in the tree and perched.

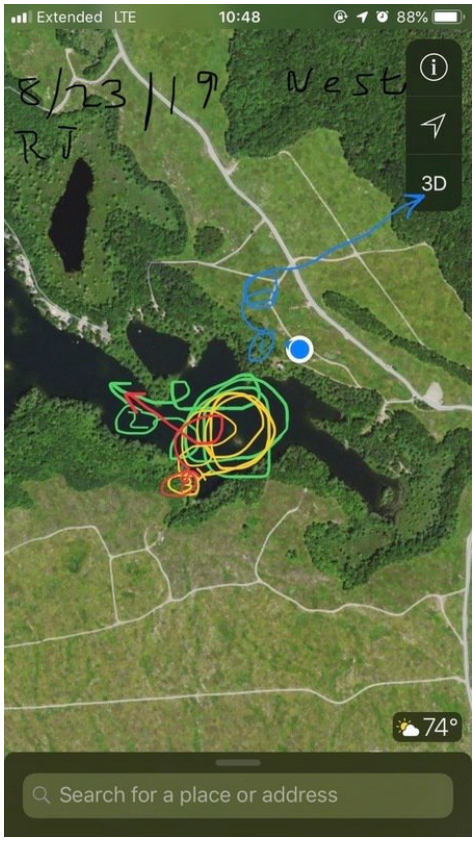
Map of Flight Path



Bald Eagle, 4

Raptor Site	Schoodic Nest
Raptor Date	8/23/19
Species	Bald Eagle
Raptor observation number	4
Count of individuals in group	1
number of eagles observed	1
Time first observed	11:47
Time last observed	11:48
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Juvenile
Sex	Unknown
Behavior	Circling, Gliding, Perching
General Flight Direction	W
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	The juvenile bald eagle took off from the nest. Circled once around the lake then took off gliding west.

Map of Flight Path



Bald Eagle, 5

Raptor Site	Schoodic Nest
Raptor Date	8/23/19
Species	Bald Eagle
Raptor observation number	5
Count of individuals in group	1
number of eagles observed	1
Time first observed	11:47
Time last observed	12:07
Duration of observation (minutes)	20
Duration within survey boundary	13
Age	Juvenile
Sex	Unknown
Behavior	Circling
General Flight Direction	E
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Spotted the juvenile bald eagle circling in from the western side of the lake. Circled over the lake for the rest of the duration of the survey.

Map of Flight Path



Schoodic Nest, 2019-08-30

Created	2019-08-30 16:19:23 UTC by Meg Stevenson
Updated	2019-12-19 21:01:10 UTC by Meg Stevenson
Location	44.6953503834, -67.8741140944
Lead Observer	Meg Dood
Survey Interval	August
Date	2019-08-30
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	11:43
Survey End Time	15:43
Duration of survey (minutes)	240
Count of eagles observed	3
Count of raptors observed	6

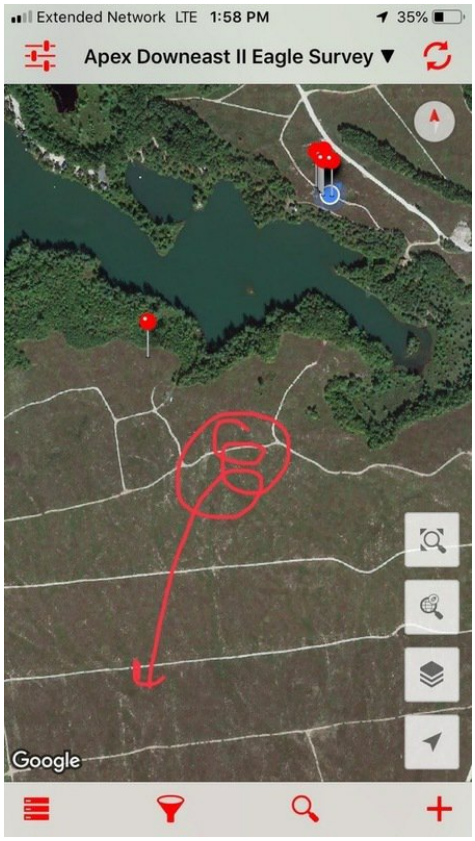
Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	SW
Temperature (F)	77
Relative Humidity	80
Barametric Pressure (inches)	29.92
Cloud Cover (percent)	30
Visibility	10km
Precipitation	0 - none

Turkey Vulture, 1

Raptor Site	Schoodic Nest
Raptor Date	8/30/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	3
Time first observed	13:54
Time last observed	13:56
Duration of observation (minutes)	2
Age	Unknown
Sex	Unknown
Behavior	Circling, Gliding
General Flight Direction	S
Flight Height	1 - below rotor swept area
Notes	Three TUVU circle about 50 ft above barren, drop down out of sight headed south

Map of Flight Path

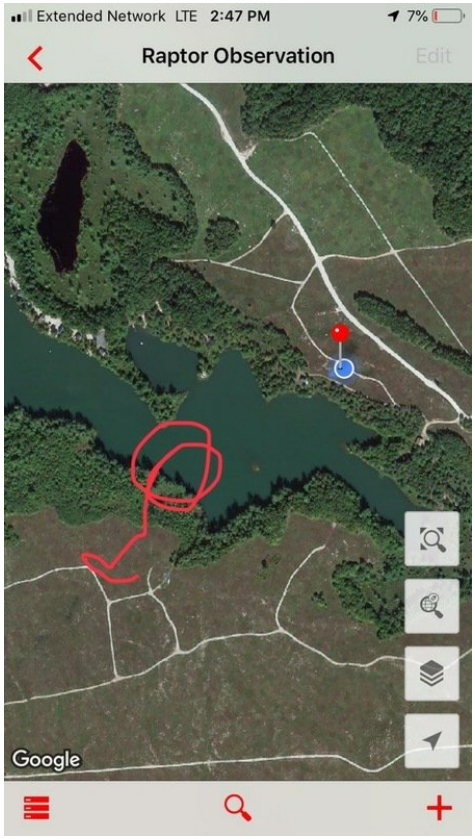


Weather during observation

Wind Speed	5 - Fresh breeze
Wind Direction	SW
Temperature (F)	78
Relative Humidity	59
Barametric Pressure (inches)	29.91
Cloud Cover (percent)	10
Visibility	10km
Precipitation	0 - none

Bald Eagle, 2

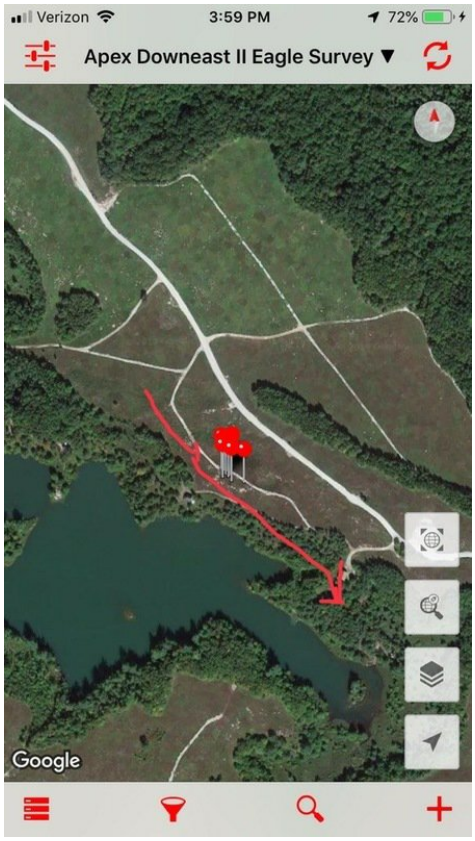
Raptor Site	Schoodic Nest
Raptor Date	8/30/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	2
number of eagles observed	2
Time first observed	14:34
Time last observed	14:46
Duration of observation (minutes)	12
Duration within survey boundary	12
Age	Juvenile
Sex	Unknown

Behavior	Flapping, Circling, On ground
Flight Height	1 - below rotor swept area
Notes	Both juveniles fly in and circle down, landing in barren behind nest on hill. Chase ravens away in field. Walk out of site
Map of Flight Path	

Bald Eagle, 3

Raptor Site	Schoodic Nest
Raptor Date	8/30/19
Species	Bald Eagle
Raptor observation number	3
Count of individuals in group	1
number of eagles observed	1
Time first observed	15:23
Time last observed	15:25
Duration of observation (minutes)	2
Duration within survey boundary	2
Age	Juvenile
Sex	Unknown
Behavior	Flapping, Gliding
General Flight Direction	SW
Flight Height	1 - below rotor swept area
Notes	Juvenile 2nd year BAEA flys along northern shore, directly over truck, about 20ft -40 ft. Drops down below trees out of sight and end of lake. Some mottled white across breast and underside of wings.

Map of Flight Path



13:59

Time of weather observation	13:59
Wind Speed	5 - Fresh breeze
Wind Direction	SW
Temperature (F)	78
Relative Humidity	59
Barametric Pressure (inches)	29.91
Cloud Cover (percent)	10
Visibility	10km
Precipitation	0 - none

Schoodic Nest, 2019-09-06

Created	2019-09-06 15:47:54 UTC by Randi Jackson
Updated	2019-12-17 17:59:39 UTC by Meg Stevenson
Location	44.6954863798, -67.874399582
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-06
Survey Site	Schoodic Nest

Survey Overview

Survey Start Time	07:48
Survey End Time	11:48
Duration of survey (minutes)	240
Survey Summary Comments	No eagles flying around the nest. No raptors or eagles observed.

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	68
Relative Humidity	51
Barametric Pressure (inches)	30.12
Cloud Cover (percent)	50
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Absolutely gorgeous cool day!

EXHIBIT 7-9: EAGLE USE SURVEY REPORT

2015-2016 Bald Eagle Use and Bald Eagle Nest and Heron Rookery Surveys for the Downeast Wind Project

Washington County, Maine

Business Confidential

Prepared by:
Stantec Consulting Services Inc.
30 Park Drive
Topsham, Maine 04086

November 10, 2016

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2015-2016 BALD EAGLE USE AND BALD EAGLE NEST AND HERON ROOKERY SURVEYS FOR THE DOWNEAST WIND PROJECT

November 10, 2016

Executive Summary

Stantec Consulting Services Inc. (Stantec) conducted bald eagle (*Haliaeetus leucocephalus*) surveys for the proposed 30-turbine (90-megawatt) Downeast Wind Project (DOW or Project) in Washington County, Maine. Bald eagle surveys included an aerial bald eagle nest survey in spring 2016 and bald eagle use surveys from September 2015 to September 2016. The objective of the aerial nest survey was to locate bald eagle nests and great blue heron (*Ardea herodias*) within 4 miles of the area proposed for development (Project area). The objective of bald eagle use surveys was to characterize seasonal and spatial use of the Project area by bald eagles to evaluate risk and inform siting Surveys followed methods described in the Project Work Plan developed in coordination with U.S. Fish and Wildlife Service (USFWS) and Maine Department of Inland Fisheries and Wildlife's (MDIFW) and were consistent with the USFWS April 2013 *Eagle Conservation Plan Guidance* (ECPG) and MDIFW's June 2015 *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (MDIFW Recommendations) dated June 2015.

Aerial Nest Survey

Survey flights were completed on 13 April 2016 and 19 May 2016. Bald eagle nests, great blue heron rookeries, incidental observations of bald eagles, great blue heron and osprey (*Pandion haliaetus*) were recorded if observed. Two occupied and 5 unoccupied bald eagle nests were located within the survey area. The nearest occupied nest was located 3.3 miles southeast of the Project area boundary. The nearest unoccupied nest was within the Project area. One active great blue heron rookery was documented during the second flight in southern Deblois, approximately 2.2 miles west of the Project area. Seven nests containing 5 adult great blue herons were observed at this location. One new unoccupied nest was located during the second flight: the nest was composed of sticks and in a location and of a size that suggested it was either a great blue heron or osprey nest. This nest is located just outside and west of the Project area. One osprey was observed on the transmission line south of Schoodic Lake. No other incidental bald eagle or great blue heron observations were made during either survey flight.

Bald Eagle Use Surveys

Bald eagle use point count surveys were conducted from September 2015 to September 2016. Point count surveys consisted of 1-hour visual surveys at 31 locations within and adjacent to the Project area. Each location surveyed an area of 2 km^2 (800-m radius circle). Stantec surveyed approximately once every 3 weeks and completed 18 rounds of survey totaling 310 survey hours. Nine bald eagles were recorded at points inside the Project area, for a total of 21 eagle minutes recorded in 133 hrs of survey within the Project area. During 9 of those minutes, bald eagles flew at heights 200 m or less agl. Twenty two eagle observations were recorded outside but near the Project area in a total of 177 hrs of study. A single territorial display between 2 individuals was observed in the Project area in March 2016. All other observed behaviors in the Project area

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were soaring or gliding, or perching. For all points, bald eagle use was concentrated in the winter and spring months of January through May. The rate of bald eagle occurrence was highest in the month of March at points inside and outside the Project area. No eagles were observed in the months of June, July, October, and December. These data suggest that the area proposed for development presents low risk to the species.

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) conducted bald eagle (*Haliaeetus leucocephalus*) surveys on land in and adjacent to the 30-turbine (90-megawatt) Downeast Wind Project (DOW or Project) in Washington County, Maine. Bald eagle surveys included an aerial bald eagle nest in spring 2016 and bald eagle use surveys from September 2015 to September 2016. The objective of the aerial nest survey was to locate bald eagle nests and great blue heron (*Ardea herodias*) rookeries to evaluate risk and inform siting. The objective of bald eagle use surveys was to evaluate the seasonal and spatial patterns of bald eagle activity to evaluate risk and inform siting.

Surveys were conducted to comply with the U.S. Fish and Wildlife Service's (USFWS) *Eagle Conservation Plan Guidance* (ECPG) dated April 2013 and the Maine Department of Inland Fisheries and Wildlife's (MDIFW) *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (MDIFW Recommendations) dated June 2015. Surveys followed methods described in the Project Work Plan submitted to MDIFW on 19 February 2016. The Work Plan was discussed with MDIFW at a meeting on 23 February 2016, and was revised on 17 March 2016 based on feedback from MDIFW (Appendix A). Revisions to the Work Plan were related to the aerial nest survey, and included the following: using a transect-based search approach within 4 miles of the Project; and timing the second aerial flight in early to mid-May to concurrently assess the status of the bald eagle nests identified in the first flight and to assess the status of known or new great blue heron rookeries.

2.0 2016 AERIAL BALD EAGLE NEST, GREAT BLUE HERON ROOKERY, AND LARGE RAPTOR NEST SURVEY

2.1 METHODS

Prior to the surveys, Stantec reviewed information provided by MDIFW regarding known active and historic bald eagle nest and great blue heron rookery locations in the vicinity of the Project. Following protocol previously established by the USFWS (2007)[1], Stantec notified Mark McCollough of the USFWS Maine Field Office on 4 April 2016 that flights were being conducted in the area and that Stantec was coordinating with MDIFW on the timing and methods of the flights.

Stantec conducted 2 aerial surveys in the spring of 2016. A revised Project area was provided to Stantec after surveys on 28 September 2016. Figure 1 depicts the initially proposed Project area and associated survey area, which fully encompasses the current Project area.

[1] U.S. Fish and Wildlife Service. 2007. *National Bald Eagle Management Guidelines*. U.S. Fish and Wildlife Service, Washington, DC.

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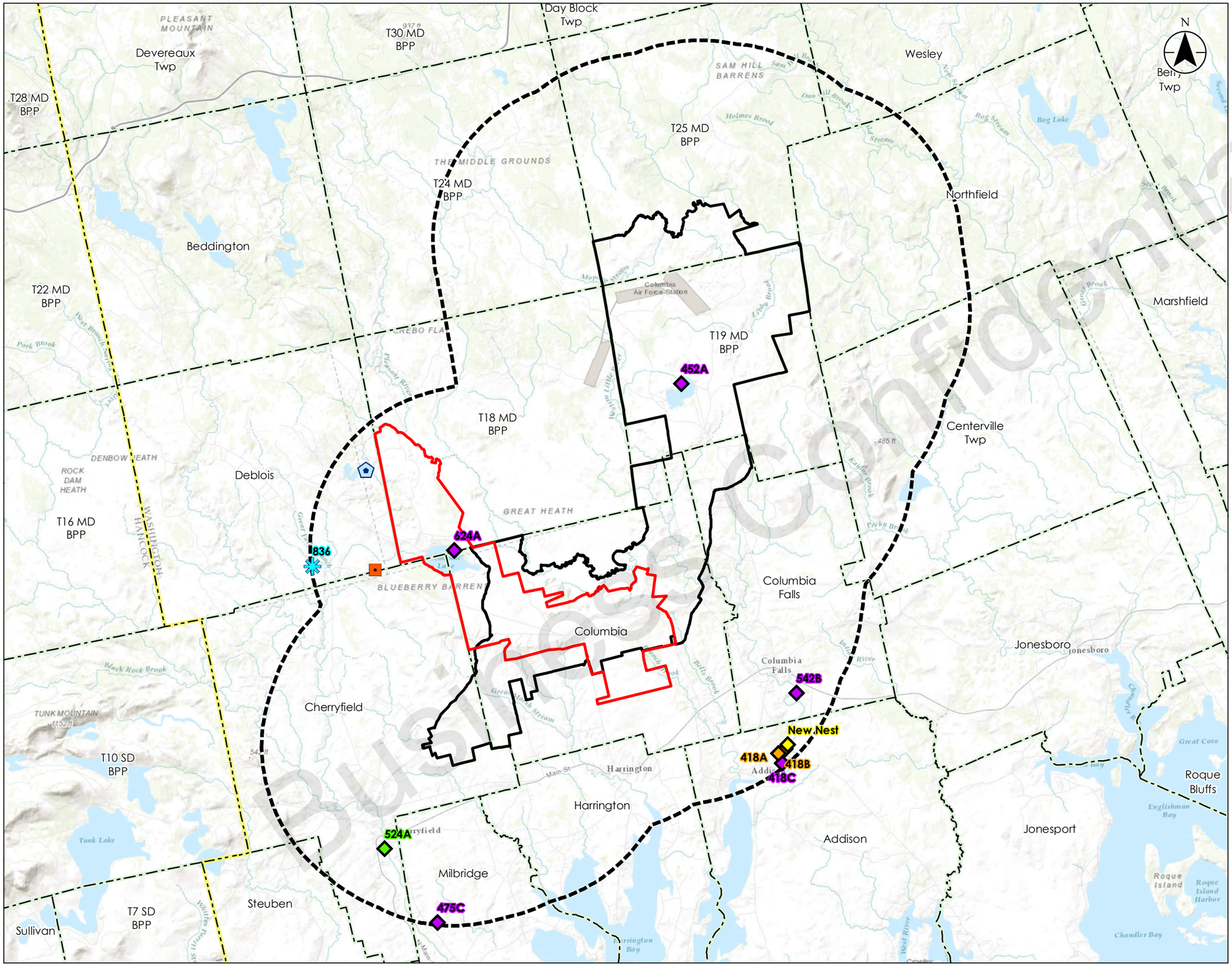
The aerial surveys were conducted in a Cessna fixed-wing aircraft piloted by Mr. Jim Strang (first flight) and Mr. Jeremy Harmon (second flight) of Penobscot Island Air. The first flight was conducted on 13 April 2016 and was focused on surveying for bald eagle nests. The timing of the first flight was chosen to correspond with the time period when bald eagles are actively incubating eggs in the nests. The purpose of the first flight was to survey the mapped bald eagle nests and to search potential nesting habitat for new bald eagle nests within 4 miles of the initial Project area (Figure 1). The survey included inland waterbodies and portions of Narraguagus River and Bay, Harrington Bay and other bays and inlets on the Atlantic Ocean. We also performed low level flights along the shoreline of rivers, lakes, the ocean, and major wetland systems to target preferred potential bald eagle nesting habitat. During this flight observers also surveyed for great blue heron nests.

The second flight conducted on 19 May 2016 focused on surveying for great blue heron rookeries, continued to survey for new bald eagle nests, and also surveyed known bald eagle nests for eggs and/or occupancy. The timing of the second flight was chosen to correspond with the time period when great blue herons are actively incubating eggs or brooding chicks in the nests. The surveys consisted of low altitude passes, approximately 300–500 feet above ground level (agl), along transects within 4 miles of the initiall Project area. The planned transect spacing was ½ mile; however during desktop field map preparation, it was apparent that viewsheds would overlap significantly, so transects were widened to approximately ¾ mile[2]. In addition to the transects, the survey investigated large wetland complexes (marshes, bogs, etc.) and the adjacent upland habitat. The survey also included investigation of mapped rookeries within 4 miles of the initial Project area.

During the 2 flights, incidental observations of bald eagles, osprey (*Pandion haliaetus*), and great blue heron were recorded if these species were observed, and large stick nests were recorded if observed.

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[2] Stantec called MDIFW to inform them of the protocol change on 1 April and 7 April 2016



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Legend

Bald Eagle Nests
- Occupied
- Occupied, Not Previously Documented
- Unoccupied
- Previously Documented, Not Located

Other Nests
- Occupied Great Blue Heron Rookery
- Osprey Nest (Unoccupied)
- Unknown Nest (Unoccupied, non-eagle)

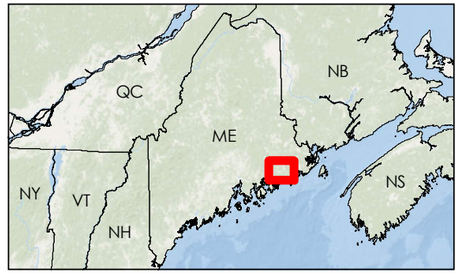
- Initial Project Area (11/23/2015)
- Current Project Area (9/28/2016)
- Aerial Survey Area (4 Miles from Initial Project Area)
- Town Boundary
- County Boundary

0 2.5 Miles

1" = 2.5 miles (At original document size of 11x17)

Notes

1. Aerial survey based on project area received on 11/23/2015. Turbine layouts received on 9/26/2016.
2. Coordinate System: NAD 1983 UTM Zone 19N
3. Town boundary data provided by the Maine Office of GIS (MEGIS).
4. Topographic basemap provided by ArcGIS online World Topographic Map(http://server.arcgisonline.com/arcgis/services/World_Topo_Map/MapServer).



Project Location
Washington County, Maine

195601142
Prepared by GAC on 2016-09-13
Quality Review by RDK on 2016-09-14
Independent Review by BPE on 2016-09-15

Client/Project
Apex Clean Energy, Inc.
Apex Downeast Wind Project
Washington County, Maine

Figure No.
1

Title
2016 Aerial Nest Survey Results

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2.2 RESULTS

Stantec identified 7 total bald eagle nests within the survey area: 2 occupied and 5 unoccupied. As detailed in the ECPG, the occurrence of a pair of adult bald eagles at or near a nest during the normal incubation time period constitutes the nest being considered "occupied." One occupied nest was a new nest (does not have a MDIFW identification number), although this new nest was likely an alternate nest for the nests that were either not located (418A & 418B) or were unoccupied (418C). This new, occupied nest was located 3.3 miles to the southeast of the current Project area (Table 1). The other occupied nest, nest 524A, was located 5.4 miles from the current Project area. Both occupied nests had adults in the nest during the second flight. The adult bald eagle in the new nest obscured the view into the nest so we were unable to determine definitively if there were eggs or nestlings present. Two additional historic bald eagle nest sites were not located (Table 1, Figure 1).

Table 1. Results for bald eagle nests during the aerial nest survey, Downeast Wind Project, 2016.

MDIFW Nest #	Location	Flight 1 Nest Status	Flight 2 Nest Status	Distance to Current Project Area (mi)
524A	Narraguagus River-West	Not Located	Occupied	5.4
475C	Narraguagus River-East	Unoccupied	Unoccupied	6.7
418C	Pleasant River-West	Unoccupied	Unoccupied	3.4
418B	Pleasant River-West	Not Located	Not Located	3.3
418A	Pleasant River-West	Not Located	Not Located	3.2
542B	Pleasant River-East	Not Located	Unoccupied	3.1
452A	Montegail Pond	Unoccupied	Unoccupied	4.7
624A	Schoodic Lake	Unoccupied	Unoccupied	Inside Project Area
New Nest	Pleasant River-West	Occupied, 1 adult in nest	Occupied, 1 adult in nest	3.3

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Stantec surveyed known great blue heron rookery 836 in southern Deblois, which was occupied with 7 nests containing 5 adult great blue herons. This rookery is located 2.2 miles from the current Project area. One new, unoccupied nest was located during the second flight. The nest was composed of sticks and in a location and of a size that suggested it was either a great blue heron or osprey nest. This was a single nest in a wetland north of Pineo Pond and south of Dorr Meadow Brook in Deblois. This nest is located just outside and west of the current Project area (Figure 1).

During the first flight, Stantec observed an osprey nest on the transmission line south of Schoodic Lake but no adult ospreys were observed around the nest. No other incidental bald eagle, great blue heron or osprey observations were made during either survey flight.

3.0 2015-2016 BALD EAGLE USE SURVEY

3.1 METHODS

3.1.1 Bald Eagle Use Point Count Surveys

Stantec conducted point count surveys for bald eagles for 1 full year consistent with the ECPG. Point count surveys consisted of 1-hour visual surveys at a total of 31 locations[3] within and adjacent to the Project area (Figure 2), each with an 800-meter radius and covering an area of 2 km^2. Surveys were conducted once approximately every 3 weeks resulting in 18 rounds.

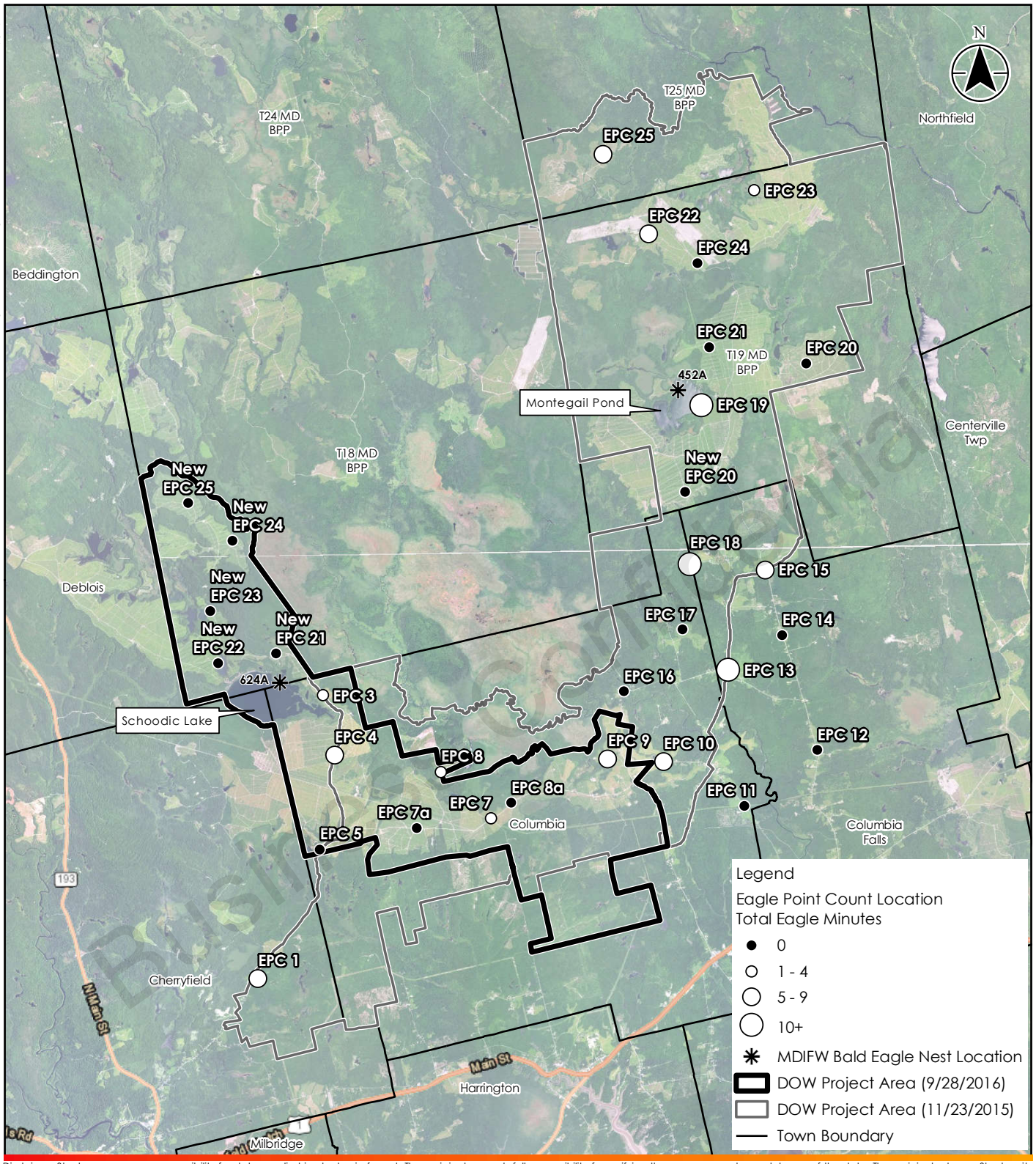
Surveys occurred in all weather conditions except when visibility was poor, and occurred within the full range of daylight hours. The starting point count location changed each survey round to enable sampling of each point during a range of daylight hours. Though bald eagles were the target species, Stantec biologists recorded all birds observed during bald eagle point count surveys. Stantec also recorded any incidental observations of bald eagles observed outside of survey hours such as while traveling between survey points or while conducting other surveys.

3.1.2 Bald Eagle Use Data Analysis

Bald eagle data were summarized by point, including behavior, total observation minutes, and exposure minutes, which are minutes that eagles spent flying within 800 meters of the point count location and at heights below 200 meters agl. Exposure minutes were expressed as a percentage of total survey minutes.

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[3] At the time surveys were initiated, per the ECP Guidance, the number of point count locations was determined by calculating the entire estimated turbine area including a 1-km buffer around proposed turbines, calculating 30% of the area, and dividing by 2 (to account for the 2 km^2 plots). Since initiating surveys, the Project area has been revised and survey points have been relocated.



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195601142

Stantec

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Phone (207) 729-1199

0 2 Miles
1 inch = 2 miles (At page size of 8.5"x11")

Client/Project
Apex Clean Energy, Inc.
Apex Downeast Wind Project
Washington County, Maine

Figure No.
2

Title
2015-2016 Eagle Use Survey Locations
10/18/2016

Prepared by GAC on 2016-09-29
Reviewed by LSB on 2016-09-30

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3.2 RESULTS

3.2.1 Survey Effort

Stantec conducted 310 hours of survey at 31 locations between 16 September 2015 and 7 September 2016. Thirteen of the points were located within the Project area; however, survey effort varied across these points due to the revision of the Project area on 28 September 2016 resulting in some points being added and some being relocated. Of the 310 survey hours, 133 occurred in the current Project area and 177 occurred adjacent to the Project area. Skies ranged from clear to overcast. Short periods of drizzle occurred during 2 survey rounds; no other precipitation occurred during surveys (Table 2).

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Table 2. Survey effort results and weather conditions per round during bald eagle use surveys, Downeast Wind Project, 2015–2016.

Survey Round	Date	Points Surveyed (Total)	Sky Condition	Avg.Temperature (°C)	Avg. Wind Speed (m/s)	Wind Direction
2015						
1	9/16–9/17	1, 3, 4, 5, 7a, 8a, 8, 9, 10, 11, 12, 13, 14, 15	clear to partly cloudy	23	0–5	variable
2	10/5–10/6	1, 3, 4, 5, 7a, 8, 9, 10, 11, 13, 15, 16	clear to partly cloudy	13	0–3	east
3	10/26–10/27	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	clear to partly cloudy	5	0–5	variable
4	11/18–11/19	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	clear to cloudy	4	1–5	variable
5	12/10–12/11	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	overcast with a period of drizzle	8	1–3	south
2016						
6	1/6–1/7	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	partly cloudy	-8	0–1	west
7	1/25–1/26	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	clear to cloudy	-3	0–3	north and west
8	2/10–2/11	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18	clear to cloudy	-2	0–3	variable
9	2/29–3/1; 3/3–3/4	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	clear to cloudy	-4	1–11	variable
10	3/22–3/25	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	foggy to clear	1	1–8	variable
11	4/13–4/16	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	clear to partly cloudy	8	1–8	northeast
12	5/2–5/5	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	foggy to partly cloudy	10	1–5	variable
13	5/23–5/24	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	partly cloudy to overcast	17	1–5	east
14	6/14–6/16	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, New 21, New 22, New 23, New 24, New 25	clear to cloudy	16	0–8	variable
15	7/6–7/7	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, New 21, New 22, New 23, New 24, New 25	partly cloudy to overcast	17	1–5	east
16	7/26–7/28	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, New 21, New 22, New 23, New 24, New 25	partly cloudy to overcast with a period of drizzle	24	0–3	variable
17	8/15–8/17	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, New 21, New 22, New 23, New 24, New 25	partly cloudy to overcast	24	0–8	variable
18	9/6–9/7	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, New 21, New 22, New 23, New 24, New 25	clear to cloudy	21	0–5	variable

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3.2.2 Results Inside the Project Area

A total of 31 bald eagle observations were recorded, 9 of which were within the Project area. Twenty-one eagle bald eagle minutes were recorded inside the Project area and 9 total bald eagle exposure minutes. Total exposure minutes ranged from 0 –4 minutes per point (Table 3). The greatest number of flying bald eagle minutes per survey hour within the Project area occurred at Point 9 (n = 0.50 flying bald eagle minutes/survey hour; 43% of total flying bald eagle minutes within the Project area. Point 9 is in the eastern portion of the Project area, and most minutes occurred when the 2 bald eagles exhibited undulating, territorial flight on 22 March. The greatest number of bald eagle exposure minutes also occurred at this Point (n = 0.22 exposure minutes/survey hour; 44% total exposure minutes in the Project area). Of the 13 Points inside the Project area, no bald eagles were observed at Points 5, 7a, 8a, New 21, New 22, New 23, New 24, and New 25.

Table 3. Survey effort and bald eagle minutes per point inside the current Project area during bald eagle use surveys, Downeast Wind Project, 2015–2016.

Point	Survey Effort (hours)	Total Bald eagle Minutes[1]	Total Exposure Minutes	Total Bald eagle Minutes/ Survey Hour	Total Exposure Minutes/ Survey Hour
3	18	2	2	0.11	0.11
4	18	5	0	0.28	0.00
5	18	0	0	0.00	0.00
7	16	2	0	0.13	0.00
8	17	3	3	0.18	0.18
9	18	9	4	0.50	0.22
7A	2	0	0	0.00	0.00
8A	1	0	0	0.00	0.00
New 21	5	0	0	0.00	0.00
New 22	5	0	0	0.00	0.00
New 23	5	0	0	0.00	0.00
New 24	5	0	0	0.00	0.00
New 25	5	0	0	0.00	0.00

[1] Minutes that an bald eagle was observed perched are not included.

Observations occurred between 7:20 AM and 4:50 PM (Table 4). Bald eagles observed were adults, except for 1 bald eagle whose age could not be classified due to its distance from the observer. Most bald eagle observations exhibited soaring or gliding behavior.

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Table 4. Location and flight data for bald eagles observed in the Project area during bald eagle use surveys, Downeast Wind Project, 2015–2016.

Date	Round	Point	Time	Age	Behavior	Total Minutes[1]	Total Exposure Minutes[2]
2015							
9/16	1	4	9:11 AM	Adult	soaring	1	0
2016							
1/6	6	8	10:41 AM	Adult	soaring	3	3
3/22	10	9	4:50 PM	Adult	undulating, territorial flight	4	2
3/22	10	9	4:50 PM	Unknown	undulating, territorial flight	3	0
4/14	11	4	7:20 AM	Adult	perched	0	0
4/15	11	9	9:30 AM	Adult	soaring	2	2
4/15	11	3	2:11 PM	Adult	soaring	2	2
5/23	13	7	2:23 PM	Adult	Soaring	2	0
8/16	17	4	11:58 AM	Adult	Soaring	4	0

[1] Minutes that an bald eagle was observed perched are not included.

[2] Flying minutes observed inside the Project area, within the point count boundary, and below 200 meters.

3.2.3 Results Adjacent and Outside the Project area

Stantec documented 22 bald eagle observations at points adjacent to the Project area (Table 5).

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Table 5. Location and flight data for bald eagles observed outside the Project area during bald eagle use surveys, Downeast Wind Project, 2015–2016.

Date	Round	Point	Time	Age	Behavior	Total Minutes[1]
2015						
9/16	1	1	10:36 AM	Adult	soaring	2
9/16	1	1	11:03 AM	Adult	soaring	2
11/19	4	13	8:10 AM	Adult	soaring	2
2016						
1/6	6	1	12:58 PM	Adult	soaring	4
1/25	7	18	7:04 AM	Adult	soaring	4
1/25	7	18	7:04 AM	Adult	NA	4
1/25	7	18	7:04 AM	Adult	NA	6
1/25	7	15	8:44 AM	Adult	soaring	4
2/11	8	18	11:18 AM	Adult	soaring, flap and glide	7
2/29	9	10	1:35 PM	Juvenile	soaring	5
3/3	9	22	7:40 AM	Adult	soaring	7
3/3	9	23	9:50 AM	Adult	flap and glide	4
3/24	10	19	7:55 AM	Adult	soaring	7
3/24	10	19	7:55 AM	Adult	soaring	6
4/14	11	13	7:53 AM	Adult	soaring	4
4/15	11	25	3:08 PM	Adult	soaring	2
5/3	12	15	10:40 AM	Adult	soaring	1
5/3	12	19	12:00 PM	Sub-Adult	soaring	2
5/24	13	25	8:10 AM	Sub-Adult	soaring	3
5/24	13	13	1:48 PM	Adult	soaring	5
6/14	14	19	12:30 PM	Adult	soaring, perched	1
9/7	18	13	1:20 PM	Adult	soaring	3

[1] Minutes that an bald eagle was observed perched are not included.

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Point 19 had the greatest bald eagle occurrence rate outside the Project area (Table 6). Point 19 is nearest to Montegail Pond, which has a historic bald eagle nest on its northern shore. Points 22 and 18 had similar occurrence rates. Point 22 was located in the far north near the abandoned radar station. Point 18 is approximately 2 miles south of Point 19. Montegail Pond, Point 18, Point 19, and Point 22 are outside the current Project area. Stantec found the Montegail Pond nest to be unoccupied during 2016 aerial nest surveys.

Mean use by bald eagles within the Project area (0.16 eagle minutes/hr of observation) was lower than observed at points outside the Project area (0.49 eagle minutes/hr of observation). Excluding point 9, overall mean use within the Project was very low (0.10 eagle minutes/hr of observation).

Table 6. Bald eagle minutes at points outside the Project area, Downeast Wind Project, 2015–2016.

Point	Survey Effort (hours)	Total Bald Eagle Minutes	Total Bald Eagle Minutes/Survey Hour
1	18	8	0.44
10	18	5	0.28
11	8	0	0.00
12	1	0	0.00
13	18	14	0.78
14	1	0	0.00
15	18	5	0.28
16	17	0	0.00
17	16	0	0.00
18	16	21	1.31
19	10	17	1.70
20	5	0	0.00
21	5	0	0.00
22	5	7	1.40
23	5	4	0.80
24	5	0	0.00
25	5	5	1.00
New 20	5	0	0.00

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3.2.4 Seasonal Eagle Use

For all points, bald eagle use was concentrated in the winter and spring months of January through May (Figure 3). The rate of bald eagle occurrence was highest in the month of March at points inside and outside the Project area. No eagles were observed in the months of June, July, October, and December.

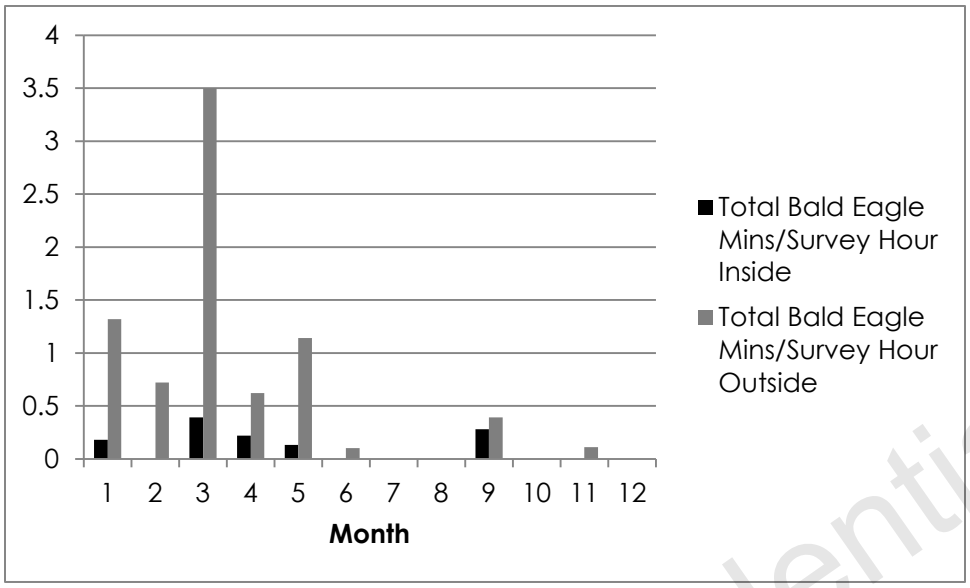


Figure 3. Bald eagle Occurrence Rates at All Survey Points by Month, Downeast Wind Project, 2015–2016.

3.2.5 Incidental Species

3.2.5.1 Non-bald eagle species

Bird species observed incidentally during bald eagle use surveys are listed in Appendix C Table 1. No federally listed species were observed, 1 state-listed threatened species: upland sandpiper (*Bartramia longicauda*) was recorded at Points 23 and 24 which are outside of the current Project area, and 5 state species of special concern were recorded, 2 outside the project area (black-and-white warbler (*Mniotilta varia*), chestnut-sided warbler (*Setophaga pensylvanica*)) and 3 within the project area (great blue heron (*Ardea herodias*), northern harrier (*Circus cyaneus*), and white-throated sparrow (*Zonotrichia albicollis*)). The single great blue heron was observed flying north between 50 and 100 m agl near Point 5 on 16 September 2015.

Stantec also observed a flock of approximately 200 shorebirds, the majority of which were semipalmated plovers (*Charadrius semipalmatus*), adjacent to Point 5 on 6 September 2016. The flock was present for the entire hour of survey, and individuals were loafing and feeding. The biologist returned to the site on 7 September and documented that the flock was no longer there. No other shorebirds (aside from upland sandpiper) were observed during bald eagle point count surveys.

4.0 DISCUSSION

One bald eagle nest, Nest 624A on the northeastern shore of Schoodic Lake, is within the Project area. The other bald eagle nests are over 3 miles from the current Project area.

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Nest 624A was found to be unoccupied during 2016 aerial nest flights. Bald eagle activity in the vicinity of this nest as assessed during bald eagle use surveys was low; in 18 survey hours, only 1 bald eagle was observed at Point Count 3, approximately 0.25 miles to the east of the lake. No bald eagles were observed at Point New 21, 0.25 miles north of the lake, and Point New 22, 0.25 miles northwest of the lake. These 2 points were surveyed 5 times.

The majority of bald eagle observations recorded outside the Project area occurred around Montegail Pond. Despite the fact that this nest was found to be unoccupied in 2016, relative to results from other survey points adjacent to the Project area, bald eagle activity was highest in the vicinity of this nest. Nonetheless, this nest is located outside the area currently proposed for development.

Mean use by bald eagles within the Project area was lower than observed at points outside the Project area. Excluding point 9, overall mean use within the Project was very low. At all points, bald eagle use was concentrated in the winter and spring months of January through May, which corresponds with the period when eagles migrate or make local movements to breeding grounds, create or repair nest sites, perform courtship displays, and lay and incubate eggs. Activity at points inside and outside the Project area peaked in March, when eagles construct nests and some individuals lay eggs. The time period of egg laying in Maine is broad, from late February to early May[4]. Eagle use of the Project area was observed to be extremely low or non-existent in months between May and December, when fledging occurs, juveniles and adults make localized movements between feeding areas, and some eagles migrate southward.

Behaviors thought to be associated with greater collision risk at wind projects include courtship displays, territorial displays, and foraging (USFWS 2013[5]). Young birds practicing flying during their first summer may be at increased risk of collision. However in 12 months of survey, only 1 territorial display occurred between 2 individuals in the Project area (in March), and no juvenile bald eagles were observed during the post-fledging period. The lack of observations in June or July may have been due to the fact that the nest on Schoodic Lake was inactive in 2016.

To date, there is no documented correlation between pre-construction bald eagle occurrence data and post-construction bald eagle mortality. In Maine, bald eagle use at wind projects has been documented during both pre- and post-construction surveys[6]. Stantec has assessed bald eagle use during project operation at 2 projects with active bald eagle nests within 2 miles of turbines (Stantec 2012a,b; Stantec 2015 b,c). At those projects, eagles continued to use the airspace in the vicinity of turbines, but did not collide with them. Despite a large and growing bald eagle population in Maine[7], no bald eagle fatalities have been recorded at operational wind projects in Maine or New England. This may in part be because bald eagles exhibit a high

[4] Todd, C. S. 2004. Bald Eagle Assessment. Maine Department of Inland Fisheries and Wildlife.
[5] U.S. Fish and Wildlife Service, April 2013. *Eagle Conservation Plan Guidance*. U.S. Fish and Wildlife Service, Washington, DC.
[6] Normandeau Associates 2010; Stantec 2008a-e, 2009a-b, 2010a-b, 2012a-b, 2014a-b, 2015a-c; Woodlot 2005, 2006, 2007a-b.
[7] Todd, C. S. 2004. Bald Eagle Assessment. Maine Department of Inland Fisheries and Wildlife.

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rate of avoidance at wind projects (Sharp et al. 2010; Stantec 2012 a,b; Stantec 2015 b,c). This, combined with the fact that no active nests occur within 4 miles of the Project, and that the majority of behaviors observed were not behaviors that are thought to be associated with greater collision risk at wind projects (courtship, territorial displays, or foraging), indicates that risk of collision and disturbance as a result of the Project likely is very low.

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5.0 LITERATURE CITED

Normandeau Associates. 2010. Year 3 Post-construction avian and bat casualty monitoring at the Stetson I Wind Farm. Prepared for First Wind, LLC.

Sharp, L., C. Herrmann, R. Friedel, K. Kosciuch and R. MacIntosh. 2010. Comparison of pre-and post-construction bald eagle use at the Pillar Mountain wind project, Kodiak, Alaska, Spring 2007 and 2010. Presentation for the National Wind Coordinating Collaborative, Wind Wildlife Research Meeting VIII, October 19-20, 2010, Lakewood, Colorado. Accessed online October 2013 at: http://www.nationalwind.org/assets/research_meetings/Research_Meeting_VIII_Sharp.pdf

Stantec Consulting Services Inc (Stantec). 2008a. Fall 2007 Bird and Bat Migration Survey Report: Visual, Radar and Acoustic Bat Surveys for the Rollins Wind Project. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2008b. Spring 2008 Bird and Bat Migration Survey Report: Visual, Radar and Acoustic Bat Surveys for the Rollins Wind Project. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2008c. Fall 2007 Migration Survey Report Visual, Acoustic, and Radar Surveys of Bird and Bat Migration conducted at the proposed Record Hill Wind Project in Roxbury, Maine. Prepared for Independence Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2008d. Spring 2008 Bird and Bat Migration Survey Report Breeding Bird, Raptor, and Acoustic Bat Surveys for the Record Hill Wind Project Roxbury, Maine. Prepared for Record Hill Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2008e. Spring, Summer, and Fall Post-Construction Bird and Bat Mortality Study at the Mars Hill Wind Farm, Maine. Unpublished report prepared for UPC Wind Management, LLC.

Stantec Consulting Services Inc (Stantec). 2009a. Post-construction Monitoring at the Mars Hill Wind Farm, Maine – Year 2. Unpublished report prepared for First Wind Management, LLC.

Stantec Consulting Services Inc (Stantec). 2009b. Summer and Fall 2009 Avian and Bat Survey Report for the Bull Hill Project in T16 MD, Maine. Prepared for Blue Sky East Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2010a. Spring 2010 Avian and Bat Survey Report for the Bull Hill Wind Project. Prepared for Blue Sky East Wind, LLC

Business Confidential

Stantec Consulting Services Inc (Stantec). 2010b. Stetson I Mountain Wind Project, Year 1 Post-Construction Monitoring Report, 2009. Prepared for First Wind Management, LLC.

Stantec Consulting Services Inc (Stantec). 2012a. Record Hill Wind Project Post-Construction Monitoring Report, 2012. Prepared for Record Hill Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2012b. Rollins Wind Project Post-Construction Monitoring Report, 2012. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2014a. Bull Hill Year 1 Post-Construction Wildlife Monitoring Report, 2013. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2014b. Stetson I Wind Project 2013 Post-Construction Wildlife Monitoring Report, Year 5. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2015a. Bull Hill Wind Project Year 2 Post-Construction Wildlife Monitoring Report, 2014. Prepared for First Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2015b. Record Hill Wind Project Year 2 Post-Construction Wildlife Monitoring Report. Prepared for Record Hill Wind, LLC.

Stantec Consulting Services Inc (Stantec). 2015c. Rollins Wind Project Year 2 Post-Construction Wildlife Monitoring Report, 2014. Prepared for First Wind, LLC.

Woodlot Alternatives, Inc (Woodlot). 2005. A Fall 2005 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Mars Hill Wind Project in Mars Hill, Maine. Prepared for UPC Wind Management, LLC.

Woodlot Alternatives, Inc (Woodlot). 2006. A Spring 2006 Radar, Visual, and Acoustic Survey of Bird Migration at the Mars Hill Wind Farm in Mars Hill, Maine. Prepared for Evergreen Windpower, LLC.

Woodlot Alternatives, Inc (Woodlot). 2007a. A Fall 2006 Survey of Bird and Bat Migration at the Proposed Stetson Mountain Wind Power Project in Washington County, Maine. Prepared for Evergreen Wind V, LLC.

Woodlot Alternatives, Inc (Woodlot). 2007b. A Spring 2007 Survey of Bird and Bat Migration at the Stetson Wind Project, Washington County, Maine. Prepared for Evergreen Wind V, LLC.

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APPENDIX A WORK PLAN FOR 2016 BIRD AND BAT SURVEYS – PROPOSED DOWNEAST WIND PROJECT

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Work Plan for 2016 Bird and Bat Surveys – Proposed Downeast Wind Project

Downeast Wind Project
Washington County, Maine



Prepared for:
Apex Clean Energy, Inc.

Prepared by:
Stantec Consulting Services Inc.

March 17, 2016

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1.0 INTRODUCTION

Apex Clean Energy, Inc. (Apex) is the process of developing the Downeast Wind Project (Project) in Washington County, Maine in the towns of Cherryfield, Columbia, Columbia Falls, Township T19 MD BPP, and Township T25 MD BPP (Figure 1). At this time, the Project is expected to generate up to approximately 180 megawatts of power and include up to 60 turbines, and may be built in 2 phases. Turbines are expected to have a total height of approximately 183 meters (600 ft). Project infrastructure is expected to include underground collector lines, a generator lead transmission line, new and improved roads, a collection substation, an operations and maintenance building, and 2 or 3 permanent meteorological towers.

The Project area consists of actively managed blueberry fields and hills with mixed forest habitat. The western and central portions of the Project area have little topography and contain a network of dirt roads that intersect the blueberry fields. Other habitats in these portions include hedgerows, and a few lakes and ponds. The northern and eastern portion of the Project area is more topographically variable, developed with residences, farms, fallow fields, paved roads, and mixed forest.

In fall 2015, Stantec Consulting (Stantec) initiated eagle use surveys at the Project to assess eagle activity/presence consistent with the US Fish and Wildlife Service's (USFWS) *Eagle Conservation Plan Guidance* (ECPG; 2013), and bird and bat surveys following the Maine Department of Inland Fisheries and Wildlife's (MDIFW) *Curtailment Policy and Wind Power Preconstruction Study Recommendations* (MDIFW Recommendations; June 2015). This work plan outlines the bird and bat studies completed in 2015 and planned for completion in 2016.

- Eagle Activity Surveys (fall 2015 to fall 2016)
- Aerial Bald Eagle Nest and Great Blue Heron Rookery Survey (spring 2016)
- Nocturnal Migration Radar Surveys (fall 2015 and spring 2016)
- Diurnal Raptor Migration Surveys (fall 2015 and spring 2016)
- Breeding Bird Surveys and Upland Sandpiper Surveys (late spring/summer 2016)
- Acoustic Bat Monitoring (fall 2015, and spring/summer/fall 2016)

It is our intention to reconvene with MDIFW following completion of spring surveys to determine what studies should be conducted at the Project in fall 2016.

2.0 BIRD AND BAT SURVEYS

2.1 EAGLE ACTIVITY SURVEYS

The objective of eagle activity surveys is to provide input data for modeling to predict risk to eagles at the Project and inform siting decisions. Eagle point count surveys were initiated in mid-September 2015, and are planned to continue for at least 1 year throughout the Project area.

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Surveys consist of 1 hour point counts, with each point surveyed at approximately 3 week intervals. In fall 2015, 14 points[1] were surveyed in the southern and western portions of the Project area. In spring 2016, 6 additional points were added in the northern and eastern portions of the Project area, for a total of 20 points. An 800-meter radius plot is evaluated at each point, covering 2 square kilometers. Points are positioned to optimize the view shed of the Project area. Due to the low, flat cleared landscape throughout much of the Project area, most points in the southern and eastern portions have a nearly 360-degree view of the surrounding landscape.

Surveys will occur in all weather conditions except when visibility is poor, such as during heavy fog or rain events, and will be distributed throughout the daylight period. The order of surveys will be altered to provide representative spatial and temporal sampling throughout the Project. Surveys will end in mid-September 2016, resulting in 18 rounds of surveys.

Surveyors will also document any other raptors observed during eagle activity surveys. Data collected will include species, age, and sex, as possible, flight behavior, flight height, flight time, and weather conditions. Flight locations will be drawn on maps of the Project area.

A report summarizing the eagle use data will be provided after 1 year of data collection is complete. The analyses will evaluate seasonal and spatial use of the Project by eagles using standard metrics to inform siting decisions. The report will also include a list of other raptor observations in the project area including species, date observed, and minimum height inside the Project area. GIS shapefiles of the survey locations and eagle observations and flightpaths will be provided with the survey report.

2.2 AERIAL BALD EAGLE NEST, GREAT BLUE HERON ROOKERY, AND RAPTOR NEST SURVEYS

The objective of the aerial bald eagle nest, great blue heron rookery, and raptor nest surveys is to evaluate siting options and assess impacts to nesting eagles, great blue heron, and raptors at the Project.

In spring 2016, Stantec will conduct 1 aerial bald eagle nest and great blue heron rookery flight. The survey will occur in early to mid-May, before leaf out conditions, to document the status of existing bald eagle nests and great blue heron rookeries and to search for new nests and rookeries within 4 miles of the Project.

Prior to the survey, Stantec will review results of previous flights in the vicinity of the Project area and any information provided by MDIFW regarding known active and historic eagle nest locations near the Project. Stantec will notify USFWS before the flights are conducted in accordance with USFWS Bald Eagle Management Guidelines (USFWS 2007).

[1] The final locations of the 14 eagle point counts were determined prior to the third survey round and were based on landowner access permissions and reconnaissance survey for view shed. Some points surveyed during rounds 1 and 2 were moved or eliminated.

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The survey will use a transect based approach to identify suitable nesting/rookery habitat within 4 miles. Transects will be spaced approximately 0.25 miles apart, with 2 observers searching opposite sides of the plane. Flight paths will deviate from the transects to assess identified suitable habitat, nests, or rookeries more closely. Additionally, low altitude passes, approximately 500 to 1,000 ft above ground level will be completed around the shorelines of major rivers, lakes, ponds, and flowages. Data on new and previously identified nest and rookery locations will be documented during the flight. Incidental observations of adult bald eagles and other visible raptor nests (e.g. osprey nests) will also be recorded. Stantec will also survey the known eagle nest on Montegail Pond. If the nest is not detected during the aerial survey, it will be ground evaluated to determine if the nest is still intact and/or active.

After completion of the survey, we will summarize methods and results in a memo report which also will include data collected during the eagle activity surveys (Section 2.1). The report will include a map showing the locations of nests and rookeries identified (or those confirmed as no longer intact if applicable). GIS shapefiles of track log, survey area and nest/rookery locations will be provided with the survey report.

2.3 NOCTURNAL RADAR MIGRATION SURVEYS

The objective of the nocturnal radar migration surveys is to document patterns of nocturnal migrants at the Project. This information has been used by MDIFW to assess mortality risk. However, Stantec and others in the industry have recognized that reliance on pre-construction radar surveys as an indicator of post-construction mortality risk is challenging as they have not proven to accurately predict turbine-related bird and bat fatality patterns[2]. Evaluation of pre-construction surveys and post-construction mortality estimates at operating projects in Maine and New England has shown that there is no statistical correlation between pre-construction survey results (radar passage rates) and post-construction bird fatality estimates (Stantec unpublished data).

In order to follow MDIFW Recommendations at the Project, Stantec initiated radar surveys in early fall 2015 and will conduct radar surveys in spring 2016. Surveys utilize an X-band marine radar unit to document the abundance, timing, and flight altitudes of night-migrating species. The fall survey site was located in the west-central portion of the Project area. At this location, topography and surrounding tree height provide a nearly unobstructed view with less than 30% ground clutter, as called for in the MDIFW Recommendations. In spring 2016, Stantec will move the radar further north to an area that is central to the entire Project area as depicted in Figure 1. Stantec conducted 20 survey nights in fall 2015 between 9 September and 30 October and will conduct 20 nights at the new location in spring 2016, between 15 April and 1 June. Surveys will be conducted on nights with generally clear weather without long periods of substantial

[2] Ferrer, M., M. de Lucas, G.F.E. Janss, E. Casado, A.R. Muñoz, M.J. Bechard, and C.P. Calabuig. 2012. Weak relationship between risk assessment studies and recorded fatality at wind farms. Journal of Applied Ecology 49:38–46.

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precipitation. On nights when periodic showers are forecasted, surveys will occur between showers to collect information on migration activity during inclement weather.

Radar surveys will include up to 12 hours of data collection per night alternating every 10 minutes between vertical and horizontal mode. In horizontal mode, the antenna spins horizontally to survey the airspace around the radar and detects the number of targets and their flight direction as they pass through the Project site. By analyzing the echo trail, the flight direction and flight speed of targets can be determined. In vertical mode, the radar unit is tilted 90° to survey the airspace above the radar. In vertical mode, target echoes do not provide directional data, but do provide information on the altitude of targets passing through a vertical radar beam with a 20° angle of view. Horizontal data will be used to calculate passage rates and flight direction; vertical data will be used to calculate flight heights and percent of migrants flying below proposed turbine height.

Radar data will be post-processed using analysis software and methods developed by Stantec. Digital image data will be converted to numerical data for the calculation of migration statistics. Insect data will be separated from other target data (i.e., birds and bats) based on target flight speed. Stantec will calculate and report the average hourly and nightly passage rate (targets/kilometer/hour), seasonal passage rate, nightly and seasonal flight direction, and nightly and seasonal flight height. The percentage of targets flying below the height of the proposed turbines will be calculated on a nightly basis. Data will be compiled into a radar migration report after radar migration surveys are completed.

2.4 DIURNAL RAPTOR MIGRATION SURVEYS

The objective of the diurnal raptor migration surveys is to document species composition, timing, and flight patterns of migrating raptors at the Project to assist in evaluating siting decisions. It should be noted that while pre-construction data provides a snap-shot of raptor activity in an area at the time it was sampled, pre-construction data do not predict levels of post-construction mortality in raptors. For example, the Pennsylvania Game Commission prepares annuals reports in the form of a Cooperative Agreement that summarize results of pre and post-construction bird and bat surveys conducted at all Pennsylvania projects in an effort to assess the impacts of operational wind projects on local and migrant bird and bat populations. In 2012, Taucher et al.[3] reported that despite the volumes of pre-construction and post-construction data (45 sites) included in these assessments, they have not been able to develop a model that predicts the extent of bird or bat mortality.

Stantec completed raptor migration surveys in fall 2015, and will do so again in spring 2015. From 9 September to 25 November 2015, 24 survey days were completed from the raptor migration survey location shown in Figure 1. The survey site in fall 2015 was located a quarter mile from the

[3] Taucher, J., T. Librandi Mumma, W. Capouillez. 2012. Pennsylvania Game Commission Wind Energy Voluntary Cooperation Agreement Third Summary Report. Available online at: http://www.pccd.state.pa.us/portal/server.pt/document/1378280/pgc_3rd_wind_energy_summary_report_2012_pdf

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radar site. It was on flat ground and had an extensive view. In spring 2016, Stantec will move the raptor location northward to a location that is central and prominent to the Project area (Figure 1). Spring surveys will be conducted between 1 March and 15 June at a rate of 2 surveys every 7 days, pending suitable weather conditions. Surveys will occur on days with optimal migration weather, which typically include fair days with thermal development and winds generally from a southerly direction. Raptor surveys will be conducted from 9 am to approximately 2 hours before sunset. Binoculars will be used to aid in identification. In addition to raptors, incidental observations of songbirds and migrating flocks or individuals of large birds such as waterfowl, wading birds, and shorebirds will be documented.

Data for raptors will be documented on Stantec raptor datasheets and include species, age, and sex, as possible, flight behavior, flight height, flight time, flight locations, flight paths, and weather conditions. Data will be analyzed and summarized by hour, day, and for the season. Data will be compiled and results discussed in a raptor migration report.

2.5 BREEDING BIRD SURVEYS

The objective of the breeding bird surveys is to assess species composition, abundance, diversity, and distribution of songbirds relative to available habitat in the Project area during the breeding season to assist in evaluating siting decisions, in accordance with MDIFW Recommendations.

Breeding bird surveys will consist of point count surveys designed to document singing male birds and responses of territorial raptors breeding in the Project area. Stantec will conduct breeding bird surveys at 20 point count locations in the various habitat types present throughout the Project area. Due to the homogenous nature of the habitat in the southern and western portions of the Project, 20 point count locations is expected to sufficiently capture the breeding bird composition of the Project area. A GPS point will be taken at each location.

Surveys will occur in 3 rounds: 1 in May and 2 in June. Surveys will be scheduled to target fair-weather days. During each round, each point will be visited and birds seen or heard will be documented during a 10-minute sampling period. Immediately after each 10-minute period for points located in forested habitat, the observer will broadcast a great horned owl (*Bubo virginianus*) call and northern goshawk (*Accipiter gentilis*) call, alternating between species, for 5 minutes to attempt to observe any approaching or territorial raptors, indicative of potential breeders, proximal to the point.

A separate survey report will describe the habitat at each point count location, methods, and results, and will include a discussion section. Data will be analyzed and summarized to determine species richness, relative abundance, species frequency, and community diversity for each type of habitat available in the Project area and for the survey as a whole.

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2.6 ACOUSTIC BAT MONITORING

The objectives of the acoustic bat monitoring survey are to assess frequency of rare species presence at the Project, document seasonal patterns in bat activity and species presence, and to characterize conditions during which bats are present near the rotor zone.

Acoustic surveys began in fall 2015, when Stantec deployed 2 bat detectors in the single Project meteorological (met) tower (at ~5 m and ~20 m in height) and at 4 additional sites in the Project area in trees at ~5–8 m in height (the shore of the southern pond of Myer's Ponds, a hedgerow near the radar and raptor survey locations, and 2 forest edges in the southwest portion of the Project). Year 2016 acoustic surveys will expand on previous efforts and include a total of 11 detectors deployed from 1 April 2016 until 31 October 2016. This survey window is longer than suggested in MDIFW Recommendations, but was recommended by MDIFW during a meeting on 23 February 2016 between MDIFW, APEX, and Stantec. The 2016 survey period will encompass the spring migration, summer residency, and fall migration seasons for bats. In addition to the 6 detector locations used in fall 2015, Stantec will deploy an additional detector on the onsite met tower at ~40 m in height. Stantec will also deploy an additional 4 detectors in trees at ~5–8 m in new locations in the northern portion of the Project area, resulting in 11 detectors total. If a second met tower is deployed in the Project area, we will also deploy detectors at heights of ~40 m and ~20 m on the tower, for a total of 13 detectors.

A combination of SM3 (Wildlife Acoustics ©) and Anabat (Titley Electronics Pty Ltd.) detectors will be used for data collection. Specifically, we will use SM3 detectors in the met tower at heights of ~40 m and ~20 m. Detectors will sample from approximately ½ hour before sunset until ½ hour after sunrise on a nightly basis throughout the survey periods. Stantec will visit each detector at a maximum interval of every 3 weeks to download and store data and maintain equipment.

Acoustic data will be analyzed using Kaleidoscope (classifier version 3.1.0) and BCID (version 2.7b), approved USFWS automated analysis programs. Stantec will then visually examine any calls identified as a state or federally listed species. Additionally, automated programs calculate a nightly maximum likelihood estimator (MLE) to assess the likelihood that individual species are present at a given location on a single night. According to the USFWS *2015 Range-Wide Indiana Bat Summer Survey Guidelines* (April 2015) a MLE of less than 0.05 indicates likely presence. Stantec will compare file-level identification results for each automated program and manual vetting as well as nightly MLE values to evaluate patterns in rare species detection such as seasonality, frequency, and distribution across habitats.

Because automated analysis programs sometimes filter out poor quality bat passes, Stantec will also visually analyze all files recorded by the detectors deployed near the rotor zone in the met tower (detectors at ~20 and ~40 m in height) to ensure that all bat passes are included in analysis of activity versus conditions in the rotor zone, and to allow better comparability with results of similar studies at other Projects. Stantec will determine the temperature (hourly average) and wind speed (10-minute average) at which each bat pass occurred to quantify the conditions during which bats were active near the rotor zone. Stantec will also evaluate

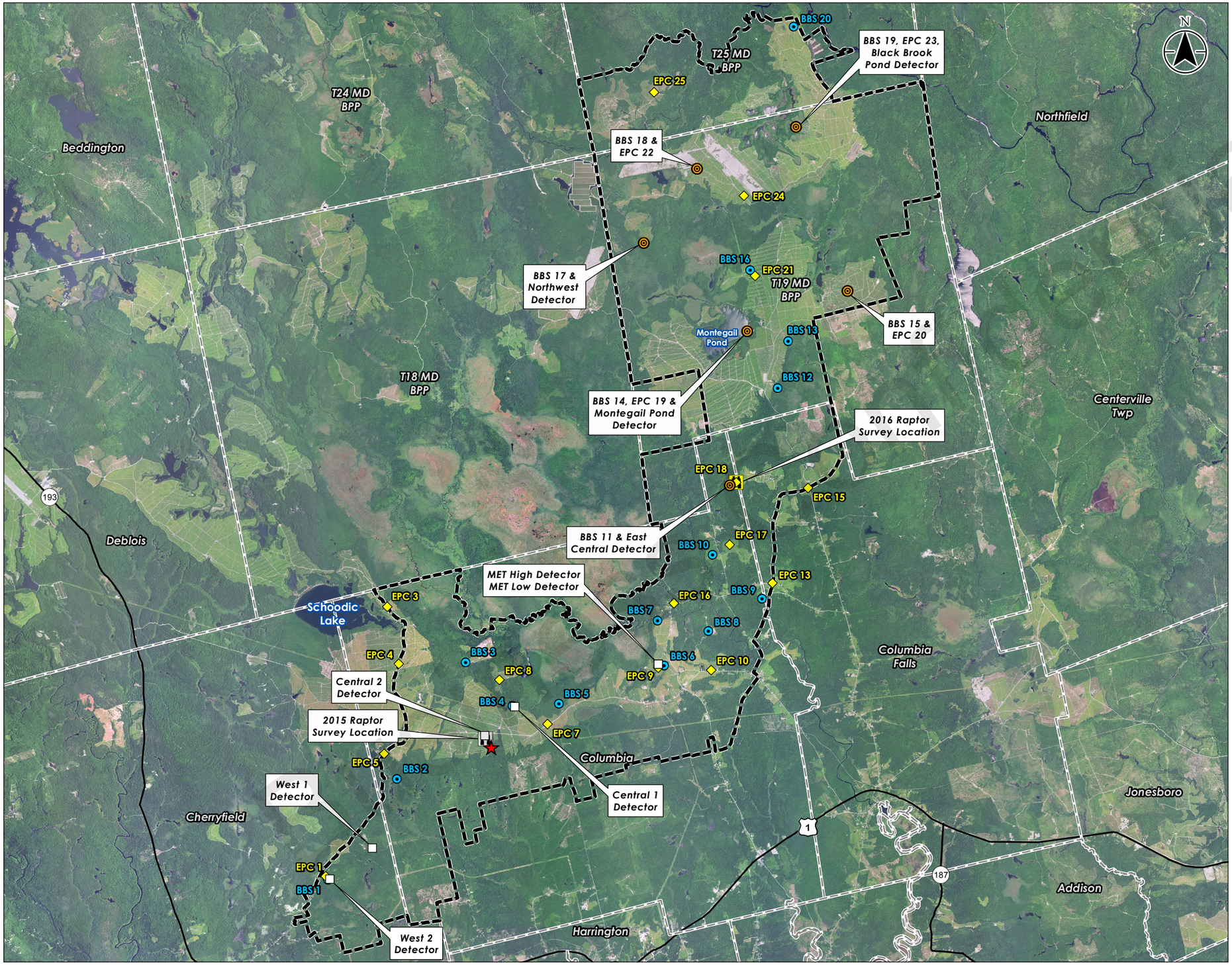
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seasonal and temporal patterns in bat activity near the rotor zone based on acoustic data from the detectors deployed at ~20 and ~40 m. Methods, results, and a discussion will be included in an acoustic bat report after the completion of the survey.

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FIGURE 1

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Legend

- 2015 Radar Location
- 2015 Raptor Survey Location
- 2016 Raptor Survey Location
- 2016 Acoustic Bat Survey Location
- 2016 Breeding Bird Survey (BBS) Point Location
- 2016 Eagle Survey Point Count (EPC) Location
- 2016 Multiple Surveys at Same Location
- Approximate Project Area (2015-11-23)
- Town Boundary

0 1.5 3 Miles

1" = 1.5 miles (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 19N
2. Town boundary data provided by the Maine Office of GIS (MEGIS).
3. 2015 National Agriculture Imagery Program (NAIP) aerial orthoimagery provided by USDA's Farm Service Agency.



Project Location
Washington County, Maine

195601142
Prepared by DLJ on 2015-12-14
Quality Review by KWH on 2015-12-15
Independent Review by SBG on 2015-12-16

Client/Project
Apex Clean Energy, Inc.
Apex Downeast Wind Project
Washington County, Maine

Figure No.
1

Title
2016 Work Plan Bird and Bat Survey Locations

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

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APPENDIX B INCIDENTAL SPECIES

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Appendix B Table 1. Bird species observed incidentally during bald eagle use surveys, Downeast Wind Project, 2015–2016.

Species Common Name	Species Scientific Name	No. Observations	Point Locations
American black duck	*Anas rubripes*	1	9
American crow	*Corvus brachyrhynchos*	117	1, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, New 21, New 22, New 23, New 24
American goldfinch	*Spinus tristis*	5	10, 13, 16
American kestrel	*Falco sparverius*	18	1, 3, 4, 5, 7, 9, 10, 13, 15, 21, 7a, New 25
American robin	*Turdus migratorius*	61	1, 3, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 19, 20, 22, 23, 25, New 21, New 24, New 25
bald eagle	*Haliaeetus leucocephalus*	3	1, 5
belted kingfisher	*Megaceryle alcyon*	2	9, New 22
black-and-white warbler	*Mniotilta varia*	1	19
black-capped chickadee	*Poecile atricapillus*	42	1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18, 19, 20, 24, New 21
blue jay	*Cyanocitta cristata*	38	1, 3, 4, 5, 8, 9, 10, 11, 13, 14, 15, 17, 18, 20, 22, 24, New 22, New 24
blue-headed vireo	*Vireo solitarius*	3	15, 16, 19
broad-winged hawk	Buteo platypterus	20	3, 4, 5, 7, 9, 11, 12, 13, 14, 17, New 25
brown thrasher	*Toxostoma rufum*	4	17, 22, 23
Canada goose	*Branta canadensis*	31	5, 9, 10, 22
cedar waxwing	*Bombycilla cedrorum*	16	1, 3, 7, 11, 13, 15, 18, New 24, New 25
chestnut-sided warbler	*Setophaga pensylvanica*	2	11, 17
chipping sparrow	*Spizella passerina*	12	13, 15, 16, 19, 21, New 21, New 22
cliff swallow	*Petrochelidon pyrrhonota*	3	7, 9, 10
common grackle	*Quiscalus quiscula*	12	16, 19, New 22
common loon	*Gavia immer*	5	17, 19, New 20
common nighthawk	*Chordeiles minor*	1	17
common raven	*Corvus corax*	176	All points besides 6 and 8a
common yellowthroat	*Geothlypis trichas*	3	10, 16, New 21
Cooper's hawk	Accipiter cooperii	2	10, 13
dark-eyed junco	*Junco hyemalis*	7	3, 10, 13, 15, 16, 18
double-crested cormorant	*Phalacrocorax auritus*	1	19
downy woodpecker	*Picoides pubescens*	1	16
eastern phoebe	*Sayornis phoebe*	2	13, 16
European starling	*Sturnus vulgaris*	2	13, 22
great blue heron	*Ardea herodias*	3	5, 7
hermit thrush	*Catharus guttatus*	2	16, 23
killdeer	*Charadrius vociferus*	1	9
mallard	*Anas platyrhynchos*	2	5
merlin	Falco columbarius	1	New 23
mourning dove	*Zenaida macroura*	16	1, 4, 5, 10, 13, 16, 18, 19, 21, 25
northern cardinal	*Cardinalis cardinalis*	2	1, 18
northern flicker	*Colaptes auratus*	6	7, 15, 18, 19, 21, 22
northern harrier	*Circus cyaneus*	20	1, 3, 4, 7, 8, 15, 16, 20, 21, 7a
northern parula	*Setophaga americana*	2	16, 19
osprey	Pandion haliaetus	5	19, 22, New 21
palm warbler	*Setophaga palmarum*	4	New 22

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2015-2016 BALD EAGLE USE AND BALD EAGLE NEST AND HERON ROOKERY SURVEYS FOR THE DOWNEAST WIND PROJECT

November 10, 2016

Species Common Name	Species Scientific Name	No. Observations	Point Locations
pileated woodpecker	*Dryocopus pileatus*	1	15
red-breasted nuthatch	*Sitta canadensis*	2	3, 16
red-winged blackbird	*Agelaius phoeniceus*	1	22
ruby-crowned kinglet	*Regulus calendula*	1	19
red-tailed hawk	Buteo jamaicensis	3	1
ruby-throated hummingbird	*Archilochus colubris*	1	13
ruffed grouse	*Bonasa umbellus*	2	16, 19
savannah sparrow	*Passerculus sandwichensis*	10	4, 8, 13, 15, 16, 17, 18, 21, New 22
semipalmated plover	*Charadrius semipalmatus*	200	5
sharp-shinned hawk	Accipiter striatus	3	10, 13, 15
snow bunting	*Plectrophenax nivalis*	11	3, 5, 8, 11, 20, 22, 23
song sparrow	*Melospiza melodia*	13	5, 7, 10, 13, 16, 17, 18, 22, 24
tree swallow	*Tachycineta bicolor*	2	3, 22
turkey vulture	Cathartes aura	51	1, 3, 5, 7, 8, 9, 10, 13, 18, 19, 24, 25, 7a, New 20, New 21, New 23, New 24
upland sandpiper	*Bartramia longicauda*	5	23, 24
vesper sparrow	*Pooecetes gramineus*	5	21, 24, New 21
white-throated sparrow	*Zonotrichia albicollis*	5	5, 13, 16, 17, 23
wild turkey	*Meleagris gallopavo*	2	25
wood duck	*Aix sponsa*	1	16
yellow-bellied sapsucker	*Sphyrapicus varius*	2	5, 15
yellow-rumped warbler	*Setophaga coronata*	53	13, 16, 19, 21, 22, New 21, New 22
unidentified bird	*Aves (gen, sp)*	2	17, New 22
unidentified raptor	*Accipitridae (gen, sp)*	13	9, 10, 13, 15, 17, 18, 7a
unidentified sparrow	*Emberizidae (gen, sp)*	4	8, 10, 20, New 25
unidentified warbler	*Parulidae (gen, sp)*	1	1

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Eagle Use Survey Report
Proposed Downeast Wind Project

Town of Columbia, and Unorganized Territories of
T24 MD BPP and T18 MD BPP,
Washington County, Maine

Prepared for:

Downeast Wind, LLC
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April 2021

EXECUTIVE SUMMARY

TRC conducted eagle point-count surveys within the Downeast Project (Project) areas from January 2019 to February 2020. Surveys were conducted to collect information on eagle use within the Project area.

TRC established twelve point-count locations, which were surveyed from January 2019 to February 2020. Observers recorded all eagles observed from the site. Eagles detected within an 800-meter (m) radius and within 200 m above ground level (AGL) of the observer during the 120-minute point-count surveys were recorded as risk minutes. The total area surveyed represents 32 percent of the minimum convex polygon. Each survey point was monitored once every month for two daylight hours. In addition, any eagles or listed species were recorded incidentally (e.g. outside of survey times or survey plot), if observed within the Project area.

A total of 12 bald eagles were observed within the 800m radius by 200m AGL survey area. No golden eagles were observed during surveys. Northern harrier, a State of Maine Species of Special Concern was observed 3 times during eagle use surveys.

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Appendix B Incidental Species Observations
Appendix C Survey Data Sheets (provided as zipped file)

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

The Downeast Project (Project) is a proposed 126 MW wind generating facility located in Washington County, ME. The Project area is comprised of commercial agriculture and forestry land. Bald eagles (*Haliaeetus leucocephalus*) are known to occur in the area year-round and golden eagles (*Aquila chrysaetos*) could potentially migrate through the area in spring and fall. The following survey protocol was developed in coordination with USFWS (February 20, 2019).

1.2 EAGLE SURVEYS PREVIOUSLY PERFORMED AT THE SITE

Eagle use surveys were previously performed at the Project site September 2015 through September 2016 by Stantec. These surveys were done in accordance with the ECPG at 31 points, with 1-hour surveys performed every 3 weeks for 133 hours of survey within the Project Area.

Aerial eagle nest surveys were also performed in the Project vicinity during the spring of 2016, 2017, and 2019. Surveys consisted of five flights (April 13 and May 19, 2016, and April 10 and May 24, 2017, May 22, 2019). During the 2016 surveys a total of seven bald eagle nests were identified within the survey area: two occupied and five unoccupied. One occupied nest was a new nest. During the 2017 surveys five bald eagle nests were identified within the survey area: three occupied and two unoccupied. In 2019 one bald eagle nest on Schoodic Lake was located within the Project vicinity and was active during these surveys.

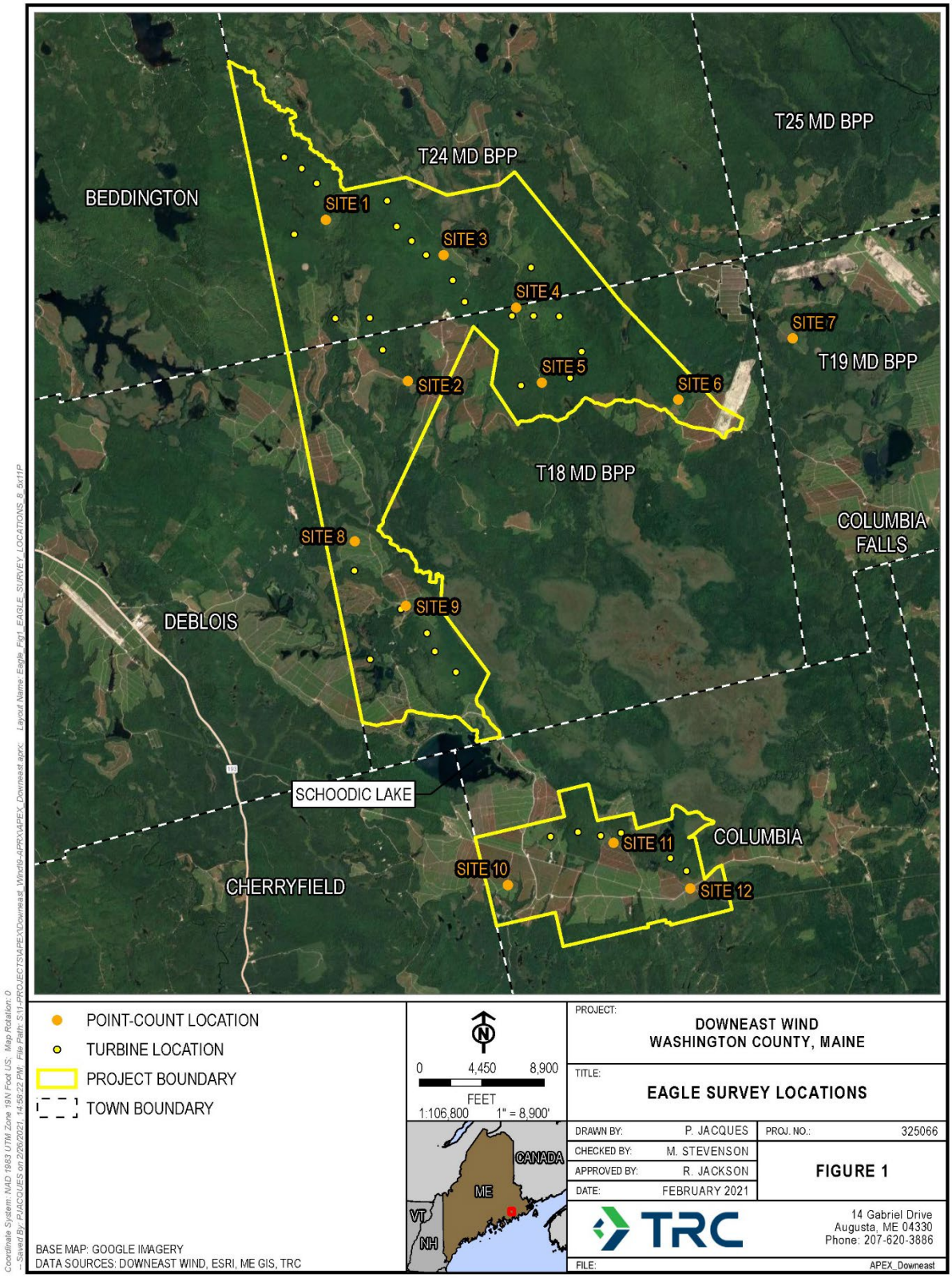
1.3 PURPOSE AND OBJECTIVES

The purpose of the eagle use survey was to determine the presence and Project area use by bald and golden eagles year-round. Data was used to develop a qualitative assessment of general patterns of use by those species in the vicinity of the proposed Project.

The main objectives of eagle surveys are to:

- Document presence/absence of eagles at the site;
- Document and map use of the Project Area by eagles, including nesting individuals; and
- Document and map use of the Project Area by any raptor species observed during surveys.

Figure 1: Eagle Survey Locations



2.0 SURVEY PROTOCOL

2.1 SURVEY SITE SELECTION

2.1.1 Eagle Use Survey

A total of 12 stationary point-count observation points were selected in the Project area based on USFWS guidance (Figure 1). The total area surveyed represents 32 percent of the minimum convex polygon.

2.2 NUMBER AND TIMING OF USE SURVEYS

2.2.1 Eagle Use Survey

Surveys were performed at all eagle use survey sites for an entire year. Sites were surveyed from January 2019 to February 2020. Each survey point was monitored once every month for two daylight hours. Surveys were completed in weather conditions where the 800-m horizontal and 200-m vertical survey area was visible. All surveys were completed by a qualified biologist who was trained and familiar with the survey protocol.

2.3 SURVEYOR PREPAREDNESS

Surveyors were familiarized with the area, including tree height and known distances, prior to starting eagle use surveys. Knowledge of these parameters was used in estimating flight height. Each surveyor was trained in the methodology and calibrated themselves to the survey site prior to commencing survey activity. All surveyors were experienced in bird identification.

2.4 DATA COLLECTION

Detailed weather and bird observation data was collected during eagle use surveys on digital data sheets accessed by smart phone or tablet. Data forms were developed based on those utilized by Hawk Migration Association of North America (HMANA) for raptor migration, using their suggested guidelines. An example data sheet is provided in Appendix A. Flight paths and behavior of any raptors observed were recorded on maps and a digital data sheet. Data was collected for any raptor species observed at the Project Area.

3.0 RESULTS

3.1 EAGLE USE SURVEY RESULTS

3.1.1 Survey Effort

A total of 286 hours of survey were completed during the 2019 eagle use surveys (see Table 1). During this time, 14 bald eagles were observed within the Project area, 12 of which were within the survey area. No golden eagles were observed.

Table 1: Summary of Survey Effort

Survey Period	Sites Surveyed	Weather Conditions During Survey	Comments
January	*AD-1 through AD-7*	*Drizzle/light rain during three of the surveys, did not impact visibility within survey area. Other surveys clear.*	
February	*AD-2 through AD-7*	*Clear weather for all surveys, full visibility.*	*Site AD-1 inaccessible due to road conditions at site*
March	*AD-1 through AD-12*	*Light to moderate winds, full visibility.*	*Surveys sites in Downeast I Project area added.*
April	*AD-1 through AD-12*	*Light drizzle during survey at AD-10, did not impact survey visibility. Calm winds and no precipitation during all other surveys.*	
May	*AD-1 through AD-12*	*Drizzle/rain during five of the surveys, with no impact to visibility requirement. Clear conditions for all other surveys.*	
June	*AD-1 through AD-12*	*Four surveys during haze or fog with adequate visibility for entire survey. All other survey days with unlimited visibility of the survey area.*	*First 20-30 minutes of survey at site AD-7 had visibility around 500m. The entire 800m survey area was clear after this time.*
July	*AD-1 through AD-12*	*All surveys with unlimited visibility. Drizzle during two surveys and a brief 10 min thunderstorm during the survey at AD-11.*	
August	*AD-1 through AD-12*	*Clear weather with unlimited visibility for all surveys,*	
September	*AD-1 through AD-12*	*No visibility issues, no precipitation.*	
October	*AD-1 through AD-12*	*Unlimited visibility for all surveys.*	
November	*AD-1 through AD-12*	*Drizzle during five surveys, rain during one survey, all other surveys were dry. Visibility was always far beyond the survey area.*	

Survey Period	Sites Surveyed	Weather Conditions During Survey	Comments
December	*AD-1 through AD-12*	*Calm, clear days with unlimited visibility*	
January	*AD-8 through AD-12*	*Rain recorded during one survey, unlimited visibility.*	*Only surveys completed in Downeast I Project area to achieve full year of survey.*
February	*AD-8 through AD-12*	*Light icing recorded for one survey, unlimited visibility*	*Only surveys completed in Downeast I Project area to achieve full year of survey*

3.1.2 Eagle Use by Site

Bald eagles were observed at 5 of 12 sites. Site 12 had the highest number of individual bald eagles observed (Table 2). The highest number of total eagle minutes recorded at a site was 59 minutes at site AD-10. This site had one 45-minute observation of a juvenile bald eagle that flew low into the site, then rose on thermals before gliding out of sight to the west. Only one eagle was observed during survey that never crossed into the survey site. This observation took place at survey site AD-10, and the minutes of the observation were included in the eagle minutes calculation for that site.

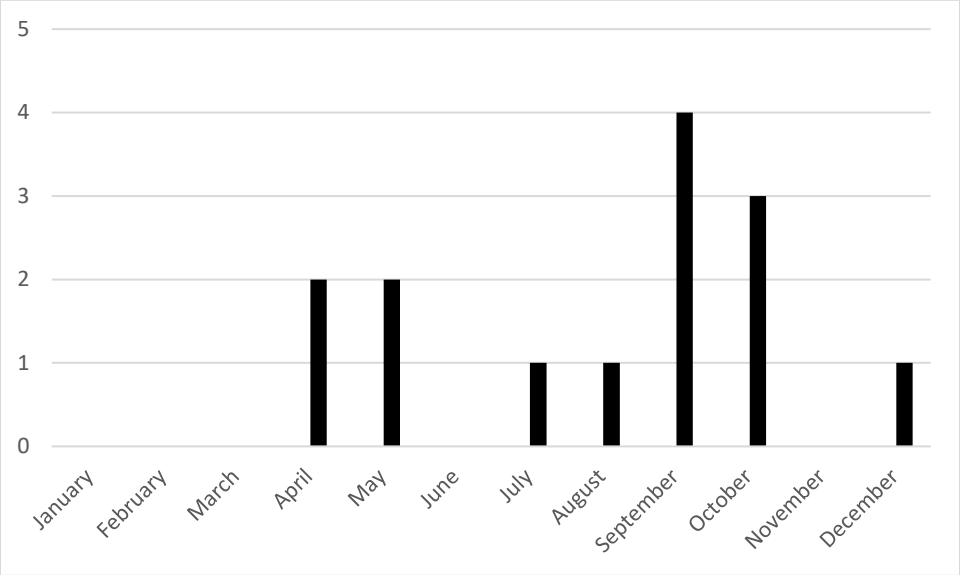
Table 2: Eagle Use and Exposure by Site

Site	Survey Hours	Number of Bald Eagles Observed	Observed Eagle Minutes	Eagle Minutes/ Survey Hour
AD-1	22	0	-	-
AD-2	24	1	12	0.50
AD-3	24	4	16	0.67
AD-4	24	0	-	-
AD-5	24	0	-	-
AD-6	24	0	-	-
AD-7	24	0	-	-
AD-8	24	0	-	-
AD-9	24	0	-	-
AD-10	24	3*	59	2.46
AD-11	24	1	1	0.04
AD-12	24	5	35	1.46

* Eagles outside of survey area for entire observation

Eagle use observed at the Project was highest during September (Figure 2). No eagles were observed during the surveys in the months of January, February, March, June, or November.

Figure 2: Eagle Observations by Month



3.2 INCIDENTAL OBSERVATIONS

Incidental observations of raptor species included 59 observations of 7 species (Table 3). A list of songbird species recorded during survey is attached in Appendix B.

Table 3: Incidental Raptor Observations During Eagle Point-Count Surveys

Species	Number of Individuals Observed
Broad-winged Hawk	3
American Kestrel	4
Merlin	1
Northern Harrier	3
Red-tailed Hawk	2
Sharp-shinned Hawk	1
Turkey Vulture	45
Total	**59**

4.0 CONCLUSIONS

A total of 286 hours of survey were completed during the eagle point-count surveys at the Project. During this time, 14 bald eagles were observed, 12 of which were within the survey area for some duration of the observation. No golden eagles were observed during surveys, suggesting that the Project would pose little to no risk for this species.

Bald eagles were observed at 5 of 12 points during the study (Table 1). The majority of observations occurred at Site 10, Site 11, and Site 12. These sites are all located to the south of Schoodic Lake.

High-risk behaviors such as territorial behavior, kiting, and hunting can increase the mortality rate from turbine collision (Smallwood et al 2009). It is thought that these behaviors increase mortality because birds lose their spatial awareness of the turbine locations. High risk behaviors were rarely observed during surveys, and the majority of observations were of eagles flying at high altitudes. Only one instance of high-risk behaviors was observed within the 800m radius and 200m AGL survey areas.

There are variable findings as to whether sub-adult birds are at a higher risk for collision with wind turbines than adults (USFWS, 2013). 82% of the birds observed within the 800m radius by 200m AGL survey area were adults, and only 2 sub adult birds were observed. From this information, it is unlikely that the Project will pose a higher risk to eagles due to limited use by sub-adult birds.

Areas of the Project received little use by eagles during the winter months, as only one adult was observed during eagle use surveys between the months of December through March. Eagles consume more carrion in the winter months and congregate in areas of open water where fish are still accessible. There are few, if any, of these resources available within the Project area during the winter, so the low numbers of use are to be expected.

Based on mortality data collected at wind energy facilities across the U.S., mortality of bald eagles due to turbine collision is low and may reflect avoidance of turbines by the species (Pagel, 2013). To date, no known bald eagle collisions have taken place at a wind energy facility in the State of Maine. Based on what data is known about risks to eagle mortality in Maine, the documentation of low use and minimal high-risk behavior observed, the Project would likely pose a low risk to bald eagles.

5.0 REFERENCES

Hawk Migration Association of North America (HMANA). 2005. Hawk Migration Association of North America Daily Report Form and data collection instructions. Information available online at: www.hmana.org

Pagel, J.E., Kritz, K.J., Millsap, B.A., Murphy, R.K. 2013. Bald Eagle and Golden Eagle Mortalities at Wind Energy Facilities in the Contiguous United States. *Journal of Raptor Research*, 47(3):311-315. 2013.

Smallwood, K.S., Rugge, L., Morrison, M. L. 2009. Influence of Behavior on Bird Mortality in Wind Energy Developments. *Journal of Wildlife Management* 73 (7):1082-1098.

Todd, C.S. 2004, Bald Eagle Assessment. Maine Department of Inland Fisheries and Wildlife.

U.S. Fish and Wildlife Service, 2020. Updated Eagle Nest Survey Protocol. https://www.fws.gov/migratorybirds/pdf/management/EagleNestSurveyGuidanceUpdated.pdf

U.S. Fish and Wildlife Service, 2013. Eagle Conservation Plan Guidance U.S. Fish and Wildlife Service, Washington DC. https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf

APPENDIX A
EXAMPLE DATA SHEET

Raptor Use Survey Data Sheet

Observers:	Date:	Time Start:	Time End:

Weather (see reverse for instructions)			Location:
wind speed:		bar. press:	
wind direction:		cloud cover:	
temp (C):		visibility:	
humidity:		precipitation:	

ID	Species	#	Age (J,A,U)	Gender (M,F,U)	Time of first Observation	Time of Last Observation	Behavior (So,Fl,Ci,Gl,Pe,Hu, Other [describe])	Flight Direction	Flight Height (0-4)	Turbine Pads Utilized (WTG #)	Horizontal Position Code	Notes

GENERAL INSTRUCTIONS:

For weather, enter for the first hour of observation, for following hours only if data changes, if there are no changes, draw a line from the recorded data through the hours in which no change occurred; do not use ditto marks or dashes.
For hawks, enter only the number seen (no zeros). Write notes, comments, etc. below.
Observers : Number of observers **CONTRIBUTING** to the count for the hour noted.
Duration of Observation : Specify time in minutes.

Weather Codes

Wind Speed Codes :

0-less than 1 km/h, (calm, smoke rises vertically)
1 - 1-5 km/h, (smoke drift shows wind direction)
2 - 6-11 km/h, (leaves rustle, wind felt on face)
3 - 12-19 km/h, (leaves, small twigs in constant motion; light flag extended)
4 - 20-28 km/h (raises dust, leaves, loose paper; small branches in motion)
5 - 29-38 km/h (small trees in leaf sway)
6 - 39-49 km/h (larger branches in motion; whistling heard in wires)
7 - 50-61 km/h (whole trees in motion; resistance felt walking against the wind)
8 - 62-74 km/h (twigs small branches broken off trees; walking generally impeded)
9 - Greater than 75 km/h

Wind Direction : Enter compass direction from which the wind is coming, i.e., N, NNE, SE, etc. If variable, enter VAR.
Temperature : Record temperature in degrees Celsius.
Humidity : Record the percent relative humidity.
Barometric Pressure : Record barometric pressure in inches.
Cloud Cover : Record percent of sky with background cloud cover.
Visibility : Judge from your longest view and enter distance in kilometers. To convert miles to kilometers multiply by 1.61.
Precipitation : Enter code: 0 for none, 1 for Haze or Fog, 2 for Drizzle, 3 for Rain, 4 for Thunderstorm, 5 for Snow, 6 for wind driven dust, sand or snow.

Observation Codes

Flight Direction : Enter compass direction migrants are heading, i.e., S, SSW, etc.
Flight Height Codes

0 - outside of turbine array area
1 - below rotor swept area
2 - within rotor swept area
3 - above rotor swept area
4 - No predominant height

Behavior Codes: So: soaring, Fl: flapping, Ci: circling, Gl: gliding, Pe: perching, Hu: Hunting
Horizontal Position Codes:

A) over ridge (A1-parallel to ridge, A2-perpendicular to ridge, A3-over saddle),
B) flight path over upper slope of ridge,
C) flight path over lower slope of ridge, and D) flight path over a valley

COMMENTS

APPENDIX B

INCIDENTAL SPECIES OBSERVATIONS

Incidental Species Observed during Eagle Use and Schoodic Nest Surveys

American Crow	*Corvus brachyrhynchos*
American Goldfinch	*Spinus tristis*
American Robin	*Turdus migratorius*
Barred Owl	*Strix varia*
Blue Jay	*Cyanocitta cristata*
Black-capped Chickadee	*Poecile atricapillus*
Brown Thrasher	*Toxostoma rufum*
Black-and-white Warbler	*Mniotilta varia*
Cedar Waxwing	*Bombycilla cedrorum*
Chestnut-sided Warbler	*Setophaga pensylvanica*
Chipping Sparrow	*Spizella passerina*
Common Loon	*Gavia immer*
Common Merganser	*Mergus merganser*
Common Raven	*Corvus corax*
Common Yellowthroat	*Geothlypis trichas*
Eastern Phoebe	*Sayornis phoebe*
Eastern Wood Pewee	*Contopus virens*
Gray Catbird	*Dumetella carolinensis*
Gull Spp.	*Laridae spp.*
Hairy Woodpecker	*Dryobates villosus*
Hermit Thrush	*Catharus guttatus*
Hooded Merganser	*Lophodytes cucullatus*
Northern Flicker	*Colaptes auratus*
Purple Finch	*Haemorhous purpureus*
Red-breasted Nuthatch	*Sitta canadensis*
Red-eyed Vireo	*Vireo olivaceus*
Ruby-crowned Kinglet	*Regulus calendula*
Snow Bunting	*Plectrophenax nivalis*
Tree Swallow	*Tachycineta bicolor*
Winter Wren	*Troglodytes hiemalis*
White-throated Sparrow	*Zonotrichia albicollis*
Yellow Warbler	*Setophaga petechia*
Yellow-rumped Warbler	*Setophaga coronata*

APPENDIX C
DATA SHEETS

AD-1, 2019-01-31

Created	2019-02-04 14:47:51 UTC by Joseph Roy
Updated	2019-03-18 18:14:11 UTC by Meg Stevenson
Location	,
Lead Observer	Joseph Roy
Survey Interval	January
Date	2019-01-31
Survey Site	AD-1

Survey Overview

Survey Start Time	10:15
Survey End Time	12:15
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	SE
Temperature (F)	10
Relative Humidity	45
Barametric Pressure (inches)	29.7
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none

AD-1, 2019-03-27

Created	2019-03-27 15:35:14 UTC by Joe Roy
Updated	2019-05-07 13:05:37 UTC by Meg Stevenson
Location	44.7928287, -67.9159266
Lead Observer	Joe Roy
Survey Interval	March
Date	2019-03-27
Survey Site	AD-1

Survey Overview

Survey Start Time	10:15
Survey End Time	12:15
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	NE
Temperature (F)	35
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none
Weather Comment	Clear and calm. Winds occasionally. Unlimited visibility

AD-1, 2019-04-29

Created	2019-04-29 09:50:27 UTC by Meg Stevenson
Updated	2019-04-29 11:38:57 UTC by Meg Stevenson
Location	44.7910192050457, -67.9252262693531
Lead Observer	Meg Dood
Survey Interval	April
Date	2019-04-29
Survey Site	AD-1

Survey Overview

Survey Start Time	05:38
Survey End Time	07:38
Duration of survey (minutes)	120

Weather Summary

Wind Speed	0 - Calm
Temperature (F)	35
Cloud Cover (percent)	0
Visibility	10km
Precipitation	0 - none

07:21

Time of observation	07:21
Describe observation	HETH CHSP EAPH WIWR RCKI

AD-1, 2019-05-24

Created	2019-05-24 12:43:12 UTC by Randi Jackson
Updated	2019-12-17 19:53:47 UTC by Meg Stevenson
Location	44.7895379551, -67.9290593137
Lead Observer	Randi Jackson
Survey Interval	May
Date	2019-05-24
Survey Site	AD-1

Survey Overview

Survey Start Time	07:54
Survey End Time	09:54
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	NE
Temperature (F)	47
Relative Humidity	96
Barametric Pressure (inches)	29.59
Cloud Cover (percent)	100
Visibility	5km
Precipitation	3 - Rain

AD-1, 2019-06-12

Created	2019-06-12 16:26:15 UTC by Karla Fortier
Updated	2019-08-05 16:22:12 UTC by Meg Stevenson
Location	44.7889478, -67.9291111
Lead Observer	Karla Fortier
Survey Interval	June
Date	2019-06-12
Survey Site	AD-1

Survey Overview

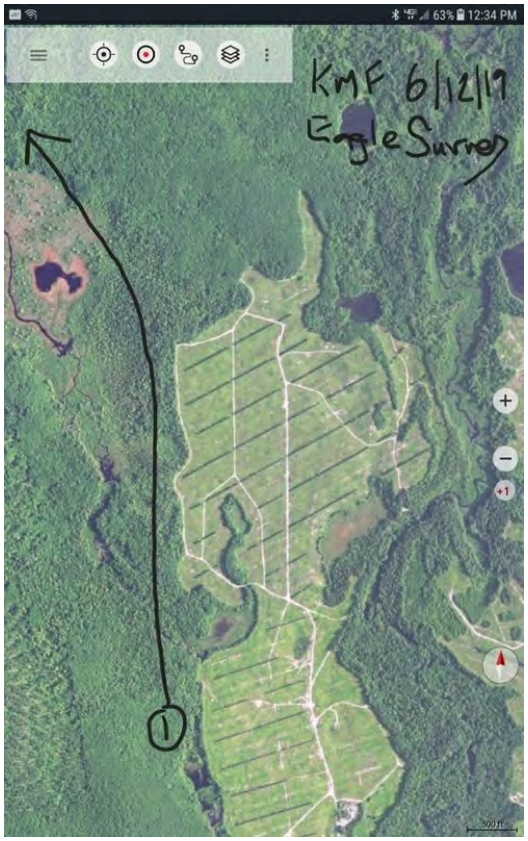
Survey Start Time	12:25
Survey End Time	14:25
Duration of survey (minutes)	120
Count of raptors observed	1
Survey Summary Comments	No eagles observed. One TUVU.

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	70
Relative Humidity	50
Barametric Pressure (inches)	30
Cloud Cover (percent)	10
Visibility	16+
Precipitation	0 - none
Weather Comment	Gorgeous, clear, sunny day. Decent wind, comfortable.

Turkey Vulture, 1

Raptor Site	AD-1
Raptor Date	6/12/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	1
Time first observed	12:33
Time last observed	12:36
Duration of observation (minutes)	3
Duration within survey boundary	0
Age	Unknown
Sex	Unknown
Behavior	Soaring
General Flight Direction	N, NW
Flight Height	1 - below rotor swept area, 2 - within rotor swept area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	D - flight path over a valley

Notes	Bird on a slow soar along Western treeline flying valley North/northwest until out of sight. No special behavior.
Map of Flight Path	

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	70
Relative Humidity	50
Barametric Pressure (inches)	30
Cloud Cover (percent)	10
Visibility	16+
Precipitation	0 - none

AD-1, 2019-07-18

Created	2019-07-18 16:50:45 UTC by Randi Jackson
Updated	2019-12-19 21:21:22 UTC by Meg Stevenson
Location	44.7895048047, -67.9291177355
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-18
Survey Site	AD-1

Survey Overview

Survey Start Time	12:17
Survey End Time	14:20
Duration of survey (minutes)	123
Count of raptors observed	1

Turkey Vulture, 1

Raptor Site	AD-1
Raptor Date	7/18/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	1
Time first observed	12:02
Time last observed	12:03
Duration of observation (minutes)	1
Age	Adult
Sex	Unknown
Behavior	Perching
Notes	*Incidental Observation while driving between sites* Spotted, as I drove by, at the edge of one of the blueberry fields on the ground. As I pulled up along side the TUVU it remained still for a few more seconds then hoped up a few branches into a nearby tree. Remained perched in the tree as I drove off.

Map of Flight Path




Extended LTE
12:43
91%
3D
76°
Search for a place or address

AD-1, 2019-08-28

Created	2019-08-28 13:49:59 UTC by Meg Stevenson
Updated	2019-08-28 15:16:52 UTC by Meg Stevenson
Location	44.794313125354, -67.9310288932807
Lead Observer	Meg Dood
Survey Interval	August
Date	2019-08-28
Survey Site	AD-1

Survey Overview

Survey Start Time	09:21
Survey End Time	11:21
Duration of survey (minutes)	120
Count of raptors observed	1

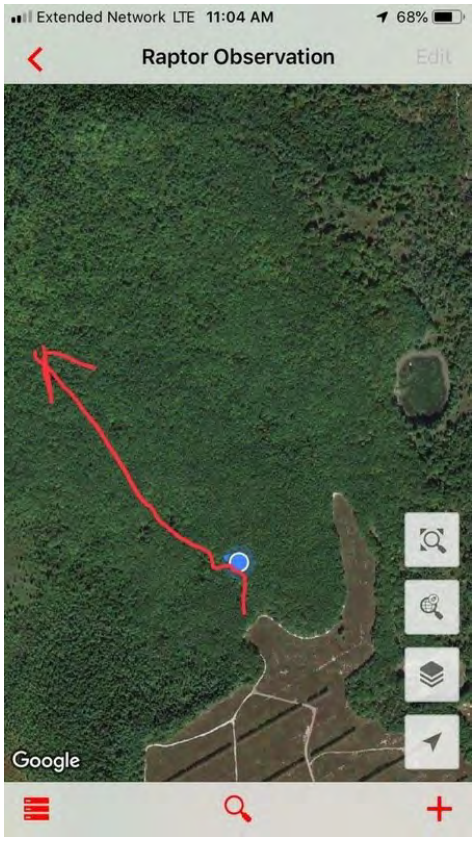
Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SE
Temperature (F)	68
Relative Humidity	80
Barametric Pressure (inches)	30.01
Cloud Cover (percent)	0
Visibility	10km
Precipitation	0 - none

Turkey Vulture, 1

Raptor Site	AD-1
Raptor Date	8/28/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	1
Time first observed	11:01
Time last observed	11:03
Duration of observation (minutes)	2
Duration within survey boundary	2
Age	Adult
Sex	Unknown
Behavior	Gliding, Soaring
General Flight Direction	NW
Flight Height	1 - below rotor swept area
Horizontal Position Code	Over met site
Notes	One TUVU Flys in from over barrens, gliding north west about 70ft in air. Eventually drops down out of site.

Map of Flight Path



Weather during observation

Wind Speed	2 - Light breeze
Wind Direction	SE
Temperature (F)	72
Relative Humidity	74
Barametric Pressure (inches)	30.01
Cloud Cover (percent)	0
Visibility	10km
Precipitation	0 - none

09:55

Time of observation	09:55
Describe observation	Sound: BWWA EWPE RBNU BCCH REVI WTSP GRCA. sight: EWPE

AD-1, 2019-09-13

Created	2019-09-13 18:11:28 UTC by Randi Jackson
Updated	2019-12-17 17:58:29 UTC by Meg Stevenson
Location	44.7895493964, -67.9290317372
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-13
Survey Site	AD-1

Survey Overview

Survey Start Time	14:08
Survey End Time	16:09
Duration of survey (minutes)	121

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	66
Relative Humidity	37
Barametric Pressure (inches)	30.5
Cloud Cover (percent)	0
Visibility	Unlimited

AD-1, 2019-10-25

Created	2019-10-25 14:00:38 UTC by Randi Jackson
Updated	2019-12-17 17:52:31 UTC by Meg Stevenson
Location	44.7894720314, -67.9290490039
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-10-25
Survey Site	AD-1

Survey Overview

Survey Start Time	08:45
Survey End Time	10:45
Duration of survey (minutes)	120

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	W
Temperature (F)	55
Relative Humidity	54
Barametric Pressure (inches)	30.31
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Cool, cloudy, damp fall day.

10:00

Time of observation	10:00
Describe observation	Other Birds: BLJA

AD-1, 2019-11-14

Created	2019-11-14 16:08:28 UTC by Randi Jackson
Updated	2019-12-17 17:50:19 UTC by Meg Stevenson
Location	44.7895326745, -67.9290485848
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-14
Survey Site	AD-1

Survey Overview

Survey Start Time	09:13
Survey End Time	11:13
Duration of survey (minutes)	120
Survey Summary Comments	No raptors or song birds observed or heard.

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	24
Relative Humidity	73
Barametric Pressure (inches)	30.51
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

AD-1, 2019-12-13

Created	2019-12-13 16:20:17 UTC by Meg Stevenson
Updated	2019-12-13 18:12:38 UTC by Meg Stevenson
Location	44.7895277291953, -67.9290786758698
Lead Observer	Meg Stevenson
Survey Interval	December
Date	2019-12-13
Survey Site	AD-1

Survey Overview

Survey Start Time	11:16
Survey End Time	13:16
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SE
Temperature (F)	39
Relative Humidity	69
Barametric Pressure (inches)	30.52
Cloud Cover (percent)	90
Visibility	10km
Precipitation	0 - none

12:17

Time of weather observation	12:17
Wind Speed	4 - Moderate breeze
Wind Direction	SE
Temperature (F)	40
Relative Humidity	67
Barametric Pressure (inches)	30.51
Cloud Cover (percent)	80
Visibility	10km
Precipitation	0 - none

AD-2, 2019-01-31

Created	2019-02-04 14:49:28 UTC by Joseph Roy
Updated	2019-03-18 18:20:55 UTC by Meg Stevenson
Location	44.77185, -67.903374
Lead Observer	Joseph Roy
Survey Interval	January
Date	2019-01-31
Survey Site	AD-2

Survey Overview

Survey Start Time	14:30
Survey End Time	16:30
Duration of survey (minutes)	120

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	SE
Temperature (F)	10
Relative Humidity	45
Barametric Pressure (inches)	29.7
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none

AD-2, 2019-02-19

Created	2019-02-20 17:42:43 UTC by Joseph Roy
Updated	2019-03-18 18:10:43 UTC by Meg Stevenson
Location	43.6190185, -70.3555561
Lead Observer	Joseph Roy
Survey Interval	February
Date	2019-02-19
Survey Site	AD-2

Survey Overview

Survey Start Time	10:10
Survey End Time	12:10
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SW
Temperature (F)	15
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none
Weather Comment	U limited visibility. Cold and clear

AD-2, 2019-03-26

Created	2019-03-26 16:12:56 UTC by Joe Roy
Updated	2019-03-26 19:20:41 UTC by Joe Roy
Location	44.7728878, -67.9069482
Lead Observer	Joe Roy
Survey Interval	March
Date	2019-03-26
Survey Site	AD-2

Survey Overview

Survey Start Time	11:40
Survey End Time	13:40
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	NW
Temperature (F)	32
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none
Weather Comment	Cool, clear, windy, and unlimited visibility

AD-2, 2019-04-18

Created	2019-04-18 15:54:13 UTC by Joe Roy
Updated	2019-05-07 13:18:24 UTC by Joe Roy
Location	44.7711706, -67.8938272
Lead Observer	Joe Roy
Survey Interval	April
Date	2019-04-18
Survey Site	AD-2

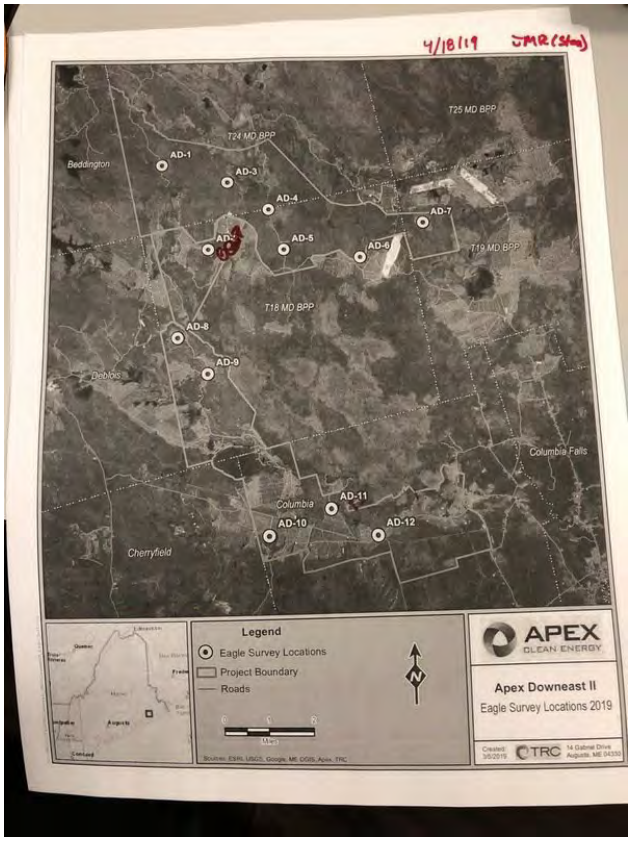
Survey Overview

Survey Start Time	10:40
Survey End Time	12:40
Duration of survey (minutes)	120
Count of raptors observed	3

Northern Harrier, 1

Raptor Site	AD-2
Raptor Date	4/18/19
Species	Northern Harrier
Raptor observation number	1
Count of individuals in group	1
Time first observed	11:41
Time last observed	11:46
Duration of observation (minutes)	5
Age	Juvenile
Sex	Unknown
Behavior	Circling, Flapping, Hunting, Soaring
General Flight Direction	N
Flight Height	1 - below rotor swept area, 2 - within rotor swept area, 3 - above rotor swept area
Horizontal Position Code	over field

Map of Flight Path

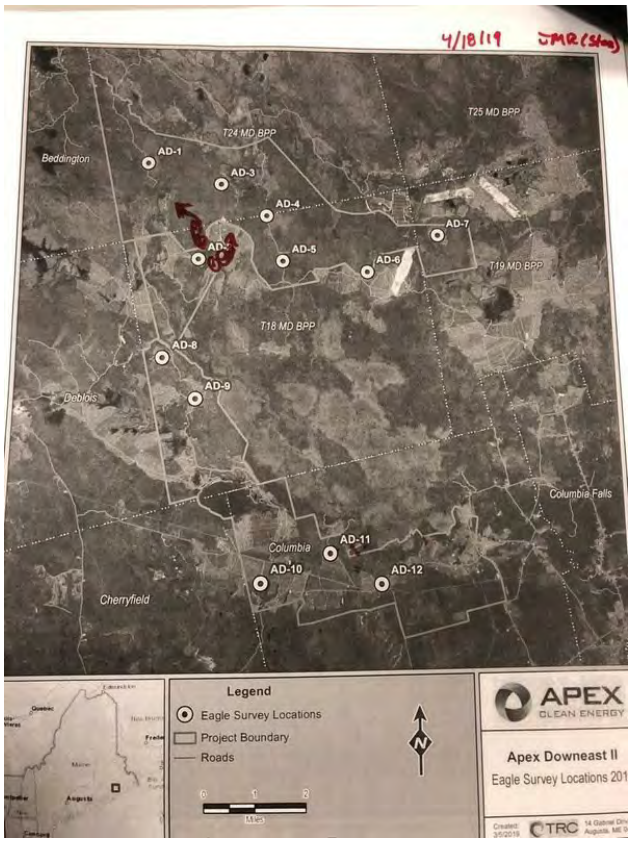


Weather during observation

Wind Speed	1 - Light air
Wind Direction	NW
Temperature (F)	45
Barametric Pressure (inches)	1021
Cloud Cover (percent)	20
Visibility	10
Precipitation	0 - none

Turkey Vulture, 2

Raptor Site	AD-2
Raptor Date	4/18/19
Species	Turkey Vulture
Raptor observation number	2
Count of individuals in group	2
Time first observed	11:45
Time last observed	23:47
Duration of observation (minutes)	722
Age	Unknown
Sex	Unknown
Behavior	Circling
General Flight Direction	NW
Flight Height	3 - above rotor swept area

Horizontal Position Code	Flight over hill and field
Map of Flight Path	

Weather during observation

Wind Speed	1 - Light air
Wind Direction	NW
Temperature (F)	47
Barametric Pressure (inches)	1021
Cloud Cover (percent)	20
Visibility	10
Precipitation	0 - none

AD-2, 2019-05-21

Created	2019-05-21 18:33:29 UTC by Randi Jackson
Updated	2019-12-17 17:57:44 UTC by Meg Stevenson
Location	44.7719801311, -67.9036924896
Lead Observer	Randi Jackson
Survey Interval	May
Date	2019-05-21
Survey Site	AD-2

Survey Overview

Survey Start Time	14:28
Survey End Time	16:29
Duration of survey (minutes)	121
Count of eagles observed	1
Count of raptors observed	4

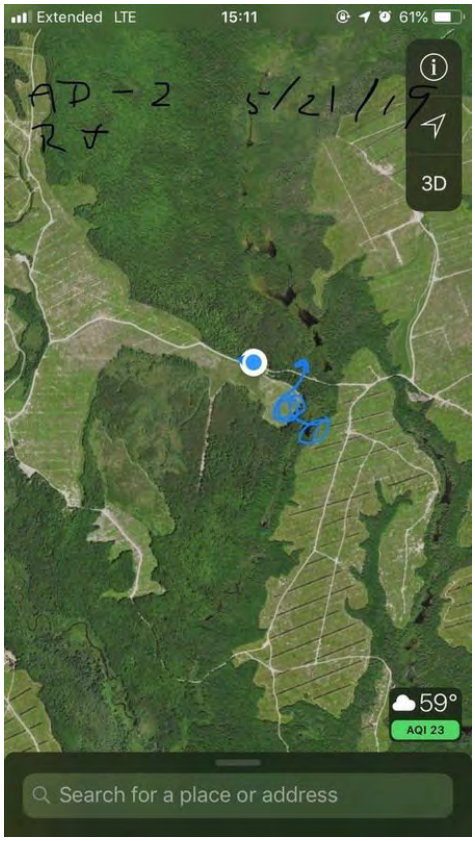
Weather Summary

Wind Speed	6 - Strong breeze
Wind Direction	NW
Temperature (F)	60
Relative Humidity	69
Barametric Pressure (inches)	29.59
Cloud Cover (percent)	95
Visibility	Unlimited
Precipitation	0 - none

Red-tailed Hawk, 1

Raptor Site	AD-2
Raptor Date	5/21/19
Species	Red-tailed Hawk
Raptor observation number	1
Count of individuals in group	1
Time first observed	15:07
Time last observed	15:09
Duration of observation (minutes)	2
Duration within survey boundary	2
Age	Adult
Sex	Unknown
Behavior	Circling
General Flight Direction	N
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	First spotted circling in from the east. Circled a few times over the field then continued gliding north.

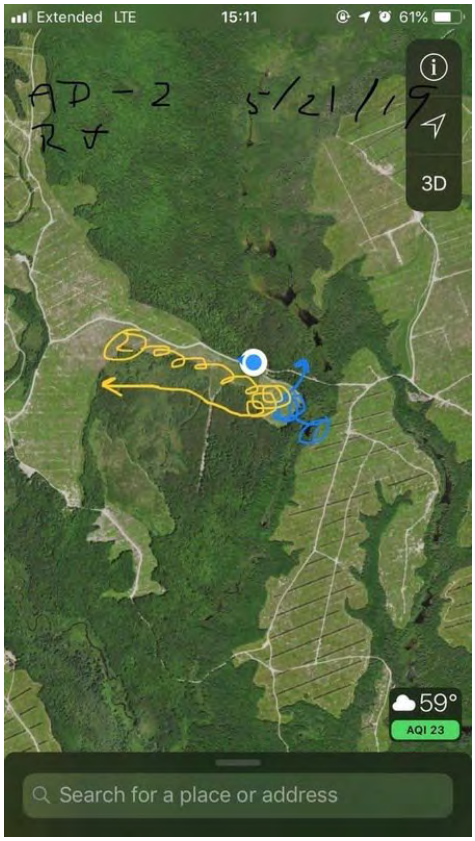
Map of Flight Path



Bald Eagle, 2

Raptor Site	AD-2
Raptor Date	5/21/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1
number of eagles observed	1
Time first observed	15:44
Time last observed	15:56
Duration of observation (minutes)	12
Duration within survey boundary	12
Age	Adult
Sex	Unknown
Behavior	Gliding, Flapping, Circling
General Flight Direction	W
Flight Height	2 - within rotor swept area, 3 - above rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	First spotted the BAEA circling in from the west ascending and making its way east. Circled very high up then changed directions and began gliding making its way back west out of site.

Map of Flight Path



Turkey Vulture, 3

Raptor Site	AD-2
Raptor Date	5/21/19
Species	Turkey Vulture
Raptor observation number	3
Count of individuals in group	2
Time first observed	16:23
Time last observed	16:25
Duration of observation (minutes)	2
Duration within survey boundary	2
Age	Unknown
Sex	Unknown
Behavior	Gliding, Circling
General Flight Direction	N
Flight Height	1 - below rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	First spotted gliding in from the south headed north. They both circled a few times then continued gliding north.

Map of Flight Path



14:54

Time of weather observation	14:54
Wind Speed	6 - Strong breeze
Wind Direction	NW
Temperature (F)	60
Relative Humidity	69
Barametric Pressure (inches)	25.59
Cloud Cover (percent)	95
Visibility	Unlimited
Precipitation	3 - Rain
Weather Comment	Brief rain shower

15:01

Time of weather observation	15:01
Wind Speed	6 - Strong breeze
Wind Direction	NW
Temperature (F)	60
Relative Humidity	69
Barametric Pressure (inches)	29.59
Cloud Cover (percent)	95
Visibility	Unlimited
Precipitation	0 - none

AD-2, 2019-06-20

Created	2019-06-20 13:06:16 UTC by Randi Jackson
Updated	2019-08-05 16:24:50 UTC by Meg Stevenson
Location	44.7719396884, -67.903417144
Lead Observer	Randi Jackson
Survey Interval	June
Date	2019-06-20
Survey Site	AD-2

Survey Overview

Survey Start Time	09:04
Survey End Time	11:06
Duration of survey (minutes)	122

Weather Summary

Wind Speed	1 - Light air
Wind Direction	E
Temperature (F)	58
Relative Humidity	96
Barametric Pressure (inches)	29.85
Cloud Cover (percent)	100
Visibility	5km
Precipitation	1 - Haze or Fog

AD-2, 2019-07-11

Created	2019-07-11 15:49:42 UTC by Randi Jackson
Updated	2019-08-05 16:32:24 UTC by Meg Stevenson
Location	44.7719130759, -67.9034627416
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-11
Survey Site	AD-2

Survey Overview

Survey Start Time	10:21
Survey End Time	12:25
Duration of survey (minutes)	124

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	S
Temperature (F)	64
Relative Humidity	73
Barametric Pressure (inches)	30.08
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

AD-2, 2019-08-14

Created	2019-08-14 17:26:01 UTC by Meg Stevenson
Updated	2019-12-17 19:10:22 UTC by Meg Stevenson
Location	44.77154, -67.90284
Lead Observer	Meg Dood
Survey Interval	August
Date	2019-08-14
Survey Site	AD-2

Survey Overview

Survey Start Time	13:20
Survey End Time	15:20
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	SW
Temperature (F)	81
Relative Humidity	49
Barametric Pressure (inches)	29.96
Cloud Cover (percent)	50
Visibility	10km
Precipitation	0 - none

15:10

Time of observation	15:10
Describe observation	COYE HETH

AD-2, 2019-09-25

Created	2019-09-25 13:42:25 UTC by Randi Jackson
Updated	2019-12-17 17:57:17 UTC by Meg Stevenson
Location	44.7719714977, -67.9035038967
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-25
Survey Site	AD-2

Survey Overview

Survey Start Time	08:00
Survey End Time	10:00
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	N
Temperature (F)	52
Relative Humidity	87
Barametric Pressure (inches)	29.81
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Beautiful, cool, crisp morning with a breeze and minimal sun.

08:00

Time of observation	08:00
Describe observation	Other Birds: COYE AMCR BLJA

AD-2, 2019-10-11

Created	2019-10-11 17:16:56 UTC by Randi Jackson
Updated	2019-12-17 17:52:52 UTC by Meg Stevenson
Location	44.7719632835, -67.9034930003
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-10-11
Survey Site	AD-2

Survey Overview

Survey Start Time	13:12
Survey End Time	15:12
Duration of survey (minutes)	120

Weather Summary

Wind Speed	6 - Strong breeze
Wind Direction	NE
Temperature (F)	63
Relative Humidity	46
Barametric Pressure (inches)	30.27
Cloud Cover (percent)	90
Visibility	Unlimited
Precipitation	0 - none

15:01

Time of weather observation	15:01
Wind Speed	6 - Strong breeze
Wind Direction	S
Temperature (F)	61
Relative Humidity	45
Barametric Pressure (inches)	30.25
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	A few cracks of thunder in the near distance.

13:32

Time of observation	13:32
Describe observation	Other Birds: BLJA CORA

AD-2, 2019-11-25

Created	2019-11-25 16:23:05 UTC by Randi Jackson
Updated	2019-12-17 17:48:28 UTC by Meg Stevenson
Location	44.7719406104, -67.9035921582
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-25
Survey Site	AD-2

Survey Overview

Survey Start Time	09:23
Survey End Time	11:23
Duration of survey (minutes)	120

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	W
Temperature (F)	45
Relative Humidity	79
Barametric Pressure (inches)	29.6
Cloud Cover (percent)	50
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Nice windy sunny day!

AD-2, 2019-12-05

Created	2019-12-05 18:31:06 UTC by Randi Jackson
Updated	2019-12-17 17:47:28 UTC by Meg Stevenson
Location	44.7719737608, -67.9036050663
Lead Observer	Randi Jackson
Survey Interval	December
Date	2019-12-05
Survey Site	AD-2

Survey Overview

Survey Start Time	13:27
Survey End Time	15:27
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	NW
Temperature (F)	39
Relative Humidity	63
Barametric Pressure (inches)	29.52
Cloud Cover (percent)	75
Visibility	Unlimited
Precipitation	0 - none

13:48

Time of observation	13:48
Describe observation	CORA

AD-3, 2019-01-31

Created	2019-02-04 14:48:50 UTC by Joseph Roy
Updated	2019-03-18 18:17:32 UTC by Meg Stevenson
Location	44.799096, -67.891736
Lead Observer	Joseph Roy
Survey Interval	January
Date	2019-01-31
Survey Site	AD-3

Survey Overview

Survey Start Time	12:15
Survey End Time	14:15
Duration of survey (minutes)	120

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	SE
Temperature (F)	10
Relative Humidity	45
Barametric Pressure (inches)	29.7
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none

AD-3, 2019-02-19

Created	2019-02-20 17:41:34 UTC by Joseph Roy
Updated	2019-03-18 18:11:47 UTC by Meg Stevenson
Location	43.6191022, -70.3554819
Lead Observer	Joseph Roy
Survey Interval	February
Date	2019-02-19
Survey Site	AD-3

Survey Overview

Survey Start Time	07:44
Survey End Time	09:45
Duration of survey (minutes)	121
Survey Summary Comments	One Raven observed

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SW
Temperature (F)	10
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none
Weather Comment	Cold, clear, light winds, unlimited visibility.

AD-3, 2019-03-26

Created	2019-03-26 14:34:31 UTC by Joe Roy
Updated	2019-07-02 15:09:18 UTC by Meg Stevenson
Location	44.7996005, -67.8916958
Lead Observer	Joe Roy
Survey Interval	March
Date	2019-03-26
Survey Site	AD-3

Survey Overview

Survey Start Time	09:30
Survey End Time	11:30
Duration of survey (minutes)	120
Count of raptors observed	3

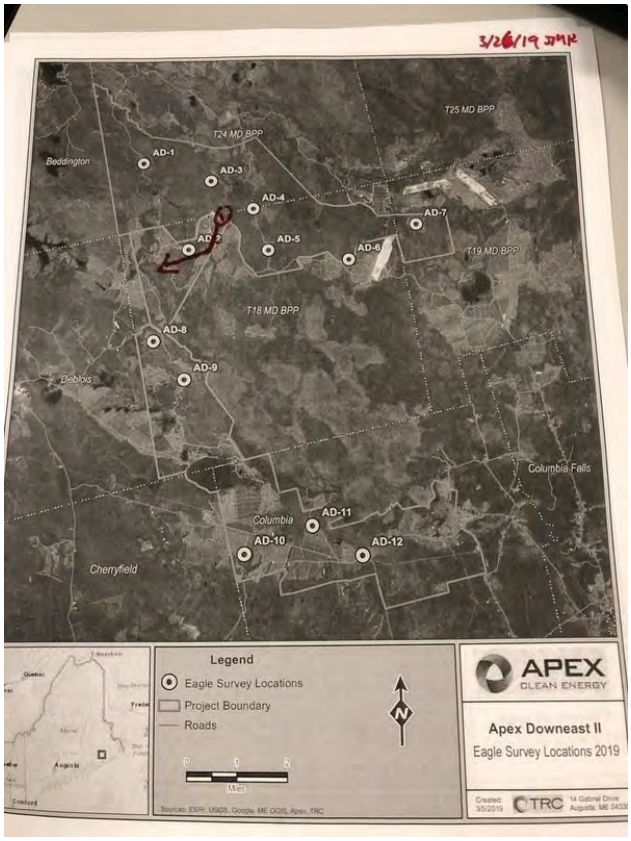
Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	NW
Temperature (F)	32
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none
Weather Comment	Cool, clear, and windy.

Turkey Vulture, 1

Raptor Site	AD-3
Raptor Date	3/26/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	3
Time first observed	11:22
Time last observed	11:25
Duration of observation (minutes)	3
Age	Adult
Sex	Unknown
Behavior	Circling, Flapping
General Flight Direction	S, W
Flight Height	1 - below rotor swept area, 2 - within rotor swept area, 3 - above rotor swept area
Horizontal Position Code	over field
Notes	Flight east to west. Circled before heading south with wind to their tails.

Map of Flight Path



Weather during observation

Wind Speed	4 - Moderate breeze
Wind Direction	NW
Temperature (F)	40
Barametric Pressure (inches)	1014
Cloud Cover (percent)	20
Visibility	10
Precipitation	0 - none

AD-3, 2019-04-18

Created	2019-04-18 14:40:07 UTC by Joe Roy
Updated	2019-04-22 19:35:04 UTC by Meg Stevenson
Location	44.7949231, -67.8866961
Lead Observer	Joe Roy
Survey Interval	April
Date	2019-04-18
Survey Site	AD-3

Survey Overview

Survey Start Time	08:30
Survey End Time	10:30
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	NW
Temperature (F)	43
Barametric Pressure (inches)	1022
Cloud Cover (percent)	20
Visibility	10
Precipitation	0 - none
Weather Comment	Warm and clear.

AD-3, 2019-05-21

Created	2019-05-21 16:34:16 UTC by Randi Jackson
Updated	2020-01-02 15:44:39 UTC by Randi Jackson
Location	44.7953015437, -67.8908226639
Lead Observer	Randi Jackson
Survey Interval	May
Date	2019-05-21
Survey Site	AD-3

Survey Overview

Survey Start Time	12:21
Survey End Time	14:22
Duration of survey (minutes)	121
Count of eagles observed	1
Count of raptors observed	5

Weather Summary

Wind Speed	6 - Strong breeze
Wind Direction	NW
Temperature (F)	59
Relative Humidity	68
Barametric Pressure (inches)	29.59
Cloud Cover (percent)	95
Visibility	Unlimited
Precipitation	0 - none

Turkey Vulture, 1

Raptor Site	AD-3
Raptor Date	5/21/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	1
Time first observed	12:44
Time last observed	12:49
Duration of observation (minutes)	5
Age	Adult
Sex	Unknown
Behavior	Flapping, Circling, Gliding, Perching
General Flight Direction	W
Flight Height	1 - below rotor swept area
Horizontal Position Code	A2 - Over ridge, perpendicular, A3 - Over ridge, saddle
Notes	First spotted the TUVU flying in from over the tree line in the west. Circled and glided a few times over the field then glided its way to the tree line and perched in a tree at 12:47. Perched for a few minutes then took off over the tree line flying low and out of site.

Map of Flight Path



Bald Eagle, 2

Raptor Site	AD-3
Raptor Date	5/21/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1
number of eagles observed	1
Time first observed	13:40
Time last observed	13:47
Duration of observation (minutes)	7
Duration within survey boundary	5
Age	Adult
Sex	Unknown
Behavior	Circling
General Flight Direction	N
Flight Height	2 - within rotor swept area, 3 - above rotor swept area
Horizontal Position Code	A3 - Over ridge, saddle
Notes	First spotted gliding in from the south east. Shortly after BAEA began gliding and ascending while making its way north. Eventually lost sight way up in the sky.

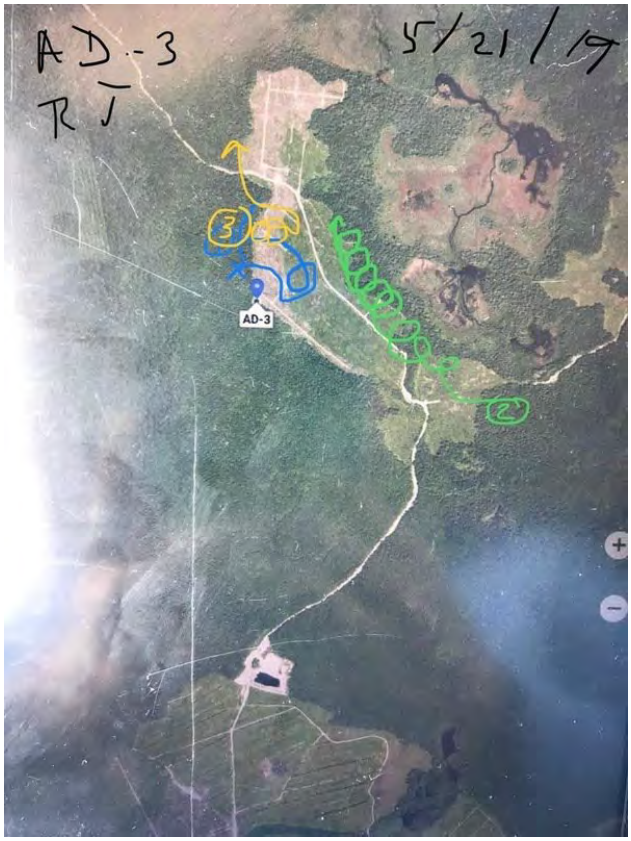
Map of Flight Path



Turkey Vulture, 3

Raptor Site	AD-3
Raptor Date	5/21/19
Species	Turkey Vulture
Raptor observation number	3
Count of individuals in group	3
Time first observed	14:13
Time last observed	14:17
Duration of observation (minutes)	4
Age	Adult
Sex	Unknown
Behavior	Circling
General Flight Direction	N
Flight Height	1 - below rotor swept area
Horizontal Position Code	A3 - Over ridge, saddle
Notes	First spotted three TUVU circling in from the west. The three individuals circled together over the field for a few minutes then eventually all three made their way north while circling.

Map of Flight Path



13:22

Time of weather observation	13:22
Wind Speed	6 - Strong breeze
Wind Direction	NW
Temperature (F)	56
Relative Humidity	69
Barametric Pressure (inches)	29.59
Cloud Cover (percent)	95
Visibility	Unlimited
Precipitation	3 - Rain
Weather Comment	A brief period of heavy rain.

13:36

Time of weather observation	13:36
Wind Speed	6 - Strong breeze
Wind Direction	NW
Temperature (F)	56
Relative Humidity	69
Barametric Pressure (inches)	29.59
Cloud Cover (percent)	95
Visibility	Unlimited
Precipitation	0 - none

13:56

Time of weather observation	13:56
Wind Speed	6 - Strong breeze
Wind Direction	NW
Temperature (F)	58
Relative Humidity	69
Barametric Pressure (inches)	29.59
Cloud Cover (percent)	95
Visibility	Unlimited
Precipitation	3 - Rain
Weather Comment	Brief heavy rain shower

AD-3, 2019-06-20

Created	2019-06-20 12:57:51 UTC by Randi Jackson
Updated	2019-08-05 16:25:22 UTC by Meg Stevenson
Location	44.800002426, -67.8925490007
Lead Observer	Randi Jackson
Survey Interval	June
Date	2019-06-20
Survey Site	AD-3

Survey Overview

Survey Start Time	06:58
Survey End Time	08:58
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	E
Temperature (F)	56
Relative Humidity	96
Barametric Pressure (inches)	29.85
Cloud Cover (percent)	100
Visibility	5km
Precipitation	1 - Haze or Fog

AD-3, 2019-07-11

Created	2019-07-11 13:48:00 UTC by Randi Jackson
Updated	2019-09-16 17:03:15 UTC by Randi Jackson
Location	44.8000115622, -67.8925432172
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-11
Survey Site	AD-3

Survey Overview

Survey Start Time	08:12
Survey End Time	10:13
Duration of survey (minutes)	121
Count of raptors observed	2

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	S
Temperature (F)	65
Relative Humidity	69
Barametric Pressure (inches)	30.09
Cloud Cover (percent)	90
Visibility	Unlimited
Precipitation	0 - none

Sharp-shinned Hawk, 1

Raptor Site	AD-3
Raptor Date	7/11/19
Species	Sharp-shinned Hawk
Raptor observation number	1
Count of individuals in group	1
Time first observed	09:42
Time last observed	09:43
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown
Behavior	Gliding
General Flight Direction	E
Flight Height	1 - below rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Spotted gliding from the western tree line into the eastern tree line. Observed for less than a minute.

Map of Flight Path



Turkey Vulture, 2

Raptor Site	AD-3
Raptor Date	7/11/19
Species	Turkey Vulture
Raptor observation number	2
Count of individuals in group	1
Time first observed	10:07
Time last observed	10:08
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Unknown
Sex	Unknown
Behavior	Circling, Gliding
General Flight Direction	W
Flight Height	2 - within rotor swept area
Horizontal Position Code	A2 - Over ridge, perpendicular
Notes	Spotted circling over the tree line in the south. Circled a few times then glided west.

Map of Flight Path



AD-3, 2019-08-28

Created	2019-08-28 15:45:25 UTC by Meg Stevenson
Updated	2019-08-28 17:42:38 UTC by Meg Stevenson
Location	44.8000383004963, -67.892518071521
Lead Observer	Meg Dood
Survey Interval	August
Date	2019-08-28
Survey Site	AD-3

Survey Overview

Survey Start Time	11:43
Survey End Time	13:43
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	SE
Temperature (F)	75
Relative Humidity	80
Barametric Pressure (inches)	30.01
Cloud Cover (percent)	10
Visibility	10km
Precipitation	0 - none

13:41

Time of observation	13:41
Describe observation	AMCO sight and sound

AD-3, 2019-09-13

Created	2019-09-13 15:50:08 UTC by Randi Jackson
Updated	2019-12-17 17:56:15 UTC by Meg Stevenson
Location	44.7999748076, -67.8925166466
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-13
Survey Site	AD-3

Survey Overview

Survey Start Time	11:45
Survey End Time	13:45
Duration of survey (minutes)	120
Count of raptors observed	2

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	65
Relative Humidity	56
Barametric Pressure (inches)	30
Cloud Cover (percent)	0
Visibility	Unlimited

Turkey Vulture, 1

Raptor Site	AD-3
Raptor Date	9/13/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	1
Time first observed	12:27
Time last observed	12:28
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown
Behavior	Gliding
General Flight Direction	NW
Flight Height	2 - within rotor swept area
Horizontal Position Code	A1 - Over ridge, parallel
Notes	Spotted gliding in from the south over the clearing. Continued gliding north west.

Map of Flight Path



Broad-winged Hawk, 2

Raptor Site	AD-3
Raptor Date	9/13/19
Species	Broad-winged Hawk
Raptor observation number	2
Count of individuals in group	1
Time first observed	12:50
Time last observed	12:51
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown
Behavior	Circling
General Flight Direction	S
Flight Height	2 - within rotor swept area
Horizontal Position Code	A1 - Over ridge, parallel
Notes	Spotted initially circling in the west over the ridge line. Continued circling south following the ridge.

Map of Flight Path



11:45

Time of observation	11:45
Describe observation	Bobcat tracks crossing the road heading east.

AD-3, 2019-10-11

Created	2019-10-11 15:13:59 UTC by Randi Jackson
Updated	2019-12-17 17:53:09 UTC by Meg Stevenson
Location	44.8000364984, -67.892524777
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-10-11
Survey Site	AD-3

Survey Overview

Survey Start Time	11:08
Survey End Time	13:08
Duration of survey (minutes)	120
Count of eagles observed	3
Count of raptors observed	4

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	NE
Temperature (F)	57
Relative Humidity	52
Barametric Pressure (inches)	30.3
Cloud Cover (percent)	75
Visibility	Unlimited
Precipitation	0 - none

Bald Eagle, 1

Raptor Site	AD-3
Raptor Date	10/11/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	11:23
Time last observed	11:28
Duration of observation (minutes)	5
Duration within survey boundary	5
Age	Adult
Sex	Unknown
Behavior	Circling, Flapping, Gliding, Soaring
General Flight Direction	W
Flight Height	2 - within rotor swept area, 3 - above rotor swept area
Horizontal Position Code	A2 - Over ridge, perpendicular

Notes	Initially spotted circling over the tree line in the east. Circled and soared for a few minutes over the tree line heading north, then turned NW and began slowly ascending while soaring over the fields. Soared slowly over the fields for a minute heading into a strong wind. It then began descending and gliding heading west over the ridge-line.
Map of Flight Path	

Weather during observation

Wind Speed	6 - Strong breeze

Red-tailed Hawk, 2

Raptor Site	AD-3
Raptor Date	10/11/19
Species	Red-tailed Hawk
Raptor observation number	2
Count of individuals in group	1
Time first observed	11:42
Time last observed	11:44
Duration of observation (minutes)	2
Duration within survey boundary	2
Age	Adult
Sex	Unknown
Behavior	Gliding, Kiting
General Flight Direction	E
Flight Height	2 - within rotor swept area, 1 - below rotor swept area
Horizontal Position Code	D - flight path over a valley

Notes	Initially observed flying over the ridge-line in the west heading east. Flew low over the field out of site.
Map of Flight Path	

Bald Eagle, 3

Raptor Site	AD-3
Raptor Date	10/11/19
Species	Bald Eagle
Raptor observation number	3
Count of individuals in group	1
number of eagles observed	1
Time first observed	11:54
Time last observed	11:57
Duration of observation (minutes)	3
Duration within survey boundary	3
Age	Adult
Sex	Unknown
Behavior	Circling, Gliding
General Flight Direction	W
Flight Height	2 - within rotor swept area, 3 - above rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Initially observed circling over the Eastern tree line. Circled a few times while ascending and making its way west. Lost sight in the clouds.

Map of Flight Path



Bald Eagle, 4

Raptor Site	AD-3
Raptor Date	10/11/19
Species	Bald Eagle
Raptor observation number	4
Count of individuals in group	1
number of eagles observed	1
Time first observed	12:43
Time last observed	12:44
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown
Behavior	Flapping, Gliding
General Flight Direction	N
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Spotted gliding in the south heading north. Observed briefly flapping and gliding over the tree line to the east.

Map of Flight Path	

12:03

Time of observation	12:03
Describe observation	BLJA CORA

AD-3, 2019-11-07

Created	2019-11-07 15:07:47 UTC by Randi Jackson
Updated	2019-12-17 17:50:49 UTC by Meg Stevenson
Location	44.7999782442, -67.8924140521
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-07
Survey Site	AD-3

Survey Overview

Survey Start Time	08:08
Survey End Time	10:08
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	NW
Temperature (F)	42
Relative Humidity	92
Barametric Pressure (inches)	30.13
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	2 - Drizzle

10:08

Time of observation	10:08
Describe observation	Other Birds: BLJA CORA AMCR BCCH

AD-3, 2019-12-05

Created	2019-12-05 18:20:31 UTC by Matthew Todd
Updated	2019-12-05 20:18:44 UTC by Matthew Todd
Location	44.8000973929137, -67.8925018944478
Lead Observer	Matthew Todd
Survey Interval	December
Date	2019-12-05
Survey Site	AD-3

Survey Overview

Survey Start Time	13:20
Survey End Time	15:20
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	NE
Temperature (F)	30
Relative Humidity	90
Barametric Pressure (inches)	29.5
Cloud Cover (percent)	15
Visibility	Clear
Precipitation	0 - none
Weather Comment	Partly cloudy

13:53

Time of weather observation	13:53
Wind Speed	3 - Gentle breeze
Cloud Cover (percent)	85

14:50

Time of weather observation	14:50
Wind Speed	1 - Light air
Cloud Cover (percent)	95

13:28

Time of observation	13:28
Describe observation	BLJA

AD-4, 2019-01-30

Created	2019-02-04 14:44:54 UTC by Joseph Roy
Updated	2019-03-18 18:22:35 UTC by Meg Stevenson
Location	44.78465, -67.873082
Lead Observer	Joseph Roy
Survey Interval	January
Date	2019-01-30
Survey Site	AD-4

Survey Overview

Survey Start Time	12:50
Survey End Time	14:50
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SE
Temperature (F)	37
Relative Humidity	99
Barametric Pressure (inches)	29.62
Cloud Cover (percent)	100
Visibility	2
Precipitation	2 - Drizzle

AD-4, 2019-02-11

Created	2019-02-11 15:59:19 UTC by Joseph Roy
Updated	2019-03-18 18:13:39 UTC by Meg Stevenson
Location	44.7847276, -67.8730885
Lead Observer	Joseph Roy
Survey Interval	February
Date	2019-02-11
Survey Site	AD-4

Survey Overview

Survey Start Time	10:40
Survey End Time	12:40
Duration of survey (minutes)	120

Weather Summary

Wind Speed	0 - Calm
Temperature (F)	12
Cloud Cover (percent)	0
Visibility	2
Precipitation	0 - none

AD-4, 2019-03-07

Created	2019-03-07 19:40:36 UTC by Joseph Roy
Updated	2019-03-18 18:11:00 UTC by Meg Stevenson
Location	44.781432, -67.8720569
Lead Observer	Joseph Roy
Survey Interval	March
Date	2019-03-07
Survey Site	AD-4

Survey Overview

Survey Start Time	14:17
Survey End Time	16:17
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	NW
Temperature (F)	15
Cloud Cover (percent)	5
Visibility	10
Precipitation	0 - none
Weather Comment	Cold and windy

AD-4, 2019-04-12

Created	2019-04-12 12:50:29 UTC by Joe Roy
Updated	2019-04-22 19:34:34 UTC by Meg Stevenson
Location	44.7814138, -67.8721983
Lead Observer	Joe Roy
Survey Interval	April
Date	2019-04-12
Survey Site	AD-4

Survey Overview

Survey Start Time	08:00
Survey End Time	10:00
Duration of survey (minutes)	120

Weather Summary

Wind Speed	0 - Calm
Temperature (F)	38
Barametric Pressure (inches)	1019
Cloud Cover (percent)	20
Visibility	10
Precipitation	0 - none
Weather Comment	Partly cloudy. Calm

AD-4, 2019-05-09

Created	2019-05-09 10:27:14 UTC by Karla Fortier
Updated	2019-05-09 13:00:31 UTC by Karla Fortier
Location	44.7858381539653, -67.8735599666834
Lead Observer	Karla Fortier
Survey Interval	May
Date	2019-05-09
Survey Site	AD-4

Survey Overview

Survey Start Time	06:25
Survey End Time	08:25
Duration of survey (minutes)	120
Survey Summary Comments	No Eagles or other raptors observed.

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	NNW
Temperature (F)	39
Relative Humidity	58
Barametric Pressure (inches)	30.33
Cloud Cover (percent)	0
Visibility	16+
Precipitation	0 - none
Weather Comment	Clear, crisp, sunny AM

06:30

Time of observation	06:30
Describe observation	Moose tracks along road headed south.

AD-4, 2019-06-27

Created	2019-06-27 15:28:04 UTC by Randi Jackson
Updated	2019-08-05 16:27:26 UTC by Meg Stevenson
Location	44.7814267, -67.872131
Lead Observer	Randi Jackson
Survey Interval	June
Date	2019-06-27
Survey Site	AD-4

Survey Overview

Survey Start Time	09:28
Survey End Time	11:28
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	S
Temperature (F)	57
Relative Humidity	100
Barametric Pressure (inches)	29.85
Cloud Cover (percent)	100
Visibility	5km
Precipitation	0 - none

AD-4, 2019-07-18

Created	2019-07-18 15:55:18 UTC by Randi Jackson
Updated	2019-08-05 16:33:01 UTC by Meg Stevenson
Location	44.7813508667, -67.87219625
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-18
Survey Site	AD-4

Survey Overview

Survey Start Time	09:53
Survey End Time	11:55
Duration of survey (minutes)	122

Weather Summary

Wind Speed	1 - Light air
Wind Direction	N
Temperature (F)	77
Relative Humidity	47
Barametric Pressure (inches)	30.03
Cloud Cover (percent)	50
Visibility	Unlimited
Precipitation	0 - none

AD-4, 2019-08-22

Created	2019-08-22 15:32:44 UTC by Randi Jackson
Updated	2019-08-27 13:40:18 UTC by Meg Stevenson
Location	44.7821639267, -67.8723124042
Lead Observer	Randi Jackson
Survey Interval	August
Date	2019-08-22
Survey Site	AD-4

Survey Overview

Survey Start Time	09:26
Survey End Time	11:26
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	S
Temperature (F)	72
Relative Humidity	87
Barametric Pressure (inches)	29.82
Cloud Cover (percent)	75
Visibility	Unlimited
Precipitation	0 - none

AD-4, 2019-09-13

Created	2019-09-13 13:53:01 UTC by Randi Jackson
Updated	2019-12-17 17:58:43 UTC by Meg Stevenson
Location	44.7813963611, -67.8721227218
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-13
Survey Site	AD-4

Survey Overview

Survey Start Time	09:27
Survey End Time	11:30
Duration of survey (minutes)	123
Count of raptors observed	1

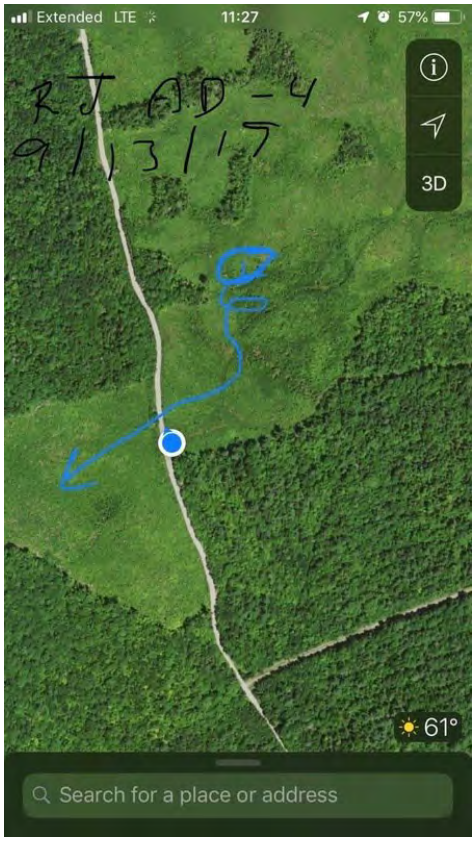
Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	58
Relative Humidity	60
Barametric Pressure (inches)	30.52
Cloud Cover (percent)	10
Visibility	Unlimited
Precipitation	0 - none

Turkey Vulture, 1

Raptor Site	AD-4
Raptor Date	9/13/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	1
Time first observed	11:27
Time last observed	11:28
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown
Behavior	Circling, Gliding
General Flight Direction	SW
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Spotted circling in the north. Circled twice then continued gliding south west.

Map of Flight Path



AD-4, 2019-09-30

Created	2019-09-30 14:43:22 UTC by Randi Jackson
Updated	2019-12-17 20:25:37 UTC by Meg Stevenson
Location	44.7814027733, -67.8720768728
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-09-30
Survey Site	AD-4

Survey Overview

Survey Start Time	08:57
Survey End Time	10:57
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	N
Temperature (F)	51
Relative Humidity	50
Barametric Pressure (inches)	30.41
Cloud Cover (percent)	0
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Beautiful cool, crisp fall day!

10:45

Time of observation	10:45
Describe observation	Other Birds: BLJA CEWA

AD-4, 2019-11-07

Created	2019-11-07 17:19:28 UTC by Randi Jackson
Updated	2019-12-17 17:50:38 UTC by Meg Stevenson
Location	44.7812928027, -67.8721367196
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-07
Survey Site	AD-4

Survey Overview

Survey Start Time	10:19
Survey End Time	12:19
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	S
Temperature (F)	51
Relative Humidity	67
Barametric Pressure (inches)	30.1
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	2 - Drizzle

AD-4, 2019-12-05

Created	2019-12-05 15:56:18 UTC by Matthew Todd
Updated	2019-12-05 18:23:23 UTC by Matthew Todd
Location	44.7813583910882, -67.8721037787086
Lead Observer	Matthew Todd
Survey Interval	December
Date	2019-12-05
Survey Site	AD-4

Survey Overview

Survey Start Time	10:52
Survey End Time	12:52
Duration of survey (minutes)	120
Survey Summary Comments	Only song birds

Weather Summary

Wind Speed	1 - Light air
Wind Direction	N
Temperature (F)	25
Relative Humidity	90
Barametric Pressure (inches)	29.5
Cloud Cover (percent)	90
Visibility	Clear
Precipitation	0 - none
Weather Comment	Mostly cloudy, small breeze

11:35

Time of weather observation	11:35
Cloud Cover (percent)	50
Weather Comment	Partly sunny

11:59

Time of weather observation	11:59
Cloud Cover (percent)	10
Weather Comment	Mostly sunny

11:00

Time of observation	11:00
Describe observation	BCCH

AD-5, 2019-01-30

Created	2019-01-31 21:00:03 UTC by Meg Stevenson
Updated	2019-03-18 18:13:21 UTC by Meg Stevenson
Location	44.771395, -67.867092
Lead Observer	Meg Dood
Survey Interval	January
Date	2019-01-30
Survey Site	AD-5

Survey Overview

Survey Start Time	12:30
Survey End Time	14:30
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SE
Temperature (F)	30
Relative Humidity	99
Barametric Pressure (inches)	29.62
Cloud Cover (percent)	80
Visibility	10km
Precipitation	0 - none

AD-5, 2019-02-11

Created	2019-02-11 17:45:33 UTC by Joseph Roy
Updated	2019-03-18 18:12:22 UTC by Meg Stevenson
Location	44.7715048, -67.8668547
Lead Observer	Joseph Roy
Survey Interval	February
Date	2019-02-11
Survey Site	AD-5

Survey Overview

Survey Start Time	12:45
Survey End Time	14:45
Duration of survey (minutes)	120

Weather Summary

Wind Speed	0 - Calm
Temperature (F)	25
Cloud Cover (percent)	0
Visibility	2
Precipitation	0 - none

AD-5, 2019-03-07

Created	2019-03-07 17:51:08 UTC by Joseph Roy
Updated	2019-03-18 18:11:16 UTC by Meg Stevenson
Location	44.7690757, -67.8664655
Lead Observer	Joseph Roy
Survey Interval	March
Date	2019-03-07
Survey Site	AD-5

Survey Overview

Survey Start Time	12:15
Survey End Time	14:15
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	NW
Temperature (F)	14
Cloud Cover (percent)	5
Visibility	10
Precipitation	0 - none
Weather Comment	Cold and windy.

AD-5, 2019-04-12

Created	2019-04-12 14:26:33 UTC by Joe Roy
Updated	2019-05-07 13:05:24 UTC by Meg Stevenson
Location	44.7709701, -67.8664582
Lead Observer	Joe Roy
Survey Interval	April
Date	2019-04-12
Survey Site	AD-5

Survey Overview

Survey Start Time	10:05
Survey End Time	12:05
Duration of survey (minutes)	120

Weather Summary

Wind Speed	0 - Calm
Temperature (F)	40
Barametric Pressure (inches)	1019
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none
Weather Comment	Sunny and clear

AD-5, 2019-05-30

Created	2019-05-30 16:10:20 UTC by Meg Stevenson
Updated	2019-05-30 18:04:08 UTC by Meg Stevenson
Location	44.7718273289919, -67.8669213317967
Lead Observer	Meg Dood
Survey Interval	May
Date	2019-05-30
Survey Site	AD-5

Survey Overview

Survey Start Time	12:06
Survey End Time	14:06
Duration of survey (minutes)	120

12:21

Time of weather observation	12:21
Wind Speed	2 - Light breeze
Wind Direction	NW
Temperature (F)	59
Visibility	10km
Precipitation	0 - none

AD-5, 2019-06-27

Created	2019-06-27 17:28:46 UTC by Randi Jackson
Updated	2019-08-05 16:26:59 UTC by Meg Stevenson
Location	44.7726552, -67.867337
Lead Observer	Randi Jackson
Survey Interval	June
Date	2019-06-27
Survey Site	AD-5

Survey Overview

Survey Start Time	11:33
Survey End Time	13:37
Duration of survey (minutes)	124

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	62
Relative Humidity	96
Barametric Pressure (inches)	29.86
Cloud Cover (percent)	100
Precipitation	0 - none

AD-5, 2019-07-23

Created	2019-07-23 18:06:10 UTC by Randi Jackson
Updated	2019-08-05 16:34:46 UTC by Meg Stevenson
Location	44.7726957361, -67.8672929854
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-23
Survey Site	AD-5

Survey Overview

Survey Start Time	14:03
Survey End Time	16:03
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	72
Relative Humidity	89
Barametric Pressure (inches)	29.84
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Very humid.

AD-5, 2019-08-22

Created	2019-08-22 15:34:50 UTC by Randi Jackson
Updated	2019-08-27 13:39:51 UTC by Meg Stevenson
Location	44.7728492925, -67.8673156165
Lead Observer	Randi Jackson
Survey Interval	August
Date	2019-08-22
Survey Site	AD-5

Survey Overview

Survey Start Time	11:28
Survey End Time	13:29
Duration of survey (minutes)	121

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	S
Temperature (F)	75
Relative Humidity	87
Barametric Pressure (inches)	29.82
Cloud Cover (percent)	75
Visibility	Unlimited
Precipitation	0 - none

AD-5, 2019-09-25

Created	2019-09-25 14:19:52 UTC by Randi Jackson
Updated	2019-12-17 17:57:00 UTC by Meg Stevenson
Location	44.7729730513, -67.8673831747
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-25
Survey Site	AD-5

Survey Overview

Survey Start Time	10:07
Survey End Time	12:07
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	N
Temperature (F)	52
Relative Humidity	87
Barametric Pressure (inches)	29.81
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

10:07

Time of observation	10:07
Describe observation	Other Birds: NOFL BLJA

AD-5, 2019-10-11

Created	2019-10-11 14:17:40 UTC by Randi Jackson
Updated	2019-12-17 17:53:22 UTC by Meg Stevenson
Location	44.7730177688, -67.8672987689
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-10-11
Survey Site	AD-5

Survey Overview

Survey Start Time	08:56
Survey End Time	10:56
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	S
Temperature (F)	52
Relative Humidity	63
Barametric Pressure (inches)	30.33
Cloud Cover (percent)	90
Visibility	Unlimited
Precipitation	0 - none

10:17

Time of observation	10:17
Describe observation	Other Birds: CORA YRWA

AD-5, 2019-11-07

Created	2019-11-07 18:58:35 UTC by Randi Jackson
Updated	2019-12-17 18:01:06 UTC by Meg Stevenson
Location	44.7726920061, -67.8673041333
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-07
Survey Site	AD-5

Survey Overview

Survey Start Time	12:25
Survey End Time	14:25
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	NW
Temperature (F)	46
Relative Humidity	88
Barametric Pressure (inches)	30.03
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	3 - Rain

AD-5, 2019-12-05

Created	2019-12-05 15:57:05 UTC by Randi Jackson
Updated	2019-12-17 17:47:05 UTC by Meg Stevenson
Location	44.7726960118, -67.8672662271
Lead Observer	Randi Jackson
Survey Interval	December
Date	2019-12-05
Survey Site	AD-5

Survey Overview

Survey Start Time	10:55
Survey End Time	12:55
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	NW
Temperature (F)	36
Relative Humidity	72
Barametric Pressure (inches)	29.53
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

11:02

Time of observation	11:02
Describe observation	Other Birds: BCCH CORA Other Wildlife: Snowshoe hare tracks Deer tracks Red squirrel tracks

AD-6, 2019-01-30

Created	2019-01-30 15:37:05 UTC by Meg Stevenson
Updated	2019-03-18 18:12:36 UTC by Meg Stevenson
Location	44.7641341249, -67.8309550044
Lead Observer	Meg Dood
Survey Interval	January
Date	2019-01-30
Survey Site	AD-6

Survey Overview

Survey Start Time	10:15
Survey End Time	12:15
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SE
Temperature (F)	37
Relative Humidity	99
Barametric Pressure (inches)	29.62
Cloud Cover (percent)	100
Visibility	2 km
Precipitation	3 - Rain

AD-6, 2019-02-11

Created	2019-02-11 19:59:02 UTC by Joseph Roy
Updated	2019-03-18 18:12:04 UTC by Meg Stevenson
Location	44.7643852, -67.8307083
Lead Observer	Joseph Roy
Survey Interval	February
Date	2019-02-11
Survey Site	AD-6

Survey Overview

Survey Start Time	14:50
Survey End Time	16:50
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	NW
Temperature (F)	20
Visibility	10
Precipitation	0 - none

AD-6, 2019-03-26

Created	2019-03-26 19:18:50 UTC by Joe Roy
Updated	2019-03-26 19:20:22 UTC by Joe Roy
Location	44.7671042911543, -67.8510917723179
Lead Observer	Joe Roy
Survey Interval	March
Date	2019-03-26
Survey Site	AD-6

Survey Overview

Survey Start Time	14:35
Survey End Time	16:35
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	NW
Temperature (F)	32
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none
Weather Comment	Calm winds, sunny, visibility unlimited

AD-6, 2019-04-12

Created	2019-04-12 16:32:33 UTC by Joe Roy
Updated	2019-04-22 19:36:57 UTC by Meg Stevenson
Location	44.7644786, -67.8309343
Lead Observer	Joe Roy
Survey Interval	April
Date	2019-04-12
Survey Site	AD-6

Survey Overview

Survey Start Time	12:10
Survey End Time	14:10
Duration of survey (minutes)	120

Weather Summary

Wind Speed	0 - Calm
Temperature (F)	41
Barametric Pressure (inches)	1019
Cloud Cover (percent)	5
Visibility	10
Precipitation	0 - none
Weather Comment	Warm and sunny

AD-6, 2019-05-30

Created	2019-05-30 14:34:15 UTC by Meg Stevenson
Updated	2019-05-30 15:56:57 UTC by Meg Stevenson
Location	44.7636120161458, -67.8299459908789
Lead Observer	Meg Dood
Survey Interval	May
Date	2019-05-30
Survey Site	AD-6

Survey Overview

Survey Start Time	09:56
Survey End Time	11:56
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Temperature (F)	57
Cloud Cover (percent)	100
Visibility	10km
Precipitation	0 - none

11:17

Time of observation	11:17
Describe observation	HETH EAPH CORA

AD-6, 2019-06-04

Created	2019-06-04 10:37:57 UTC by Karla Fortier
Updated	2020-02-05 18:35:00 UTC by Karla Fortier
Location	44.7643914, -67.830922
Lead Observer	Karla Fortier
Survey Interval	June
Date	2019-06-04
Survey Site	AD-6

Survey Overview

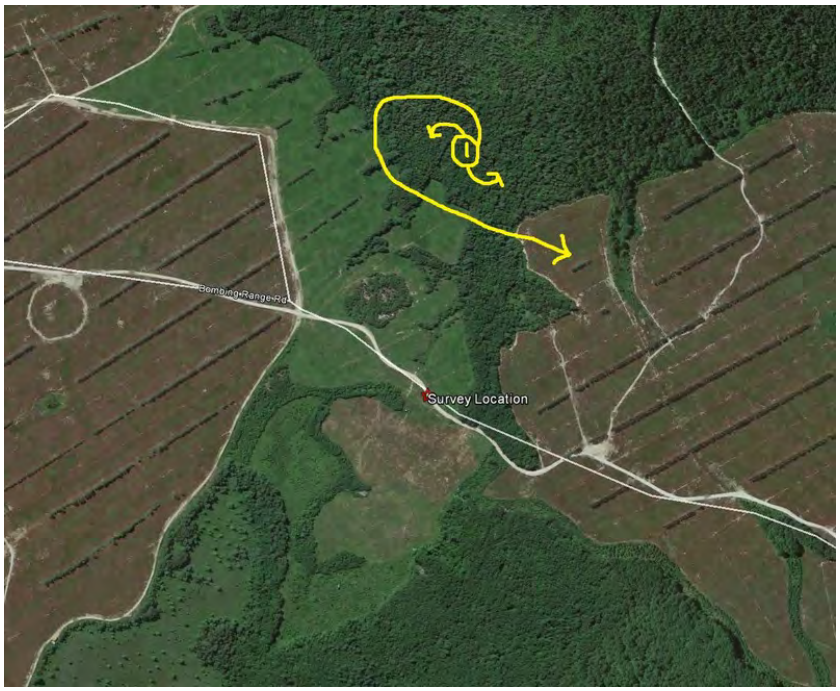
Survey Start Time	06:35
Survey End Time	08:35
Duration of survey (minutes)	120
Count of raptors observed	3
Survey Summary Comments	No eagles observed. Gorgeous AM.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	W
Temperature (F)	48
Relative Humidity	71
Barametric Pressure (inches)	29.93
Cloud Cover (percent)	50
Visibility	16
Precipitation	0 - none
Weather Comment	Clear and sunny between clouds.

Broad-winged Hawk, 1

Raptor Site	AD-6
Raptor Date	6/4/19
Species	Broad-winged Hawk
Raptor observation number	1
Count of individuals in group	2
Time first observed	08:09
Time last observed	08:12
Duration of observation (minutes)	3
Duration within survey boundary	0
Age	Adult
Sex	Unknown
Behavior	Circling, Flapping, Soaring
General Flight Direction	East then West
Flight Height	1 - below rotor swept area, 2 - within rotor swept area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	D - flight path over a valley

Notes	Both adults pop up circling low over tree tops south of survey location. Lots of flapping on a slow soar east then loop back west closer to survey location gaining enough height to be considered within RSA, before continuing to soar west over treeline out of sight.
Map of Flight Path	
	



Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	W
Temperature (F)	53
Relative Humidity	65
Barametric Pressure (inches)	29.93
Cloud Cover (percent)	10
Visibility	16
Precipitation	0 - none

Kestrel, 2

Raptor Site	AD-6
Raptor Date	6/4/19
Species	Kestrel
Raptor observation number	2
Count of individuals in group	1
Time first observed	08:17
Time last observed	08:19
Duration of observation (minutes)	2
Duration within survey boundary	0
Age	Adult
Sex	Female
Behavior	Flapping, Hunting

General Flight Direction	NW
Flight Height	1 - below rotor swept area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	D - flight path over a valley
Notes	Bird hovering over fields north of survey location just beyond bee boxes, hunting. Slowly scoots it's way north west into trees out of sight.
Map of Flight Path	

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	W
Temperature (F)	53
Relative Humidity	65
Barametric Pressure (inches)	29.93
Cloud Cover (percent)	10
Visibility	16
Precipitation	0 - none

AD-6, 2019-07-23

Created	2019-07-23 16:01:05 UTC by Randi Jackson
Updated	2019-08-05 16:34:18 UTC by Meg Stevenson
Location	44.7645126167, -67.8310064667
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-23
Survey Site	AD-6

Survey Overview

Survey Start Time	11:58
Survey End Time	13:58
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	67
Relative Humidity	87
Barametric Pressure (inches)	29.84
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	2 - Drizzle
Weather Comment	On and off drizzle throughout the survey.

AD-6, 2019-08-22

Created	2019-08-22 17:46:53 UTC by Randi Jackson
Updated	2019-12-17 18:00:12 UTC by Meg Stevenson
Location	44.7646561498, -67.8312800546
Lead Observer	Randi Jackson
Survey Interval	August
Date	2019-08-22
Survey Site	AD-6

Survey Overview

Survey Start Time	13:34
Survey End Time	15:34
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	S
Temperature (F)	82
Relative Humidity	87
Barametric Pressure (inches)	29.87
Cloud Cover (percent)	75
Visibility	Unlimited
Precipitation	0 - none

AD-6, 2019-09-25

Created	2019-09-25 16:24:32 UTC by Randi Jackson
Updated	2019-12-17 17:56:27 UTC by Meg Stevenson
Location	44.764331, -67.8308546667
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-25
Survey Site	AD-6

Survey Overview

Survey Start Time	12:15
Survey End Time	14:15
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	N
Temperature (F)	55
Relative Humidity	80
Barametric Pressure (inches)	29.82
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

12:15

Time of observation	12:15
Describe observation	Other Birds: NOFL BLJA CORA

AD-6, 2019-09-30

Created	2019-09-30 15:08:14 UTC by Randi Jackson
Updated	2019-12-17 20:25:03 UTC by Meg Stevenson
Location	44.7644128651, -67.8309729417
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-09-30
Survey Site	AD-6

Survey Overview

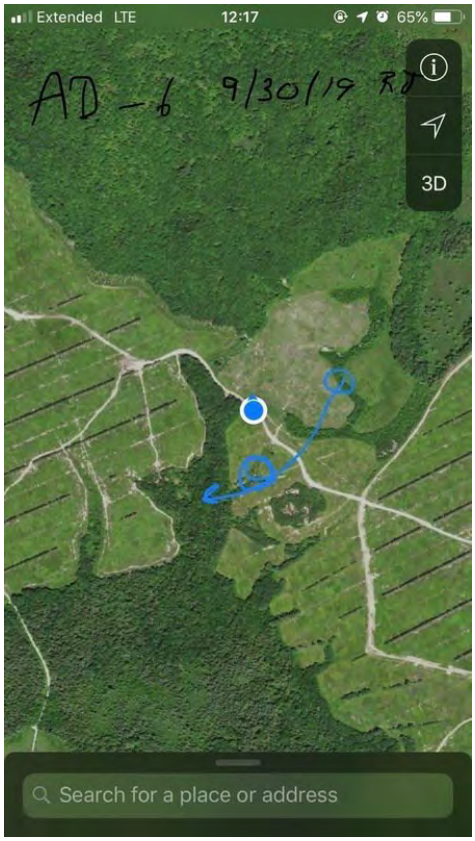
Survey Start Time	11:06
Survey End Time	13:06
Duration of survey (minutes)	120
Count of raptors observed	1

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	E
Temperature (F)	55
Relative Humidity	47
Barametric Pressure (inches)	30.4
Cloud Cover (percent)	0
Visibility	Unlimited
Precipitation	0 - none

Turkey Vulture, 1

Raptor Site	AD-4
Raptor Date	9/30/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	1
Time first observed	12:15
Time last observed	12:16
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown
Behavior	Gliding, Circling
General Flight Direction	SW
Flight Height	2 - within rotor swept area
Notes	Initially we observed gliding in from the north east. Circled twice then continued gliding heading south west.

Map of Flight Path	

11:09

Time of observation	11:09
Describe observation	Other Birds: NOFL AMCR

AD-6, 2019-11-25

Created	2019-11-25 18:31:35 UTC by Randi Jackson
Updated	2019-12-17 17:48:15 UTC by Meg Stevenson
Location	44.7644357896, -67.8309737798
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-25
Survey Site	AD-6

Survey Overview

Survey Start Time	11:33
Survey End Time	13:33
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	NW
Temperature (F)	44
Relative Humidity	68
Barametric Pressure (inches)	29.63
Cloud Cover (percent)	50
Visibility	Unlimited
Precipitation	0 - none

AD-6, 2019-12-05

Created	2019-12-05 13:40:41 UTC by Randi Jackson
Updated	2019-12-17 17:47:42 UTC by Meg Stevenson
Location	44.7639884893, -67.8305439559
Lead Observer	Randi Jackson
Survey Interval	December
Date	2019-12-05
Survey Site	AD-6

Survey Overview

Survey Start Time	08:33
Survey End Time	10:33
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	NW
Temperature (F)	28
Relative Humidity	96
Barametric Pressure (inches)	29.52
Cloud Cover (percent)	50
Visibility	Unlimited
Precipitation	0 - none

08:57

Time of observation	08:57
Describe observation	Other Wildlife: Deer Other Birds: AMGO BLJA

AD-7, 2019-01-30

Created	2019-02-04 14:41:53 UTC by Joseph Roy
Updated	2019-03-18 18:24:57 UTC by Meg Stevenson
Location	44.779592, -67.797413
Lead Observer	Joseph Roy
Survey Interval	January
Date	2019-01-30
Survey Site	AD-7

Survey Overview

Survey Start Time	10:00
Survey End Time	12:00
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SE
Temperature (F)	37
Relative Humidity	99
Barametric Pressure (inches)	29.62
Cloud Cover (percent)	100
Visibility	2
Precipitation	3 - Rain

AD-7, 2019-02-11

Created	2019-02-11 14:04:25 UTC by Joseph Roy
Updated	2019-03-18 18:13:56 UTC by Meg Stevenson
Location	44.7793541, -67.7978095
Lead Observer	Joseph Roy
Survey Interval	February
Date	2019-02-11
Survey Site	AD-7

Survey Overview

Survey Start Time	08:30
Survey End Time	10:30
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SW
Temperature (F)	12
Cloud Cover (percent)	5
Visibility	10
Precipitation	0 - none
Weather Comment	Cool calm. Icy roads, lacking snow.

AD-7, 2019-03-07

Created	2019-03-07 16:36:18 UTC by Joseph Roy
Updated	2019-03-18 18:11:31 UTC by Meg Stevenson
Location	44.7795083, -67.7967636
Lead Observer	Joseph Roy
Survey Interval	March
Date	2019-03-07
Survey Site	AD-7

Survey Overview

Survey Start Time	10:00
Survey End Time	12:00
Duration of survey (minutes)	120

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	SW
Temperature (F)	12
Cloud Cover (percent)	5
Visibility	10
Precipitation	0 - none
Weather Comment	Cold and windy.

AD-7, 2019-04-12

Created	2019-04-12 20:08:23 UTC by Joe Roy
Updated	2019-04-22 19:36:02 UTC by Meg Stevenson
Location	44.7794849, -67.7967301
Lead Observer	Joe Roy
Survey Interval	April
Date	2019-04-12
Survey Site	AD-7

Survey Overview

Survey Start Time	14:15
Survey End Time	16:15
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SW
Temperature (F)	46
Barametric Pressure (inches)	1018
Cloud Cover (percent)	100
Visibility	10
Precipitation	0 - none
Weather Comment	

AD-7, 2019-05-30

Created	2019-05-30 11:57:04 UTC by Meg Stevenson
Updated	2019-05-30 14:41:45 UTC by Meg Stevenson
Location	44.7838290408671, -67.8040760849303
Lead Observer	Meg Dood
Survey Interval	May
Date	2019-05-30
Survey Site	AD-7

Survey Overview

Survey Start Time	07:48
Survey End Time	09:48
Duration of survey (minutes)	120

Weather Summary

Wind Speed	0 - Calm
Wind Direction	NW
Cloud Cover (percent)	100
Visibility	10km
Precipitation	0 - none

AD-7, 2019-06-27

Created	2019-06-27 13:12:42 UTC by Randi Jackson
Updated	2019-08-05 16:27:42 UTC by Meg Stevenson
Location	44.7840664583, -67.804085305
Lead Observer	Randi Jackson
Survey Interval	June
Date	2019-06-27
Survey Site	AD-7

Survey Overview

Survey Start Time	07:12
Survey End Time	09:12
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	54
Relative Humidity	100
Barametric Pressure (inches)	29.85
Cloud Cover (percent)	100
Visibility	500m
Precipitation	1 - Haze or Fog

AD-7, 2019-07-23

Created	2019-07-23 15:45:39 UTC by Randi Jackson
Updated	2019-08-05 16:34:34 UTC by Meg Stevenson
Location	44.7793732631, -67.7977853828
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-23
Survey Site	AD-7

Survey Overview

Survey Start Time	09:47
Survey End Time	11:47
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	67
Relative Humidity	87
Barametric Pressure (inches)	29.84
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	2 - Drizzle
Weather Comment	On and off drizzle throughout the survey.

AD-7, 2019-08-28

Created	2019-08-28 18:20:01 UTC by Meg Stevenson
Updated	2019-08-28 20:02:24 UTC by Meg Stevenson
Location	44.7795613529578, -67.7976250369733
Lead Observer	Meg Dood
Survey Interval	August
Date	2019-08-28
Survey Site	AD-7

Survey Overview

Survey Start Time	14:09
Survey End Time	16:09
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	SE
Temperature (F)	78
Relative Humidity	80
Barametric Pressure (inches)	30.01
Cloud Cover (percent)	90
Visibility	10km
Precipitation	0 - none

AD-7, 2019-09-25

Created	2019-09-25 18:44:53 UTC by Randi Jackson
Updated	2019-12-17 17:55:58 UTC by Meg Stevenson
Location	44.7793549067, -67.797804745
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-25
Survey Site	AD-7

Survey Overview

Survey Start Time	14:25
Survey End Time	16:25
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	N
Temperature (F)	57
Relative Humidity	74
Barametric Pressure (inches)	29.87
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

14:25

Time of observation	14:25
Describe observation	Other Birds: NOFL CEWA CORA CAGO BLJA

AD-7, 2019-09-30

Created	2019-09-30 17:19:48 UTC by Randi Jackson
Updated	2020-01-02 15:39:39 UTC by Randi Jackson
Location	44.7793337843, -67.7977964469
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-09-30
Survey Site	AD-7

Survey Overview

Survey Start Time	13:17
Survey End Time	15:21
Duration of survey (minutes)	124
Count of raptors observed	1

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	NE
Temperature (F)	58
Relative Humidity	41
Barametric Pressure (inches)	30.36
Cloud Cover (percent)	10
Visibility	Unlimited
Precipitation	0 - none

Kestrel, 1

Raptor Site	AD-7
Raptor Date	9/30/19
Species	Kestrel
Raptor observation number	1
Count of individuals in group	1
Time first observed	15:19
Time last observed	15:20
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Male
Behavior	Flapping, Gliding, Circling
General Flight Direction	NE
Flight Height	1 - below rotor swept area
Notes	Initially spotted circling over the field. Circled a few times then continued flapping and gliding

Map of Flight Path



13:21

Time of observation	13:21
Describe observation	Other Birds: AMCR BLJA

AD-7, 2019-11-25

Created	2019-11-25 20:11:07 UTC by Randi Jackson
Updated	2019-12-17 17:48:04 UTC by Meg Stevenson
Location	44.7844382795, -67.8030068055
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-25
Survey Site	AD-7

Survey Overview

Survey Start Time	13:40
Survey End Time	15:41
Duration of survey (minutes)	121

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	NW
Temperature (F)	42
Relative Humidity	68
Barametric Pressure (inches)	29.69
Cloud Cover (percent)	10
Visibility	Unlimited
Precipitation	0 - none

AD-7, 2019-12-05

Created	2019-12-05 13:26:11 UTC by Matthew Todd
Updated	2019-12-05 18:24:42 UTC by Matthew Todd
Location	44.7843870241612, -67.8029539157337
Lead Observer	Matthew Todd
Survey Interval	December
Date	2019-12-05
Survey Site	AD-7

Survey Overview

Survey Start Time	08:25
Survey End Time	10:25
Duration of survey (minutes)	120
Survey Summary Comments	Only song birds

Weather Summary

Wind Speed	1 - Light air
Wind Direction	N
Temperature (F)	33
Relative Humidity	90
Barametric Pressure (inches)	29.5
Cloud Cover (percent)	10
Visibility	Clear
Precipitation	0 - none
Weather Comment	Mostly sunny, calm, slight breeze

10:20

Time of weather observation	10:20
Cloud Cover (percent)	60
Weather Comment	Changed to mostly cloudy

09:00

Time of observation	09:00
Describe observation	BCCH, BLJA, common raven, American goldfinch

AD-8, 2019-03-27

Created	2019-03-27 19:04:11 UTC by Joe Roy
Updated	2019-03-27 19:05:17 UTC by Joe Roy
Location	44.7402883, -67.9179373
Lead Observer	Joe Roy
Survey Interval	March
Date	2019-03-27
Survey Site	AD-8

Survey Overview

Survey Start Time	14:40
Survey End Time	16:40
Duration of survey (minutes)	120

Weather Summary

Wind Speed	0 - Calm
Temperature (F)	43
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none
Weather Comment	Warm, clear, calm

AD-8, 2019-04-18

Created	2019-04-18 19:16:54 UTC by Joe Roy
Updated	2019-04-22 19:35:34 UTC by Meg Stevenson
Location	44.7401445147, -67.9177711532
Lead Observer	Joe Roy
Survey Interval	April
Date	2019-04-18
Survey Site	AD-8

Survey Overview

Survey Start Time	13:00
Survey End Time	15:00
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	N
Temperature (F)	52
Barametric Pressure (inches)	1021
Cloud Cover (percent)	100
Visibility	10
Precipitation	0 - none

AD-8, 2019-05-24

Created	2019-05-24 14:14:30 UTC by Randi Jackson
Updated	2019-12-17 19:53:31 UTC by Meg Stevenson
Location	44.7403552942, -67.9188240879
Lead Observer	Randi Jackson
Survey Interval	May
Date	2019-05-24
Survey Site	AD-8

Survey Overview

Survey Start Time	10:05
Survey End Time	12:06
Duration of survey (minutes)	121
Count of raptors observed	1

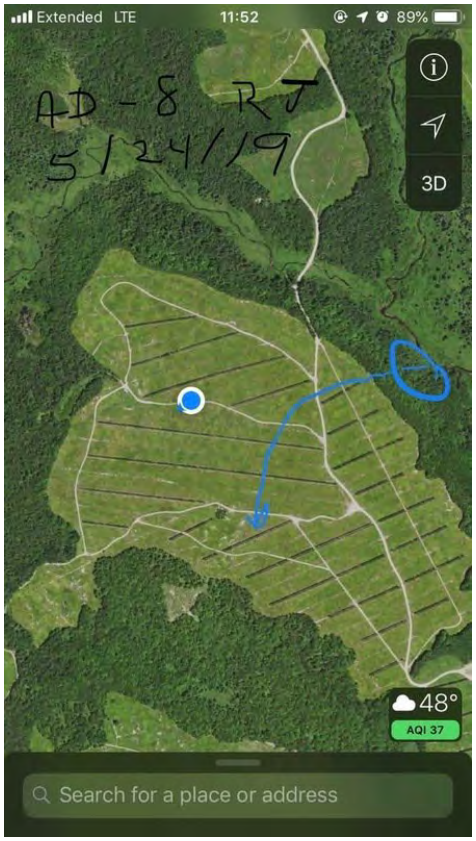
Weather Summary

Wind Speed	1 - Light air
Wind Direction	N
Temperature (F)	48
Relative Humidity	97
Barametric Pressure (inches)	29.65
Cloud Cover (percent)	100
Visibility	5km
Precipitation	3 - Rain

Turkey Vulture, 1

Raptor Site	AD-8
Raptor Date	5/24/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	1
Time first observed	11:46
Time last observed	11:48
Duration of observation (minutes)	2
Age	Adult
Sex	Unknown
Behavior	Soaring
General Flight Direction	S
Flight Height	2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Spotted gliding in from over the eastern tree line heading west. Turned over the fields and continued gliding south.

Map of Flight Path



AD-8, 2019-06-03

Created	2019-06-03 10:16:56 UTC by Karla Fortier
Updated	2019-09-16 17:20:03 UTC by Randi Jackson
Location	44.7402785, -67.9177992
Lead Observer	Karla Fortier
Survey Interval	June
Date	2019-06-03
Survey Site	AD-8

Survey Overview

Survey Start Time	06:15
Survey End Time	08:15
Duration of survey (minutes)	120
Count of raptors observed	1
Survey Summary Comments	No eagles observed. AM fog lifts around 7:40am. Otherwise a very quiet AM. Only raptor observed right before departure.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	S
Temperature (F)	50
Relative Humidity	96
Barametric Pressure (inches)	29.67
Cloud Cover (percent)	100
Visibility	3
Precipitation	1 - Haze or Fog
Weather Comment	AM fog but no hinerance to visibility requirements.

Merlin, 1

Raptor Site	AD-8
Raptor Date	6/3/19
Species	Merlin
Raptor observation number	1
Count of individuals in group	1
Time first observed	08:17
Time last observed	08:18
Duration of observation (minutes)	1
Duration within survey boundary	0
Age	Adult
Sex	Unknown
Behavior	Flapping
General Flight Direction	SW
Flight Height	1 - below rotor swept area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	D - flight path over a valley

Notes	Bird emerges from behind stand of trees from NE, flapping right across road in immediate view, crossing access road, SW to the next nearest treeline between blueberry fields. Bird flies low, disappears through and beyond treeline to SW.
Map of Flight Path	

Weather during observation

Wind Speed	2 - Light breeze
Wind Direction	S
Temperature (F)	52
Relative Humidity	94
Barametric Pressure (inches)	29.68
Cloud Cover (percent)	100
Visibility	3
Precipitation	0 - none

06:10

Time of observation	06:10
Describe observation	One adult Broadwing hawk on drive into eagle site off Hatchey Rd, flying between trees to cross road.

AD-8, 2019-07-19

Created	2019-07-19 14:32:07 UTC by Randi Jackson
Updated	2019-08-05 16:33:59 UTC by Meg Stevenson
Location	44.6954125353, -67.8743498773
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-19
Survey Site	AD-8

Survey Overview

Survey Start Time	08:10
Survey End Time	10:13
Duration of survey (minutes)	123

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	S
Temperature (F)	74
Relative Humidity	56
Barametric Pressure (inches)	29.87
Cloud Cover (percent)	0
Visibility	Unlimited
Precipitation	0 - none

AD-8, 2019-08-14

Created	2019-08-14 15:12:35 UTC by Meg Stevenson
Updated	2019-08-14 19:17:34 UTC by Meg Stevenson
Location	44.7402217286124, -67.9176844843364
Lead Observer	Meg Dood
Survey Interval	August
Date	2019-08-14
Survey Site	AD-8

Survey Overview

Survey Start Time	11:11
Survey End Time	13:11
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	E
Temperature (F)	79
Relative Humidity	53
Barametric Pressure (inches)	29.89
Cloud Cover (percent)	10
Visibility	10km
Precipitation	0 - none

12:47

Time of weather observation	12:47
Wind Speed	3 - Gentle breeze
Wind Direction	NE
Temperature (F)	83
Relative Humidity	44
Barametric Pressure (inches)	29.88
Cloud Cover (percent)	40
Visibility	10km
Precipitation	0 - none

12:47

Time of observation	12:47
Describe observation	CORA - 7

AD-8, 2019-09-06

Created	2019-09-06 17:57:01 UTC by Randi Jackson
Updated	2019-12-17 17:59:25 UTC by Meg Stevenson
Location	44.7402454913, -67.9176200275
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-06
Survey Site	AD-8

Survey Overview

Survey Start Time	11:56
Survey End Time	13:57
Duration of survey (minutes)	121

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	72
Relative Humidity	51
Barametric Pressure (inches)	30.89
Cloud Cover (percent)	50
Visibility	Unlimited
Precipitation	0 - none

AD-8, 2019-10-25

Created	2019-10-25 15:03:57 UTC by Randi Jackson
Updated	2019-12-17 17:52:13 UTC by Meg Stevenson
Location	44.7401255, -67.9174455
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-10-25
Survey Site	AD-8

Survey Overview

Survey Start Time	10:52
Survey End Time	12:52
Duration of survey (minutes)	120

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	W
Temperature (F)	55
Relative Humidity	57
Barametric Pressure (inches)	30.31
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

AD-8, 2019-11-14

Created	2019-11-14 18:28:22 UTC by Randi Jackson
Updated	2019-12-17 17:49:57 UTC by Meg Stevenson
Location	44.7402161127, -67.9175921158
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-14
Survey Site	AD-8

Survey Overview

Survey Start Time	11:28
Survey End Time	13:28
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	NE
Temperature (F)	28
Relative Humidity	76
Barametric Pressure (inches)	30.46
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

AD-8, 2019-12-13

Created	2019-12-13 14:10:15 UTC by Meg Stevenson
Updated	2019-12-13 16:04:00 UTC by Meg Stevenson
Location	44.7401952837079, -67.9174715001769
Lead Observer	Meg Stevenson
Survey Interval	December
Date	2019-12-13
Survey Site	AD-8

Survey Overview

Survey Start Time	09:06
Survey End Time	11:06
Duration of survey (minutes)	120

Weather Summary

Wind Speed	0 - Calm
Temperature (F)	27
Relative Humidity	91
Barametric Pressure (inches)	30.56
Cloud Cover (percent)	70
Visibility	10km
Precipitation	0 - none

10:58

Time of weather observation	10:58
Wind Speed	2 - Light breeze
Wind Direction	SW
Temperature (F)	39
Relative Humidity	68
Barametric Pressure (inches)	30.52
Cloud Cover (percent)	80
Visibility	10km
Precipitation	0 - none

10:28

Time of observation	10:28
Describe observation	CORA

AD-8, 2020-01-10

Created	2020-01-10 15:17:09 UTC by Randi Jackson
Updated	2020-01-10 17:26:35 UTC by Randi Jackson
Location	44.7400784818872, -67.917144103039
Lead Observer	Randi Jackson
Survey Interval	July
Date	2020-01-10
Survey Site	AD-8

Survey Overview

Survey Start Time	08:17
Survey End Time	10:17
Duration of survey (minutes)	120

Weather Summary

Wind Speed	6 - Strong breeze
Wind Direction	S
Temperature (F)	38
Relative Humidity	77
Barametric Pressure (inches)	30.48
Cloud Cover (percent)	100
Visibility	20km
Precipitation	0 - none

10:05

Time of weather observation	10:05
Wind Speed	6 - Strong breeze
Wind Direction	S
Temperature (F)	38
Relative Humidity	72
Barametric Pressure (inches)	30.36
Cloud Cover (percent)	100
Visibility	20km
Precipitation	2 - Drizzle
Weather Comment	Start of the incoming storm.

10:18

Time of observation	10:18
Describe observation	Other Birds: SNBU CORA

AD-8, 2020-02-03

Created	2020-02-03 15:18:28 UTC by Randi Jackson
Updated	2020-02-03 15:19:48 UTC by Randi Jackson
Location	44.740128186573, -67.91748248047
Lead Observer	Randi Jackson
Survey Interval	July
Date	2020-02-03
Survey Site	AD-8

Survey Overview

Survey Start Time	08:17
Survey End Time	10:17
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	W
Temperature (F)	34
Relative Humidity	57
Barametric Pressure (inches)	29.61
Cloud Cover (percent)	10
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Absolutely gorgeous, clear blue sky day

AD-9, 2019-03-27

Created	2019-03-27 17:07:10 UTC by Joe Roy
Updated	2019-03-27 18:41:34 UTC by Joe Roy
Location	44.7281921, -67.9047738
Lead Observer	Joe Roy
Survey Interval	March
Date	2019-03-27
Survey Site	AD-9

Survey Overview

Survey Start Time	12:35
Survey End Time	14:35
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	NW
Temperature (F)	40
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none
Weather Comment	Calm, warming, unlimited visibility

AD-9, 2019-04-18

Created	2019-04-18 19:23:09 UTC by Joe Roy
Updated	2019-04-22 19:35:20 UTC by Meg Stevenson
Location	44.7277044, -67.9048708
Lead Observer	Joe Roy
Survey Interval	April
Date	2019-04-18
Survey Site	AD-9

Survey Overview

Survey Start Time	15:05
Survey End Time	17:05
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	N
Temperature (F)	50
Barametric Pressure (inches)	1021
Cloud Cover (percent)	100
Visibility	10
Precipitation	0 - none

AD-9, 2019-05-08

Created	2019-05-08 10:29:47 UTC by Karla Fortier
Updated	2019-05-08 15:51:48 UTC by Karla Fortier
Location	44.7276845, -67.9049794
Lead Observer	Karla Fortier
Survey Interval	May
Date	2019-05-08
Survey Site	AD-9

Survey Overview

Survey Start Time	06:22
Survey End Time	08:22
Duration of survey (minutes)	120
Count of raptors observed	1
Survey Summary Comments	No Eagles observed. Really nice, crisp, clear AM.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	NW
Temperature (F)	42
Relative Humidity	91
Barametric Pressure (inches)	30.21
Cloud Cover (percent)	0
Visibility	16+
Precipitation	0 - none
Weather Comment	Extremely gorgeous morning.

Turkey Vulture, 1

Raptor Site	AD-9
Raptor Date	5/8/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	1
Time first observed	06:37
Time last observed	06:39
Duration of observation (minutes)	2
Duration within survey boundary	2
Age	Unknown
Sex	Unknown
Behavior	Circling, Soaring
General Flight Direction	SE
Flight Height	1 - below rotor swept area, 2 - within rotor swept area
Turbine Pad Utilized (WTG)	N/A
Horizontal Position Code	Plain, open terrain

Notes	TUVU emerges low NE over fields and treeline. Circles a few times , gains some altitude then soars off SE.
Map of Flight Path	
	

Weather during observation

Wind Speed	2 - Light breeze
Wind Direction	NW
Temperature (F)	43
Relative Humidity	90
Barametric Pressure (inches)	30.21
Cloud Cover (percent)	0
Visibility	16+
Precipitation	0 - none

07:00

Time of weather observation	07:00
Wind Speed	3 - Gentle breeze
Wind Direction	NNW
Weather Comment	Note only to comment wind has picked up. All other parameters same.

AD-9, 2019-06-12

Created	2019-06-12 14:10:01 UTC by Karla Fortier
Updated	2019-08-05 16:20:33 UTC by Meg Stevenson
Location	44.7276985, -67.9051657
Lead Observer	Karla Fortier
Survey Interval	June
Date	2019-06-12
Survey Site	AD-9

Survey Overview

Survey Start Time	10:10
Survey End Time	12:10
Duration of survey (minutes)	120
Survey Summary Comments	No eagles ir other raptors observed.

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	66
Relative Humidity	37
Barametric Pressure (inches)	30.07
Cloud Cover (percent)	5
Visibility	16+
Precipitation	0 - none
Weather Comment	Full sun & blue skies.

AD-9, 2019-07-11

Created	2019-07-11 17:12:32 UTC by Randi Jackson
Updated	2019-08-05 16:30:12 UTC by Meg Stevenson
Location	44.7277565813, -67.9053673614
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-11
Survey Site	AD-9

Survey Overview

Survey Start Time	12:36
Survey End Time	14:38
Duration of survey (minutes)	122
Count of raptors observed	1

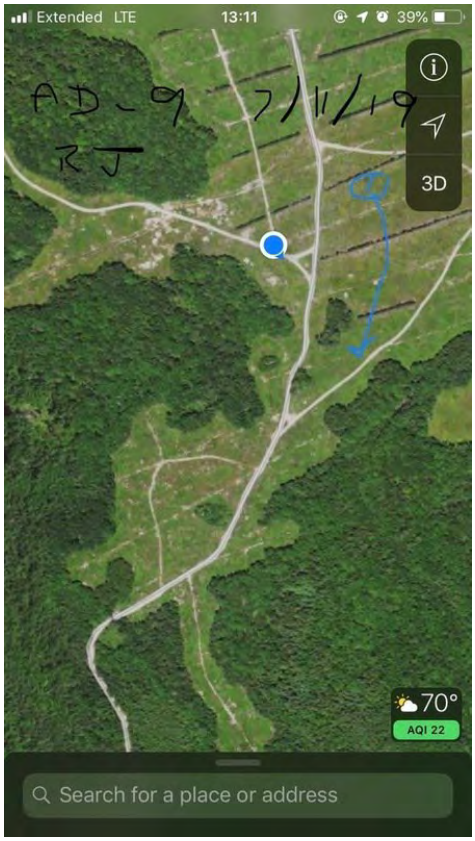
Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	S
Temperature (F)	66
Relative Humidity	70
Barametric Pressure (inches)	30.05
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

Northern Harrier, 1

Raptor Site	AD-9
Raptor Date	7/11/19
Species	Northern Harrier
Raptor observation number	1
Count of individuals in group	1
Time first observed	13:11
Time last observed	13:12
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Male
Behavior	Flapping, Gliding
General Flight Direction	S
Flight Height	1 - below rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Spotted gliding in from the north low over the blueberry fields. Glided low over the fields heading south.

Map of Flight Path



AD-9, 2019-08-14

Created	2019-08-14 13:25:36 UTC by Meg Stevenson
Updated	2019-08-14 16:46:13 UTC by Meg Stevenson
Location	44.7277280409306, -67.9049996473528
Lead Observer	Meg Dood
Survey Interval	August
Date	2019-08-14
Survey Site	AD-9

Survey Overview

Survey Start Time	09:05
Survey End Time	11:05
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	E
Temperature (F)	71
Relative Humidity	65
Barametric Pressure (inches)	29.88
Cloud Cover (percent)	10
Visibility	10km
Precipitation	0 - none

09:35

Time of observation	09:35
Describe observation	AMCR BCCH

AD-9, 2019-09-06

Created	2019-09-06 18:03:24 UTC by Randi Jackson
Updated	2019-12-17 17:58:58 UTC by Meg Stevenson
Location	44.7277999158, -67.9055103567
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-06
Survey Site	AD-9

Survey Overview

Survey Start Time	14:02
Survey End Time	16:03
Duration of survey (minutes)	121

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	71
Relative Humidity	49
Barametric Pressure (inches)	30.08
Cloud Cover (percent)	50
Visibility	Unlimited
Precipitation	0 - none

15:18

Time of weather observation	15:18
Wind Speed	3 - Gentle breeze
Wind Direction	S
Temperature (F)	66
Relative Humidity	48
Barametric Pressure (inches)	30.07
Cloud Cover (percent)	80
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Clouds rolling in, wind speed increasing, and temperature dropping.

AD-9, 2019-10-25

Created	2019-10-25 16:59:09 UTC by Randi Jackson
Updated	2019-12-17 17:51:39 UTC by Meg Stevenson
Location	44.7278611667, -67.90550155
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-10-25
Survey Site	AD-9

Survey Overview

Survey Start Time	12:57
Survey End Time	14:57
Duration of survey (minutes)	120

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	W
Temperature (F)	54
Relative Humidity	53
Barametric Pressure (inches)	30.27
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

13:29

Time of observation	13:29
Describe observation	Other Birds: BLJA CORA

AD-9, 2019-11-14

Created	2019-11-14 20:32:37 UTC by Randi Jackson
Updated	2019-12-17 17:49:45 UTC by Meg Stevenson
Location	44.7277963667, -67.9054591833
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-14
Survey Site	AD-9

Survey Overview

Survey Start Time	13:34
Survey End Time	15:34
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	NE
Temperature (F)	28
Relative Humidity	74
Barametric Pressure (inches)	30.54
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

15:33

Time of observation	15:33
Describe observation	Other Birds: CORA

AD-9, 2019-12-13

Created	2019-12-13 12:44:03 UTC by Meg Stevenson
Updated	2019-12-13 14:02:32 UTC by Meg Stevenson
Location	44.7275697067796, -67.9051361047364
Lead Observer	Meg Stevenson
Survey Interval	December
Date	2019-12-13
Survey Site	AD-9

Survey Overview

Survey Start Time	07:03
Survey End Time	09:03
Duration of survey (minutes)	120

Weather Summary

Wind Speed	0 - Calm
Temperature (F)	22
Relative Humidity	81
Barametric Pressure (inches)	30.57
Cloud Cover (percent)	100
Visibility	10km
Precipitation	0 - none

08:57

Time of weather observation	08:57
Wind Speed	0 - Calm
Temperature (F)	26
Relative Humidity	92
Barametric Pressure (inches)	30.56
Cloud Cover (percent)	80
Visibility	10km
Precipitation	0 - none

AD-9, 2020-01-10

Created	2020-01-10 17:23:57 UTC by Randi Jackson
Updated	2020-01-10 17:26:52 UTC by Randi Jackson
Location	44.7279165080234, -67.905489318136
Lead Observer	Randi Jackson
Survey Interval	July
Date	2020-01-10
Survey Site	AD-9

Survey Overview

Survey Start Time	10:25
Survey End Time	12:25
Duration of survey (minutes)	120

Weather Summary

Wind Speed	6 - Strong breeze
Wind Direction	S
Temperature (F)	38
Relative Humidity	69
Barametric Pressure (inches)	30.35
Cloud Cover (percent)	100
Visibility	20km
Precipitation	3 - Rain

AD-9, 2020-02-03

Created	2020-02-03 17:29:12 UTC by Randi Jackson
Updated	2020-02-03 17:30:38 UTC by Randi Jackson
Location	44.7278144583523, -67.9054534435905
Lead Observer	Randi Jackson
Survey Interval	July
Date	2020-02-03
Survey Site	AD-9

Survey Overview

Survey Start Time	10:24
Survey End Time	12:24
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	W
Temperature (F)	39
Relative Humidity	46
Barametric Pressure (inches)	29.62
Cloud Cover (percent)	10
Visibility	Unlimited
Precipitation	0 - none

AD-10, 2019-03-28

Created	2019-03-28 14:03:16 UTC by Joe Roy
Updated	2019-03-28 14:05:06 UTC by Joe Roy
Location	44.672789, -67.878203
Lead Observer	Joe Roy
Survey Interval	March
Date	2019-03-28
Survey Site	AD-10

Survey Overview

Survey Start Time	08:00
Survey End Time	10:00
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	SW
Temperature (F)	30
Cloud Cover (percent)	15
Visibility	10
Weather Comment	Windy and partially cloudy. Unlimited visibility

AD-10, 2019-04-24

Created	2019-04-24 17:33:55 UTC by Randi Jackson
Updated	2019-04-24 19:25:16 UTC by Randi Jackson
Location	44.6729364619075, -67.8780964203811
Lead Observer	Randi Jackson
Survey Interval	April
Date	2019-04-24
Survey Site	AD-10

Survey Overview

Survey Start Time	13:20
Survey End Time	15:25
Duration of survey (minutes)	125
Count of raptors observed	1

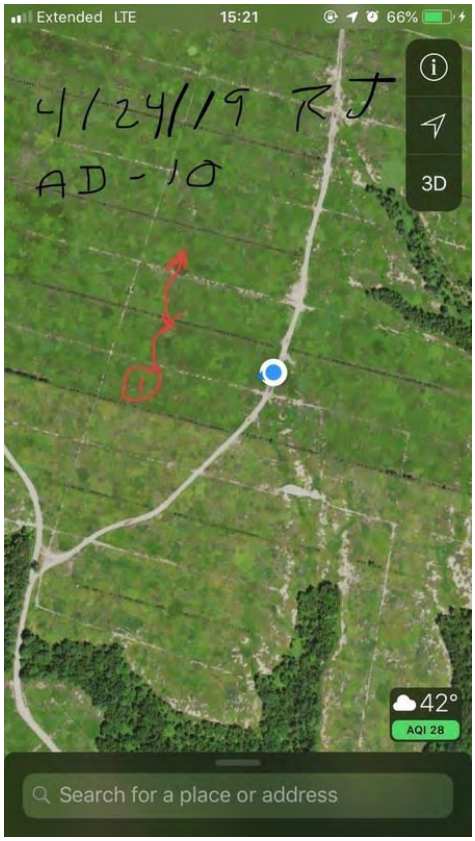
Weather Summary

Wind Speed	1 - Light air
Wind Direction	W
Temperature (F)	38
Relative Humidity	99
Barametric Pressure (inches)	29.97
Cloud Cover (percent)	100
Visibility	5km
Precipitation	2 - Drizzle

Kestrel, 1

Raptor Site	AD-10
Raptor Date	4/24/19
Species	Kestrel
Raptor observation number	1
Count of individuals in group	1
Time first observed	15:17
Time last observed	15:21
Duration of observation (minutes)	4
Age	Adult
Sex	Female
Behavior	Flapping, Gliding, Perching, Kiting
General Flight Direction	N
Flight Height	1 - below rotor swept area
Horizontal Position Code	Flight path over field
Notes	First spotted flying low over the blueberry barrens coming in from the south. Landed and perched for a few minutes one of the trees in the tree line break. Perched for a few minutes then popped up and began kiting. Kited for about 30sec then took off low over the barrens in the north where I lost site.

Map of Flight Path



14:34

Time of weather observation	14:34
Wind Speed	1 - Light air
Wind Direction	W
Temperature (F)	38
Relative Humidity	99
Barametric Pressure (inches)	29.97
Cloud Cover (percent)	100
Visibility	5km
Precipitation	3 - Rain

15:12

Time of weather observation	15:12
Wind Speed	1 - Light air
Wind Direction	W
Temperature (F)	39
Relative Humidity	97
Barametric Pressure (inches)	29.97
Cloud Cover (percent)	100
Visibility	5km
Precipitation	1 - Haze or Fog

AD-10, 2019-05-15

Created	2019-05-15 11:45:08 UTC by Karla Fortier
Updated	2019-05-15 13:59:34 UTC by Karla Fortier
Location	44.6728615, -67.87816
Lead Observer	Karla Fortier
Survey Interval	May
Date	2019-05-15
Survey Site	AD-10

Survey Overview

Survey Start Time	07:40
Survey End Time	09:40
Duration of survey (minutes)	120
Survey Summary Comments	No Eagles or other raptors observed. Precipitation most of survey period until end. No obstructions to visibility.

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	N
Temperature (F)	36
Relative Humidity	91
Barametric Pressure (inches)	29.68
Cloud Cover (percent)	100
Visibility	8
Precipitation	2 - Drizzle
Weather Comment	On drive in, some flurries, but upon arrival light drizzle. No hindrance to visibility. Gusts of 4.

08:05

Time of weather observation	08:05
Wind Speed	3 - Gentle breeze
Wind Direction	N
Temperature (F)	36
Cloud Cover (percent)	100
Visibility	8
Precipitation	Snow flurries, rainy mix
Weather Comment	Mixed precipitation, heavier than a drizzle and constant. Immediate visibility not hindered.

08:35

Time of weather observation	08:35
Precipitation	2 - Drizzle
Weather Comment	Update to note heavier rain turns back to light drizzle. Skies start to ckear, becomes brighter.

08:50

Time of weather observation	08:50

Precipitation	0 - none
Weather Comment	Update to note that drizzle stops.

08:55

Time of observation	08:55
Describe observation	One Raven flies fields east of survey location headed north.

09:20

Time of observation	09:20
Describe observation	Wind project far west becomes visibile.

AD-10, 2019-06-05

Created	2019-06-05 15:16:40 UTC by Karla Fortier
Updated	2019-08-05 16:20:11 UTC by Meg Stevenson
Location	44.6727907, -67.8781541
Lead Observer	Karla Fortier
Survey Interval	June
Date	2019-06-05
Survey Site	AD-10

Survey Overview

Survey Start Time	11:14
Survey End Time	13:14
Duration of survey (minutes)	120
Survey Summary Comments	No eagles or other raptors observed. Ravens and Robin's around in surrounding fields.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SW
Temperature (F)	64
Relative Humidity	58
Barametric Pressure (inches)	29.82
Cloud Cover (percent)	70
Visibility	16
Precipitation	0 - none
Weather Comment	Some sun and blue skies opened up around 11am.

AD-10, 2019-07-03

Created	2019-07-03 16:15:04 UTC by Randi Jackson
Updated	2020-01-02 15:54:21 UTC by Randi Jackson
Location	44.6727921674, -67.8781856876
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-03
Survey Site	AD-10

Survey Overview

Survey Start Time	11:08
Survey End Time	13:09
Duration of survey (minutes)	121
Count of eagles observed	1
Count of raptors observed	1

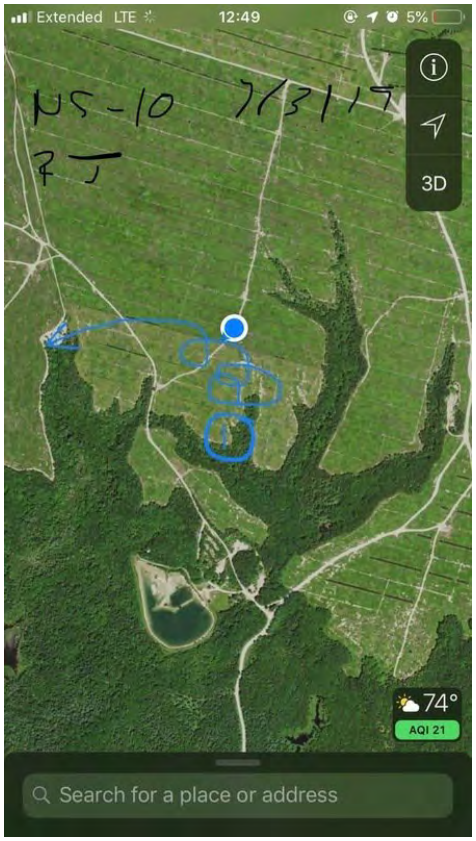
Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	E
Temperature (F)	75
Relative Humidity	76
Barametric Pressure (inches)	29.85
Cloud Cover (percent)	50
Visibility	Unlimited
Precipitation	0 - none

Bald Eagle, 1

Raptor Site	AD-10
Raptor Date	7/3/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	12:46
Time last observed	12:49
Duration of observation (minutes)	3
Duration within survey boundary	3
Age	Juvenile
Sex	Unknown
Behavior	Circling, Gliding
General Flight Direction	W
Flight Height	2 - within rotor swept area, 3 - above rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	Spotted initially circling in the south. Circled for a few minutes then took off gliding west. Looked to be a second year juvenile.

Map of Flight Path



AD-10, 2019-08-30

Created	2019-08-30 14:40:15 UTC by Meg Stevenson
Updated	2019-12-19 19:34:39 UTC by Meg Stevenson
Location	44.6730108513, -67.8782098275
Lead Observer	Meg Dood
Survey Interval	August
Date	2019-08-30
Survey Site	AD-10

Survey Overview

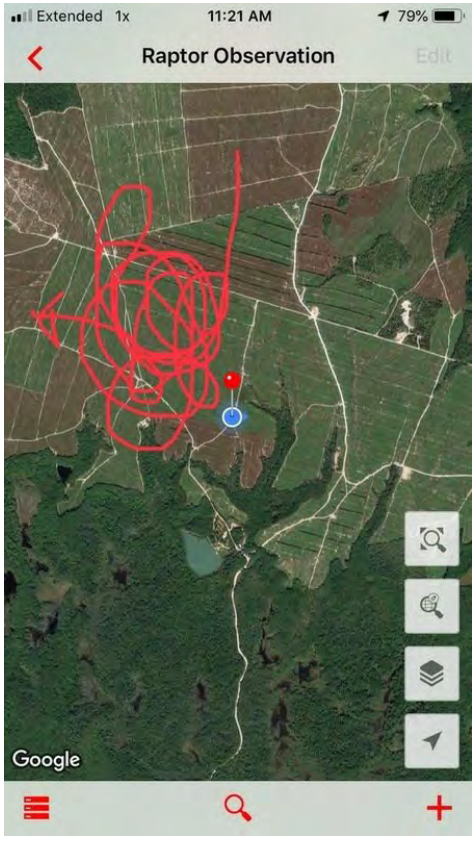
Survey Start Time	09:29
Survey End Time	11:37
Duration of survey (minutes)	128
Count of eagles observed	1
Count of raptors observed	1

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SW
Temperature (F)	74
Relative Humidity	80
Barametric Pressure (inches)	29.94
Cloud Cover (percent)	50
Visibility	10km
Precipitation	0 - none

Bald Eagle, 1

Raptor Site	AD-10
Raptor Date	8/30/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	10:52
Time last observed	11:37
Duration of observation (minutes)	45
Duration within survey boundary	14
Age	Juvenile
Sex	Unknown
Behavior	Flapping, Gliding, Circling
General Flight Direction	W
Flight Height	1 - below rotor swept area, 2 - within rotor swept area, 3 - above rotor swept area
Horizontal Position Code	Over barren

Notes	One Juvenile BAEA flys in from north, low, about 30 ft from ground, begins to circle up on thermal reaching max 800-1000 ft. Circles near survey site before eventually gliding west, out of site. Individual has light brown feathers on back, with a white band on the underside of the tail. Minimal white flecks on underside where wing joins body.
Map of Flight Path	

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	SE
Temperature (F)	74
Relative Humidity	80
Barametric Pressure (inches)	29.94
Cloud Cover (percent)	30
Visibility	10km
Precipitation	0 - none

10:41

Time of observation	10:41
Describe observation	CORA HAWO WOPE

AD-10, 2019-09-26

Created	2019-09-26 17:45:55 UTC by Randi Jackson
Updated	2020-01-02 15:31:44 UTC by Randi Jackson
Location	44.673013324, -67.8781286907
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-26
Survey Site	AD-10

Survey Overview

Survey Start Time	13:32
Survey End Time	15:32
Duration of survey (minutes)	120
Count of eagles observed	1
Count of raptors observed	3

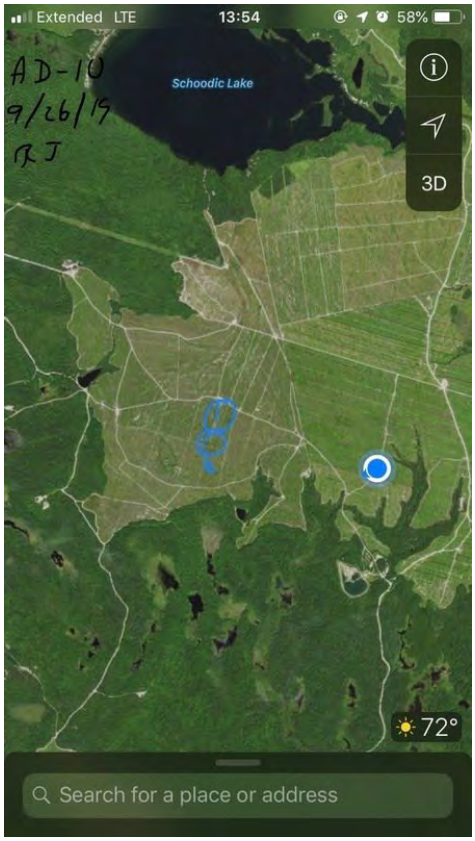
Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	SW
Temperature (F)	70
Relative Humidity	75
Barametric Pressure (inches)	29.76
Cloud Cover (percent)	25
Visibility	Unlimited
Precipitation	0 - none

Turkey Vulture, 1

Raptor Site	AD-10
Raptor Date	9/26/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	1
Time first observed	13:49
Time last observed	13:50
Duration of observation (minutes)	1
Age	Unknown
Sex	Unknown
Behavior	Circling
General Flight Direction	S
Flight Height	2 - within rotor swept area
Notes	Brief observation of a TUVU circling in the distance. Briefly observed circling making its way south where I lost site of it behind the trees.

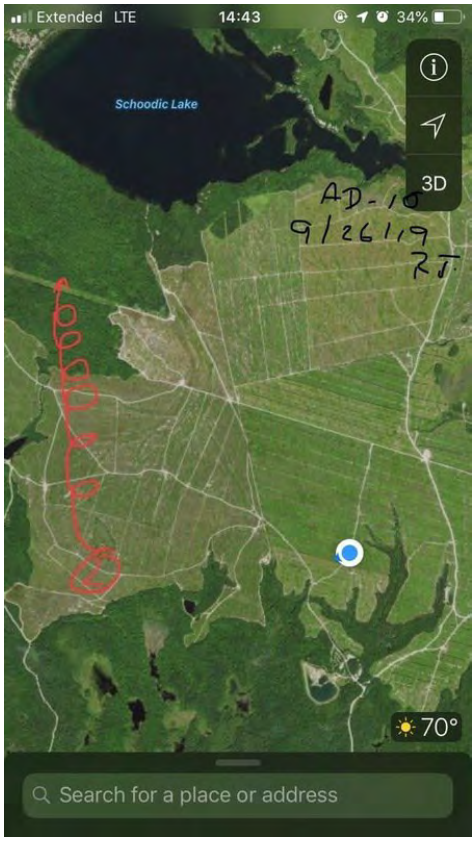
Map of Flight Path



Bald Eagle, 2

Raptor Site	AD-10
Raptor Date	9/26/19
Species	Bald Eagle
Raptor observation number	2
Count of individuals in group	1
number of eagles observed	1
Time first observed	14:31
Time last observed	14:42
Duration of observation (minutes)	11
Duration within survey boundary	0
Age	Adult
Sex	Unknown
Behavior	Circling, Flapping
General Flight Direction	N
Flight Height	2 - within rotor swept area, 3 - above rotor swept area, 4 - No predominant height
Notes	Initially observed circling in the south low over the barren. Continued circling making its way north while ascending. Lost site of the individual high up in the north while circling.

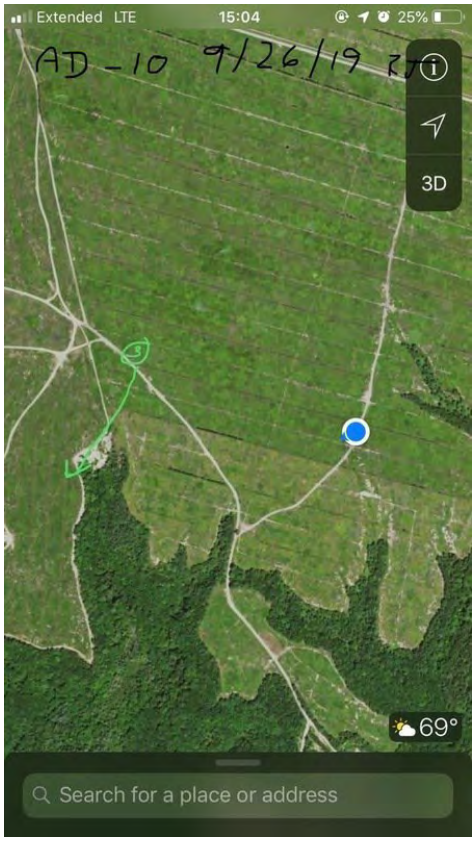
Map of Flight Path



Turkey Vulture, 3

Raptor Site	AD-10
Raptor Date	9/26/19
Species	Turkey Vulture
Raptor observation number	3
Count of individuals in group	1
Time first observed	15:01
Time last observed	15:03
Duration of observation (minutes)	2
Age	Unknown
Sex	Unknown
Behavior	Flapping, Gliding
General Flight Direction	SW
Flight Height	1 - below rotor swept area
Notes	Spotted flying low over the barrens from behind a tree break in the north. Continued to fly very low (~20ft) over the barrens heading south west out of sight.

Map of Flight Path



15:00

Time of weather observation	15:00
Wind Speed	5 - Fresh breeze
Wind Direction	SW
Temperature (F)	67
Relative Humidity	81
Barametric Pressure (inches)	29.73
Cloud Cover (percent)	50
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Increasing cloud cover.

15:23

Time of weather observation	15:23
Wind Speed	6 - Strong breeze
Wind Direction	S
Temperature (F)	67
Relative Humidity	83
Barametric Pressure (inches)	29.73
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

Weather Comment	Air temperature feels cooler. Wind seems to picking up. Clouds rolling in very quickly. A storm is expected for tonight.

13:47

Time of observation	13:47
Describe observation	Other Birds: AMCR

AD-10, 2019-10-29

Created	2019-10-29 19:09:12 UTC by Randi Jackson
Updated	2019-12-17 17:51:05 UTC by Meg Stevenson
Location	44.6722511994, -67.878851546
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-10-29
Survey Site	AD-10

Survey Overview

Survey Start Time	13:34
Survey End Time	15:34
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	S
Temperature (F)	51
Relative Humidity	78
Barametric Pressure (inches)	30.36
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

AD-10, 2019-11-22

Created	2019-11-22 19:13:23 UTC by Randi Jackson
Updated	2019-12-17 17:48:54 UTC by Meg Stevenson
Location	44.6727758167, -67.8780813333
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-22
Survey Site	AD-10

Survey Overview

Survey Start Time	12:13
Survey End Time	14:13
Duration of survey (minutes)	120

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	S
Temperature (F)	46
Relative Humidity	97
Barametric Pressure (inches)	29.48
Cloud Cover (percent)	100
Visibility	6mi
Precipitation	2 - Drizzle

AD-10, 2019-12-13

Created	2019-12-13 14:34:09 UTC by Randi Jackson
Updated	2019-12-17 17:46:07 UTC by Meg Stevenson
Location	44.6737180325, -67.8778231703
Lead Observer	Randi Jackson
Survey Interval	December
Date	2019-12-13
Survey Site	AD-10

Survey Overview

Survey Start Time	07:34
Survey End Time	09:34
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	S
Temperature (F)	30
Relative Humidity	78
Barametric Pressure (inches)	30.55
Cloud Cover (percent)	50
Visibility	Unlimited
Precipitation	0 - none

09:34

Time of observation	09:34
Describe observation	Other Birds: CORA

AD-10, 2020-01-07

Created	2020-01-07 16:33:10 UTC by Randi Jackson
Updated	2020-01-07 16:36:33 UTC by Randi Jackson
Location	44.6733732009723, -67.8779186402148
Lead Observer	Randi Jackson
Survey Interval	July
Date	2020-01-07
Survey Site	AD-10

Survey Overview

Survey Start Time	09:34
Survey End Time	11:34
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	W
Temperature (F)	30
Relative Humidity	65
Barametric Pressure (inches)	29.96
Cloud Cover (percent)	10
Visibility	20km
Precipitation	0 - none
Weather Comment	Bluebird day with a wind chill of 23f

AD-10, 2020-02-04

Created	2020-02-04 19:37:22 UTC by Randi Jackson
Updated	2020-02-04 19:38:36 UTC by Randi Jackson
Location	44.6727965679436, -67.8781310376412
Lead Observer	Randi Jackson
Survey Interval	July
Date	2020-02-04
Survey Site	AD-10

Survey Overview

Survey Start Time	12:38
Survey End Time	14:38
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	35
Relative Humidity	58
Barametric Pressure (inches)	29.77
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	Light icing

AD-11, 2019-03-28

Created	2019-03-28 11:52:33 UTC by Meg Stevenson
Updated	2019-03-28 13:41:26 UTC by Meg Stevenson
Location	44.6802168153642, -67.8486070410049
Lead Observer	Meg Dood
Survey Interval	March
Date	2019-03-28
Survey Site	AD-11

Survey Overview

Survey Start Time	07:45
Survey End Time	09:45
Duration of survey (minutes)	120

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	S
Temperature (F)	36
Relative Humidity	93
Barametric Pressure (inches)	30.47
Cloud Cover (percent)	0
Visibility	10km
Precipitation	0 - none

09:33

Time of weather observation	09:33
Wind Speed	5 - Fresh breeze
Wind Direction	S
Temperature (F)	39
Relative Humidity	73
Barametric Pressure (inches)	30.45
Cloud Cover (percent)	40
Visibility	10km
Precipitation	0 - none

AD-11, 2019-04-11

Created	2019-04-12 13:03:43 UTC by Joe Roy
Updated	2019-05-07 13:16:30 UTC by Joe Roy
Location	44.7813964, -67.872179
Lead Observer	Joe Roy
Survey Interval	April
Date	2019-04-11
Survey Site	AD-11

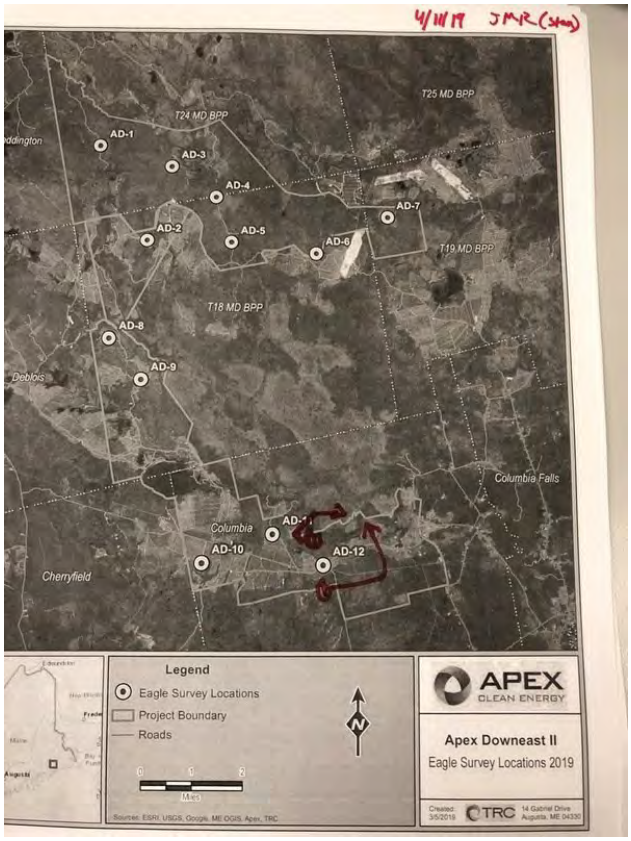
Survey Overview

Survey Start Time	15:20
Survey End Time	17:20
Duration of survey (minutes)	120
Count of raptors observed	5

Turkey Vulture, 1

Raptor Site	AD-11
Raptor Date	4/11/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	2
Time first observed	03:40
Time last observed	03:46
Duration of observation (minutes)	6
Age	Adult
Sex	Unknown
Behavior	Circling, Flapping, Soaring
General Flight Direction	N, E
Flight Height	2 - within rotor swept area, 3 - above rotor swept area
Horizontal Position Code	over field
Notes	Flying from South to the north and then east

Map of Flight Path

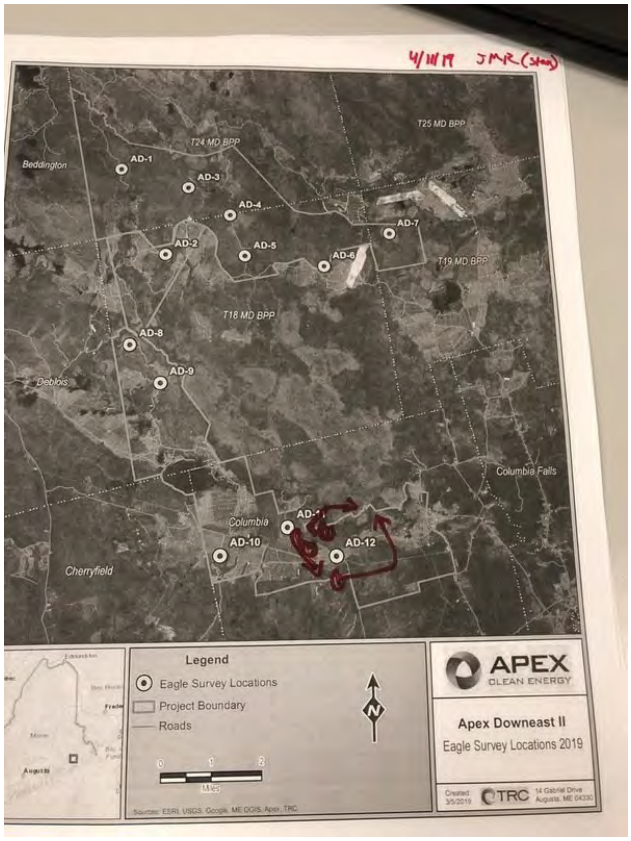


Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	N
Temperature (F)	39
Barametric Pressure (inches)	1014
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none

Turkey Vulture, 2

Raptor Site	AD-11
Raptor Date	4/11/19
Species	Turkey Vulture
Raptor observation number	2
Count of individuals in group	3
Time first observed	16:56
Time last observed	17:01
Duration of observation (minutes)	5
Age	Adult
Sex	Unknown
Behavior	Circling, Flapping, Soaring
General Flight Direction	N, S
Flight Height	2 - within rotor swept area, 3 - above rotor swept area

Horizontal Position Code	over field
Notes	Flew from the south to north and then returned south
Map of Flight Path	

Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	N
Temperature (F)	39
Barametric Pressure (inches)	1015
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none

AD-11, 2019-05-10

Created	2019-05-10 13:36:12 UTC by Karla Fortier
Updated	2019-05-10 15:53:51 UTC by Karla Fortier
Location	44.6803411, -67.8487191
Lead Observer	Karla Fortier
Survey Interval	May
Date	2019-05-10
Survey Site	AD-11

Survey Overview

Survey Start Time	09:36
Survey End Time	11:36
Duration of survey (minutes)	120
Survey Summary Comments	No Eagles or other raptors observed. Steady rain entire survey period but did not hinder visibility requirements.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SSE
Temperature (F)	44
Relative Humidity	99
Barametric Pressure (inches)	30.25
Cloud Cover (percent)	100
Visibility	6.4
Precipitation	3 - Rain
Weather Comment	Steady rain but no hinerance to visibility requirements.

09:40

Time of observation	09:40
Describe observation	One Raven walks fields immediately west of survey location, near bee hives along treeline.

AD-11, 2019-06-05

Created	2019-06-05 13:06:41 UTC by Karla Fortier
Updated	2019-08-05 16:19:53 UTC by Meg Stevenson
Location	44.6802447, -67.848468
Lead Observer	Karla Fortier
Survey Interval	June
Date	2019-06-05
Survey Site	AD-11

Survey Overview

Survey Start Time	09:06
Survey End Time	11:06
Duration of survey (minutes)	120
Survey Summary Comments	No eagles or other raptors observed.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SW
Temperature (F)	54
Relative Humidity	78
Barametric Pressure (inches)	29.85
Cloud Cover (percent)	95
Visibility	16
Precipitation	0 - none
Weather Comment	Skies more clear to north. Otherwise no obstructions to visibility.

AD-11, 2019-07-02

Created	2019-07-02 20:12:57 UTC by Randi Jackson
Updated	2019-08-05 16:28:49 UTC by Meg Stevenson
Location	44.6804165142, -67.8487835639
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-02
Survey Site	AD-11

Survey Overview

Survey Start Time	14:13
Survey End Time	16:16
Duration of survey (minutes)	123

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	S
Temperature (F)	65
Relative Humidity	94
Barametric Pressure (inches)	29.84
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	4 - Thunderstorn
Weather Comment	Brief period of thunderstorms. Lasted about 10 minutes.

AD-11, 2019-08-13

Created	2019-08-13 14:54:41 UTC by Meg Stevenson
Updated	2019-08-13 16:42:18 UTC by Meg Stevenson
Location	44.6802433167005, -67.8484359911212
Lead Observer	Meg Dood
Survey Interval	August
Date	2019-08-13
Survey Site	AD-11

Survey Overview

Survey Start Time	10:43
Survey End Time	12:43
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	82
Relative Humidity	48
Barametric Pressure (inches)	29.77
Cloud Cover (percent)	100
Visibility	10km
Precipitation	0 - none

AD-11, 2019-09-26

Created	2019-09-26 14:07:55 UTC by Randi Jackson
Updated	2019-12-17 17:55:46 UTC by Meg Stevenson
Location	44.6802581381, -67.8483665642
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-26
Survey Site	AD-11

Survey Overview

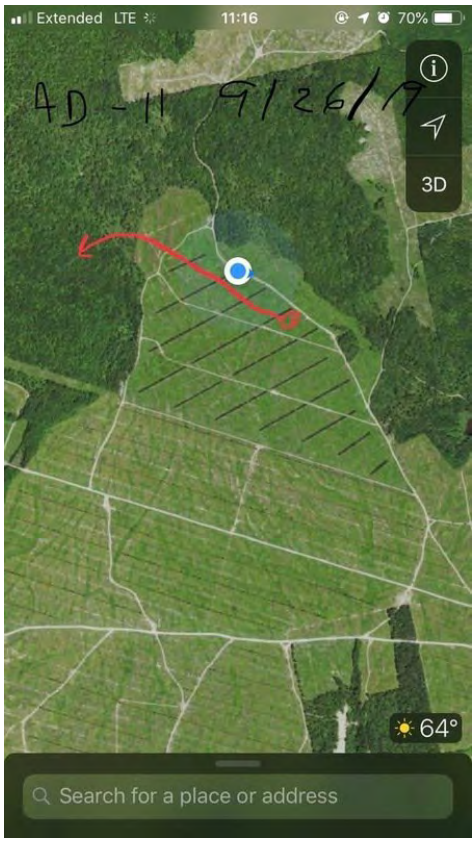
Survey Start Time	09:20
Survey End Time	11:20
Duration of survey (minutes)	120
Count of eagles observed	1
Count of raptors observed	1

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	SW
Temperature (F)	55
Relative Humidity	97
Barametric Pressure (inches)	29.81
Cloud Cover (percent)	100
Visibility	300m
Precipitation	1 - Haze or Fog
Weather Comment	Very foggy morning. At survey prior to 8 am. Waited on fog to clear. Very heavy and wet fog this AM. Minimal visibility to conduct surveys.

Bald Eagle, 1

Raptor Site	AD-11
Raptor Date	9/26/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	11:15
Time last observed	11:16
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown
Behavior	Flapping
General Flight Direction	W
Flight Height	1 - below rotor swept area
Horizontal Position Code	Over blueberry barrens

Notes	Initially spotted in the south behind a few tree break lines in the blueberry barrens. Observed flying low over the barrens (~30 feet) just cresting over the tops of the spruce breaks as it flew over. Observed flapping for the entire duration heading west.
Map of Flight Path	

11:02

Time of weather observation	11:02
Wind Speed	5 - Fresh breeze
Wind Direction	SW
Temperature (F)	58
Relative Humidity	88
Barametric Pressure (inches)	29.8
Cloud Cover (percent)	25
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Fog has rapidly cleared out. Minimal clouds on the sky. Strong breeze with mostly blue skies

10:43

Time of observation	10:43
Describe observation	Other Birds: BLJA CORA

AD-11, 2019-10-29

Created	2019-10-29 15:26:42 UTC by Randi Jackson
Updated	2019-12-17 17:51:26 UTC by Meg Stevenson
Location	44.680220528, -67.848341106
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-10-29
Survey Site	AD-11

Survey Overview

Survey Start Time	11:24
Survey End Time	13:24
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	W
Temperature (F)	51
Relative Humidity	80
Barametric Pressure (inches)	30.41
Cloud Cover (percent)	95
Visibility	Unlimited
Precipitation	0 - none

11:46

Time of observation	11:46
Describe observation	Other Birds: BLJA

AD-11, 2019-11-22

Created	2019-11-22 19:10:08 UTC by Randi Jackson
Updated	2019-12-17 17:49:08 UTC by Meg Stevenson
Location	44.679995692, -67.8477081656
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-22
Survey Site	AD-11

Survey Overview

Survey Start Time	10:01
Survey End Time	12:01
Duration of survey (minutes)	120

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	S
Temperature (F)	46
Relative Humidity	97
Barametric Pressure (inches)	29.48
Cloud Cover (percent)	100
Visibility	8 mi
Precipitation	2 - Drizzle

AD-11, 2019-12-13

Created	2019-12-13 18:52:32 UTC by Randi Jackson
Updated	2019-12-17 17:45:42 UTC by Meg Stevenson
Location	44.6795470282, -67.8467264771
Lead Observer	Randi Jackson
Survey Interval	December
Date	2019-12-13
Survey Site	AD-11

Survey Overview

Survey Start Time	11:47
Survey End Time	13:47
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	S
Temperature (F)	39
Relative Humidity	64
Barametric Pressure (inches)	30.7
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

13:47

Time of observation	13:47
Describe observation	Other Birds: CORA

AD-11, 2020-01-07

Created	2020-01-07 18:42:40 UTC by Randi Jackson
Updated	2020-01-07 18:44:53 UTC by Randi Jackson
Location	44.6801942680447, -67.8481877782083
Lead Observer	Randi Jackson
Survey Interval	July
Date	2020-01-07
Survey Site	AD-11

Survey Overview

Survey Start Time	11:42
Survey End Time	13:42
Duration of survey (minutes)	120

Weather Summary

Wind Speed	4 - Moderate breeze
Wind Direction	W
Temperature (F)	30
Relative Humidity	55
Barametric Pressure (inches)	29.98
Cloud Cover (percent)	50
Visibility	20km
Precipitation	0 - none
Weather Comment	Clouds rolling in. Snow squall storm moving in tonight.

11:42

Time of observation	11:42
Describe observation	Other Birds: CORA

AD-11, 2020-02-04

Created	2020-02-04 17:25:35 UTC by Randi Jackson
Updated	2020-02-04 17:26:39 UTC by Randi Jackson
Location	44.6801650990217, -67.8483476211017
Lead Observer	Randi Jackson
Survey Interval	July
Date	2020-02-04
Survey Site	AD-11

Survey Overview

Survey Start Time	10:26
Survey End Time	12:26
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	39
Relative Humidity	48
Barametric Pressure (inches)	29.81
Cloud Cover (percent)	100
Visibility	Unlimited
Precipitation	0 - none

AD-12, 2019-03-28

Created	2019-03-28 14:16:58 UTC by Meg Stevenson
Updated	2019-03-29 16:02:51 UTC by Meg Stevenson
Location	44.6692053415297, -67.8323386889583
Lead Observer	Meg Dood
Survey Interval	March
Date	2019-03-28
Survey Site	AD-12

Survey Overview

Survey Start Time	10:10
Survey End Time	12:10
Duration of survey (minutes)	120
Count of raptors observed	3

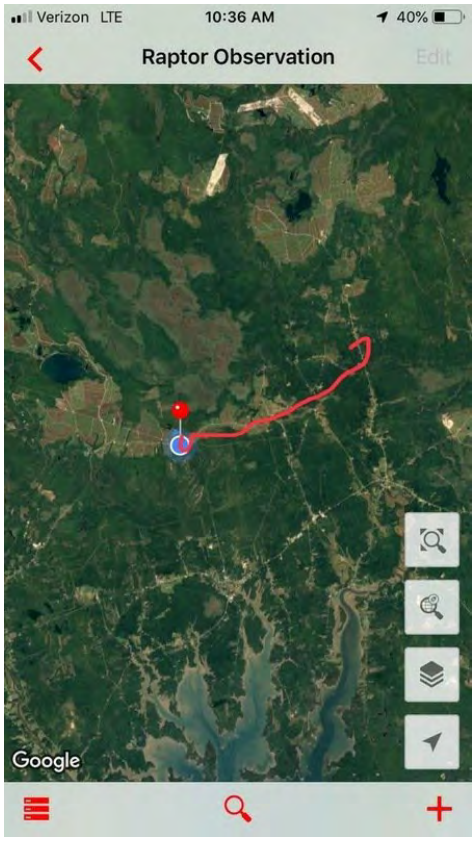
Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	S
Temperature (F)	40
Relative Humidity	70
Barametric Pressure (inches)	30.49
Cloud Cover (percent)	40
Visibility	10km
Precipitation	0 - none

Turkey Vulture, 1

Raptor Site	AD-12
Raptor Date	3/28/19
Species	Turkey Vulture
Raptor observation number	1
Count of individuals in group	1
Time first observed	10:27
Time last observed	10:34
Duration of observation (minutes)	7
Age	Adult
Sex	Unknown
Behavior	Soaring, Circling
General Flight Direction	N
Flight Height	0 - outside of turbine array area, 3 - above rotor swept area, 2 - within rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	One TUVU glides over valley

Map of Flight Path

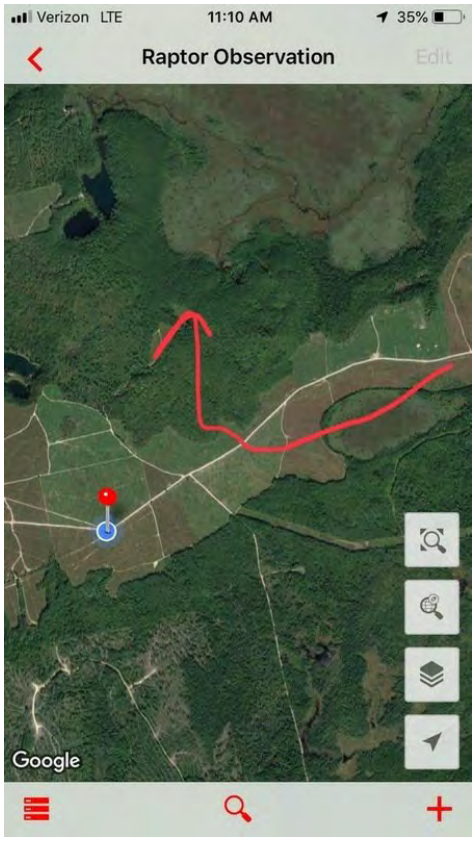


Weather during observation

Wind Speed	6 - Strong breeze
Wind Direction	S
Temperature (F)	40
Relative Humidity	70
Barametric Pressure (inches)	30.43
Cloud Cover (percent)	40
Visibility	10km
Precipitation	0 - none

Turkey Vulture, 2

Raptor Site	AD-12
Raptor Date	3/28/19
Species	Turkey Vulture
Raptor observation number	2
Count of individuals in group	2
Time first observed	11:05
Time last observed	11:06
Duration of observation (minutes)	1
Age	Unknown
Sex	Unknown
Behavior	Soaring, Circling
General Flight Direction	N

Flight Height	1 - below rotor swept area, 2 - within rotor swept area
Notes	Two TUVUS from east fly to north
Map of Flight Path	

Weather during observation

Wind Speed	5 - Fresh breeze
Wind Direction	S
Temperature (F)	40
Relative Humidity	70
Barametric Pressure (inches)	30.43
Cloud Cover (percent)	40
Visibility	10km
Precipitation	0 - none

AD-12, 2019-04-11

Created	2019-04-12 12:55:33 UTC by Joe Roy
Updated	2019-05-07 13:15:10 UTC by Joe Roy
Location	44.7814033, -67.8721876
Lead Observer	Joe Roy
Survey Interval	April
Date	2019-04-11
Survey Site	AD-12

Survey Overview

Survey Start Time	01:15
Survey End Time	03:15
Duration of survey (minutes)	120
Count of eagles observed	2
Count of raptors observed	2
Survey Summary Comments	2 eagles observed

Bald Eagle, 1

Raptor Site	AD-12
Raptor Date	4/11/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	2
number of eagles observed	2
Time first observed	13:57
Time last observed	14:05
Duration of observation (minutes)	8
Duration within survey boundary	8
Age	Adult
Sex	Unknown
Behavior	Flapping
General Flight Direction	N
Flight Height	1 - below rotor swept area, 2 - within rotor swept area, 3 - above rotor swept area
Horizontal Position Code	flight over field
Notes	2 eagles locked talons and tumbled directly south of site before flying North out of site

Map of Flight Path



Weather during observation

Wind Speed	3 - Gentle breeze
Wind Direction	NW
Temperature (F)	38
Cloud Cover (percent)	0
Visibility	10
Precipitation	0 - none

AD-12, 2019-05-10

Created	2019-05-10 11:55:38 UTC by Karla Fortier
Updated	2019-05-10 13:40:50 UTC by Karla Fortier
Location	44.6692403, -67.8323338
Lead Observer	Karla Fortier
Survey Interval	May
Date	2019-05-10
Survey Site	AD-12

Survey Overview

Survey Start Time	07:30
Survey End Time	09:30
Duration of survey (minutes)	120
Survey Summary Comments	No Eagles or other raptors observed. Steady rain but did not hinder visibility requirements.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SSE
Temperature (F)	42
Relative Humidity	95
Barametric Pressure (inches)	30.28
Cloud Cover (percent)	100
Visibility	6.4
Precipitation	3 - Rain
Weather Comment	Steady light rain entire survey period. Does not hinder visibility requirements.

AD-12, 2019-06-05

Created	2019-06-05 12:45:06 UTC by Karla Fortier
Updated	2019-08-05 16:19:41 UTC by Meg Stevenson
Location	44.6693496, -67.8326129
Lead Observer	Karla Fortier
Survey Interval	June
Date	2019-06-05
Survey Site	AD-12

Survey Overview

Survey Start Time	07:00
Survey End Time	09:00
Duration of survey (minutes)	120
Survey Summary Comments	No eagles or other raptors observed. Surveyed from across road to distance from bee boxes. Lots of road traffic by Cherryfield Food employees today.

Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	SW
Temperature (F)	54
Relative Humidity	78
Barametric Pressure (inches)	29.85
Cloud Cover (percent)	100
Visibility	16
Precipitation	0 - none
Weather Comment	Darkest clouds to south, wall front looks more clear to NNW. No obstructions to visibility requirements.

AD-12, 2019-07-02

Created	2019-07-02 16:57:44 UTC by Randi Jackson
Updated	2019-08-05 16:28:34 UTC by Meg Stevenson
Location	44.6716072178, -67.827639794
Lead Observer	Randi Jackson
Survey Interval	July
Date	2019-07-02
Survey Site	AD-12

Survey Overview

Survey Start Time	12:08
Survey End Time	14:08
Duration of survey (minutes)	120
Count of raptors observed	2

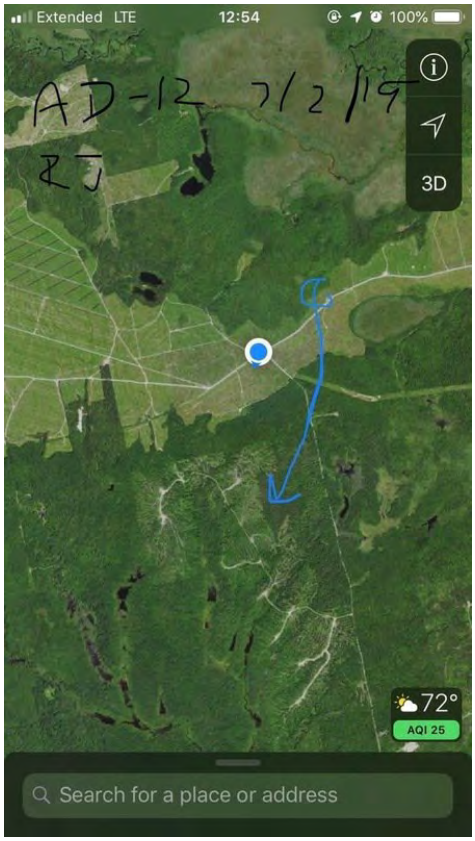
Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	S
Temperature (F)	72
Relative Humidity	69
Barametric Pressure (inches)	29.81
Cloud Cover (percent)	50
Visibility	Unlimited
Precipitation	0 - none
Weather Comment	Thunderstorms rolling in in the evening.

Northern Harrier, 1

Raptor Site	AD-5
Raptor Date	7/2/19
Species	Northern Harrier
Raptor observation number	1
Count of individuals in group	1
Time first observed	12:52
Time last observed	12:54
Duration of observation (minutes)	2
Duration within survey boundary	2
Age	Adult
Sex	Male
Behavior	Flapping, Gliding
General Flight Direction	SW
Flight Height	1 - below rotor swept area
Horizontal Position Code	A2 - Over ridge, perpendicular
Notes	Spotted gliding in from the northern tree line heading south west over the tree line. Lost sight of the individual in the trees.

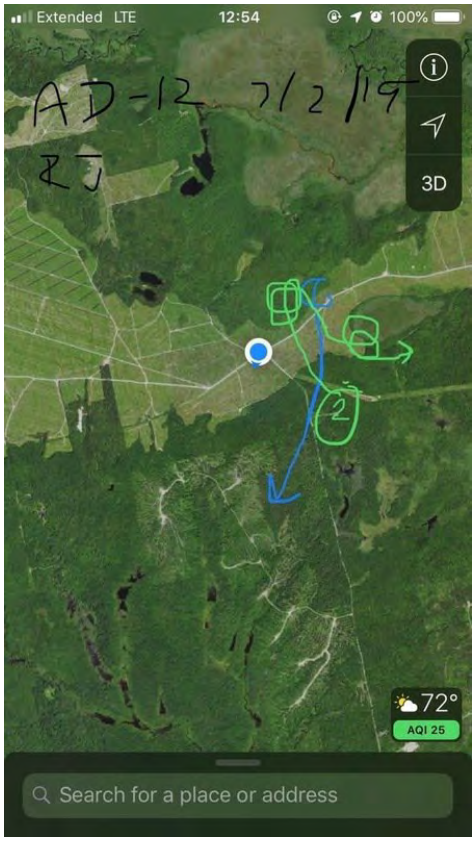
Map of Flight Path



Turkey Vulture, 2

Raptor Site	AD-5
Raptor Date	7/2/19
Species	Turkey Vulture
Raptor observation number	2
Count of individuals in group	1
Time first observed	13:55
Time last observed	13:58
Duration of observation (minutes)	3
Duration within survey boundary	3
Age	Adult
Sex	Unknown
Behavior	Gliding, Circling
General Flight Direction	E
Flight Height	2 - within rotor swept area
Horizontal Position Code	A2 - Over ridge, perpendicular
Notes	Spotted gliding from the south heading north. Circled over the northern tree line for a minute then began gliding south. Circled over the southern tree line for a minute then took off gliding east out of site.

Map of Flight Path



AD-12, 2019-08-23

Created	2019-08-23 18:05:54 UTC by Randi Jackson
Updated	2019-08-27 13:39:07 UTC by Meg Stevenson
Location	44.6692075, -67.8322654
Lead Observer	Randi Jackson
Survey Interval	August
Date	2019-08-23
Survey Site	AD-12

Survey Overview

Survey Start Time	12:08
Survey End Time	14:08
Duration of survey (minutes)	120

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	N
Temperature (F)	78
Relative Humidity	49
Barametric Pressure (inches)	29.88
Cloud Cover (percent)	25
Visibility	Unlimited
Precipitation	0 - none

AD-12, 2019-09-26

Created	2019-09-26 15:32:26 UTC by Randi Jackson
Updated	2020-01-02 15:33:44 UTC by Randi Jackson
Location	44.6692083333, -67.832353
Lead Observer	Randi Jackson
Survey Interval	September
Date	2019-09-26
Survey Site	AD-12

Survey Overview

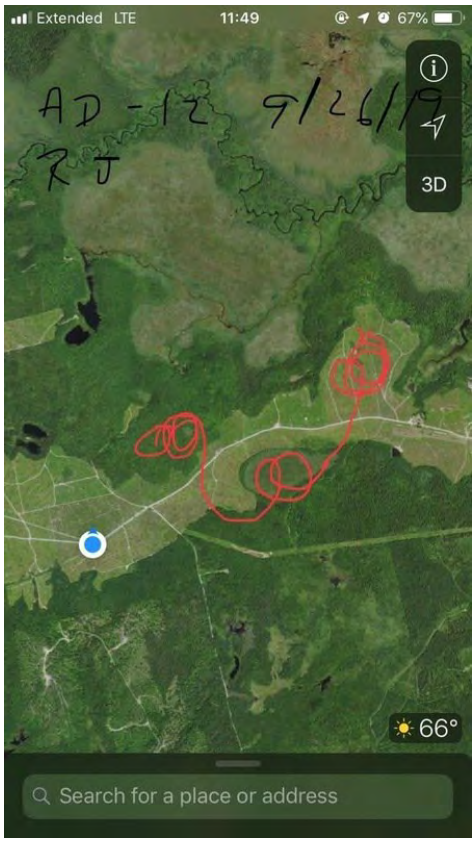
Survey Start Time	11:25
Survey End Time	13:25
Duration of survey (minutes)	120
Count of eagles observed	2
Count of raptors observed	17

Weather Summary

Wind Speed	5 - Fresh breeze
Wind Direction	SW
Temperature (F)	62
Relative Humidity	81
Barametric Pressure (inches)	29.8
Cloud Cover (percent)	25
Visibility	Unlimited
Precipitation	0 - none

Bald Eagle, 1

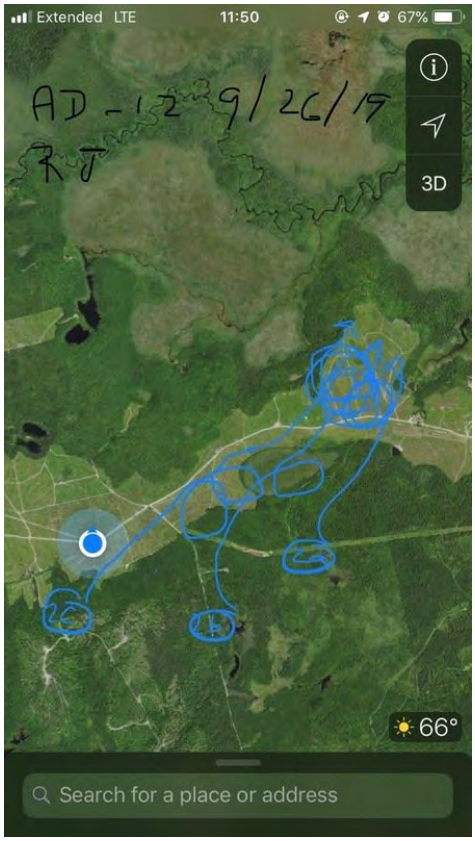
Raptor Site	AD-12
Raptor Date	9/26/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	2
number of eagles observed	2
Time first observed	11:32
Time last observed	11:41
Duration of observation (minutes)	9
Duration within survey boundary	2
Age	Adult
Sex	Unknown
Behavior	Circling, Gliding, Flapping
General Flight Direction	NE
Flight Height	4 - No predominant height

Notes	Initially spotted both adult BAEA circling in the north, low over a tree line. Circled for a few minutes over the tree line then continued flapping and gliding south east where they then began to circle over another tree line. Circled a few times then continued to flap and glide making their way north east. Circled for the rest of observation duration in the north east where they were last seen ascending high up out of site.
Map of Flight Path	

Turkey Vulture, 2

Raptor Site	AD-11
Raptor Date	9/26/19
Species	Turkey Vulture
Raptor observation number	2
Count of individuals in group	3
Time first observed	11:41
Time last observed	11:47
Duration of observation (minutes)	6
Duration within survey boundary	6
Age	Adult, Unknown
Sex	Unknown
Behavior	Gliding, Circling
General Flight Direction	NE
Flight Height	4 - No predominant height
Notes	Spotted three separate TUVU relatively all gliding in at the same time (within one min of each other). Each TUVU circled and gliding low over the field making their way north east where they met up with the bald eagles and circled together. Last observed ascending high up out of site with the two eagles.

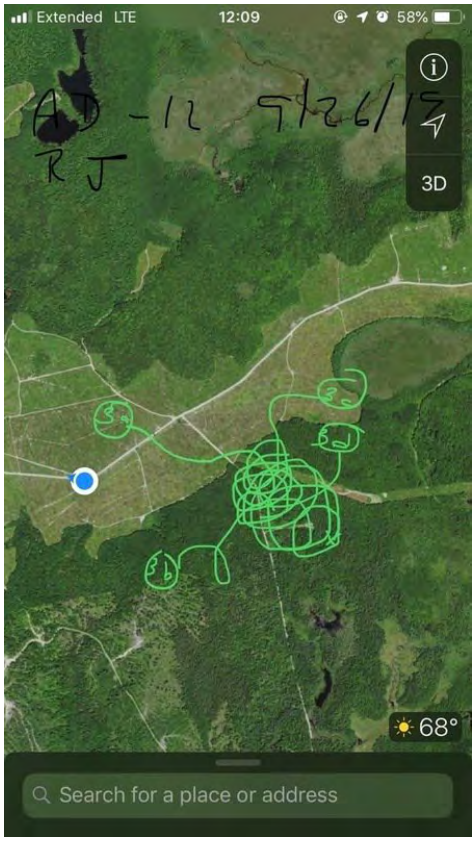
Map of Flight Path



Turkey Vulture, 3

Raptor Site	AD-11
Raptor Date	9/26/19
Species	Turkey Vulture
Raptor observation number	3
Count of individuals in group	4
Time first observed	11:51
Time last observed	11:57
Duration of observation (minutes)	6
Duration within survey boundary	6
Age	Adult, Unknown
Sex	Unknown
Behavior	Circling, Gliding
General Flight Direction	SE
Flight Height	2 - within rotor swept area, 1 - below rotor swept area
Notes	Four TUVU all spotted within 30 seconds of each other. Each coming from different directions flapping and circling. All four TUVU were observed for a few minutes circling in the south east low over a tree line where I lost site of them heading south east.

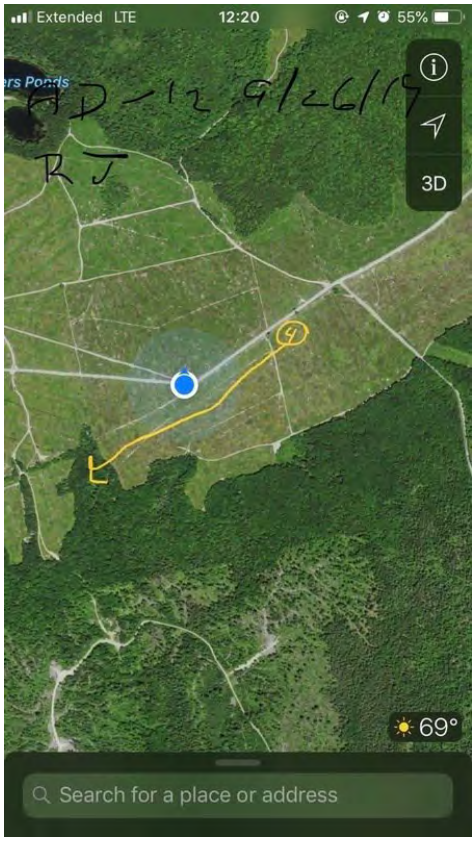
Map of Flight Path



Kestrel, 4

Raptor Site	AD-11
Raptor Date	9/26/19
Species	Kestrel
Raptor observation number	4
Count of individuals in group	1
Time first observed	12:18
Time last observed	12:19
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Female
Behavior	Gliding, Flapping
General Flight Direction	W
Flight Height	1 - below rotor swept area
Notes	Initially spotted gliding in the east heading west. Continued flapping and gliding west out of site over a tree line.

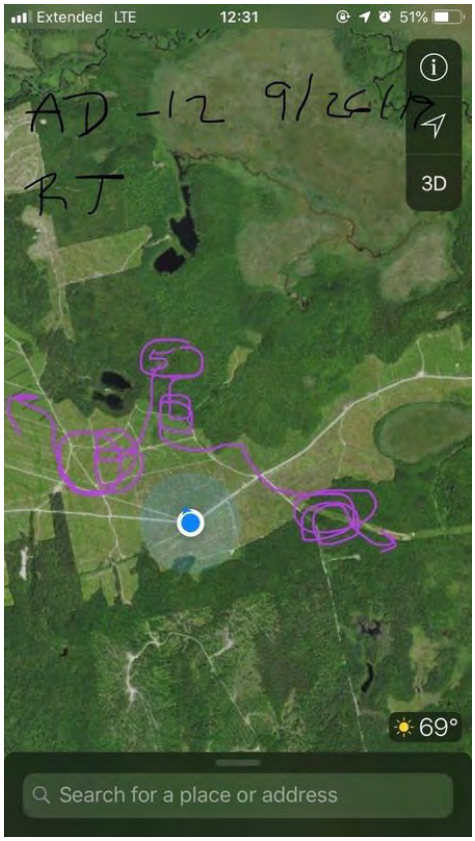
Map of Flight Path



Turkey Vulture, 5

Raptor Site	AD-11
Raptor Date	9/26/19
Species	Turkey Vulture
Raptor observation number	5
Count of individuals in group	4
Time first observed	12:22
Time last observed	12:31
Duration of observation (minutes)	9
Duration within survey boundary	9
Age	Unknown
Sex	Unknown
Behavior	Circling, Gliding
General Flight Direction	SE, NW
Flight Height	2 - within rotor swept area
Notes	Initially spotted four TUVU circling together in the north over a tree line. Continued to circle together for a few minutes and then one TUVU took off gliding south west where it then circled over the field for a few minutes before gliding north west. The other three TUVU continued to glide together making their way south east where they circled over another tree line for a few minutes. After a few minutes of circling the three TUVU began gliding south east where I lost site of them.

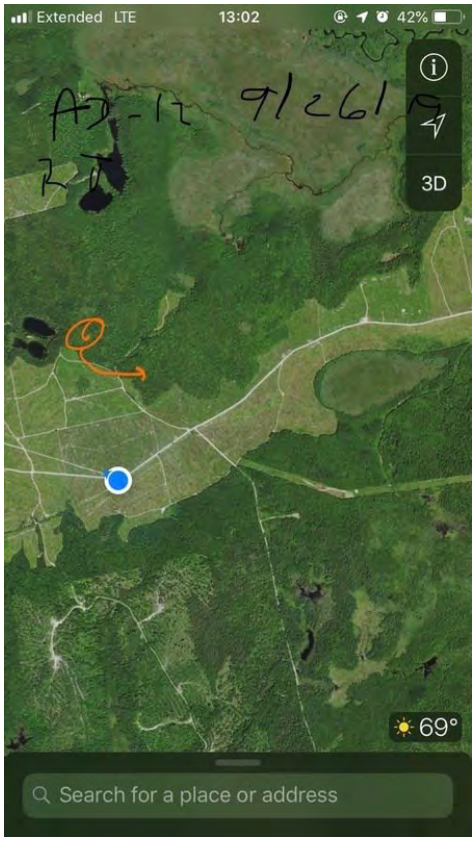
Map of Flight Path



Turkey Vulture, 6

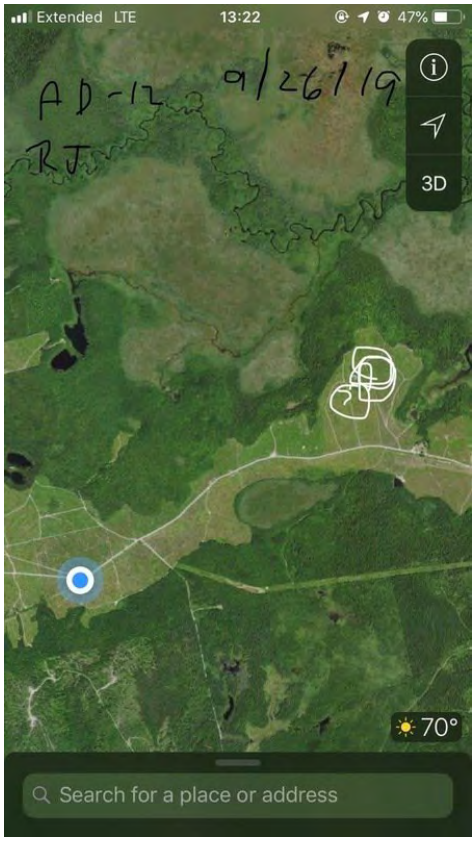
Raptor Site	AD-11
Raptor Date	9/26/19
Species	Turkey Vulture
Raptor observation number	6
Count of individuals in group	1
Time first observed	13:05
Time last observed	13:06
Duration of observation (minutes)	1
Duration within survey boundary	1
Age	Adult
Sex	Unknown
Behavior	Gliding
General Flight Direction	E
Flight Height	1 - below rotor swept area
Notes	Brief observation of a TUVU. Briefly observed gliding over the field in the north before it then glided low over the tree line out of site.

Map of Flight Path



Turkey Vulture, 7

Raptor Site	AD-11
Raptor Date	9/26/19
Species	Turkey Vulture
Raptor observation number	7
Count of individuals in group	2
Time first observed	13:19
Time last observed	13:21
Duration of observation (minutes)	2
Age	Unknown
Sex	Unknown
Behavior	Circling
General Flight Direction	E
Flight Height	1 - below rotor swept area, 2 - within rotor swept area
Notes	Spotted two TUVU circling above the blueberry barren for a few minutes. Last spotted circling low over the barren.

Map of Flight Path	

12:15

Time of observation	12:15
Describe observation	Other Birds: CORA AMCR

AD-12, 2019-10-29

Created	2019-10-29 15:17:12 UTC by Randi Jackson
Updated	2019-12-17 17:51:49 UTC by Meg Stevenson
Location	44.6692185011, -67.8322935105
Lead Observer	Randi Jackson
Survey Interval	October
Date	2019-10-29
Survey Site	AD-12

Survey Overview

Survey Start Time	09:18
Survey End Time	11:18
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	W
Temperature (F)	50
Relative Humidity	78
Barametric Pressure (inches)	30.4
Cloud Cover (percent)	98
Visibility	Unlimited
Precipitation	0 - none

11:18

Time of observation	11:18
Describe observation	Other Birds: CORA AMCR

AD-12, 2019-11-22

Created	2019-11-22 14:52:22 UTC by Randi Jackson
Updated	2019-12-17 17:49:30 UTC by Meg Stevenson
Location	44.6692384081, -67.8322553728
Lead Observer	Randi Jackson
Survey Interval	November
Date	2019-11-22
Survey Site	AD-12

Survey Overview

Survey Start Time	07:53
Survey End Time	09:53
Duration of survey (minutes)	120

Weather Summary

Wind Speed	6 - Strong breeze
Wind Direction	S
Temperature (F)	42
Relative Humidity	94
Barametric Pressure (inches)	29.7
Cloud Cover (percent)	100
Visibility	10mi
Precipitation	2 - Drizzle

AD-12, 2019-12-13

Created	2019-12-13 15:13:23 UTC by Randi Jackson
Updated	2020-01-02 15:42:02 UTC by Randi Jackson
Location	44.6691850154, -67.8321781755
Lead Observer	Randi Jackson
Survey Interval	December
Date	2019-12-13
Survey Site	AD-12

Survey Overview

Survey Start Time	09:42
Survey End Time	11:42
Duration of survey (minutes)	120
Count of eagles observed	1
Count of raptors observed	1

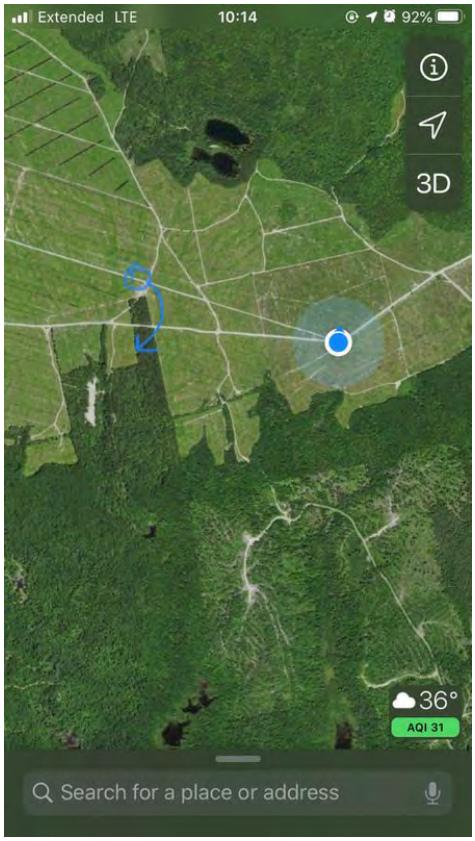
Weather Summary

Wind Speed	2 - Light breeze
Wind Direction	S
Temperature (F)	33
Relative Humidity	75
Barametric Pressure (inches)	30.53
Cloud Cover (percent)	75
Visibility	Unlimited
Precipitation	0 - none

Bald Eagle, 1

Raptor Site	AD-12
Raptor Date	12/13/19
Species	Bald Eagle
Raptor observation number	1
Count of individuals in group	1
number of eagles observed	1
Time first observed	10:11
Time last observed	10:12
Duration of observation (minutes)	1
Duration within survey boundary	0
Age	Adult
Sex	Unknown
Behavior	Flapping
General Flight Direction	SW
Flight Height	1 - below rotor swept area
Horizontal Position Code	D - flight path over a valley
Notes	First spotted flying in from behind the tree line flying low over the barrens. Ascended up just high enough to clear the trees flapping the entire time. Flew south west over the tree line.

Map of Flight Path



Weather during observation

Wind Speed	2 - Light breeze
Wind Direction	S
Temperature (F)	33
Relative Humidity	72
Barametric Pressure (inches)	30.53
Cloud Cover (percent)	75
Visibility	Unlimited
Precipitation	0 - none

11:42

Time of observation	11:42
Describe observation	Other Birds: CORA

AD-11, 2020-01-07

Created	2020-01-07 20:47:03 UTC by Randi Jackson
Updated	2020-01-07 20:48:30 UTC by Randi Jackson
Location	44.6692320798008, -67.8322952706998
Lead Observer	Randi Jackson
Survey Interval	July
Date	2020-01-07
Survey Site	AD-11

Survey Overview

Survey Start Time	13:48
Survey End Time	15:48
Duration of survey (minutes)	120

Weather Summary

Wind Speed	3 - Gentle breeze
Wind Direction	W
Temperature (F)	20
Relative Humidity	58
Barametric Pressure (inches)	30.02
Cloud Cover (percent)	50
Visibility	20km
Precipitation	0 - none

15:48

Time of observation	15:48
Describe observation	Other Birds: CORA

AD-12, 2020-02-04

Created	2020-02-04 15:19:28 UTC by Randi Jackson
Updated	2020-02-04 17:18:51 UTC by Randi Jackson
Location	44.6692532441064, -67.8322067578024
Lead Observer	Randi Jackson
Survey Interval	July
Date	2020-02-04
Survey Site	AD-12

Survey Overview

Survey Start Time	08:20
Survey End Time	10:20
Duration of survey (minutes)	120

Weather Summary

Wind Speed	1 - Light air
Wind Direction	S
Temperature (F)	36
Relative Humidity	48
Barametric Pressure (inches)	29.81
Cloud Cover (percent)	75
Visibility	Unlimited
Precipitation	0 - none

08:20

Time of observation	08:20
Describe observation	Other Birds: CORA

EXHIBIT 7-10: RAPTOR MIGRATION SURVEY REPORTS

Diurnal Raptor Migration and Use Report, Downeast Wind Project, September 2015 to November 2016

Business Confidential

Prepared by:
Stantec Consulting Services Inc.
30 Park Drive
Topsham, ME 04086

March 2017

Stantec

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Executive Summary

Stantec Consulting Services Inc. (Stantec) conducted three seasons of diurnal raptor migration and use surveys for the proposed Downeast Wind Project (DOW or Project) in Washington County, Maine. Surveys were completed as part of pre-construction planning efforts for DOW in accordance with the Maine Department of Inland Fisheries and Wildlife's (MDIFW) *Curtailment Policy and Wind Power Pre-construction Study Recommendations* (June 2015), the U.S. Fish and Wildlife Service's *Land-based Wind Energy Guidelines* (March 2012), and methods similar to those employed at other wind energy projects in Maine and the Northeast. Raptor migration surveys followed methods detailed in the Project Work Plan submitted to MDIFW on 19 February 2016 and updated 18 March 2016. The goal of the surveys was to characterize raptor migration activity. The objectives were to document timing, species composition, and flight characteristics of migrating raptors.

Raptor Migration Surveys

Raptor migration surveys were conducted from a location inside and central to the Project area during Fall from 9 September to 25 November 2015, and from a location outside the Project area in similar habitat and terrain during Spring (1 March to 16 June 2016) and Fall (2 August to 22 November 2016). Surveys were completed from 9:00 A.M. to approximately 2 hours before sunset at approximately 3-4 day intervals.

Fall 2015 Raptor Migration Survey

In 24 survey days totaling 160 survey hours the overall passage rate was 3.12 raptors per hour (raptors/hr). Peak migratory activity occurred in September, specifically on 21 September (11.74 raptors/hr). The species most commonly observed was turkey vulture (*Cathartes aura*) (n=185, 37.1%), followed by broad-winged hawk (*Buteo platypterus*) (n=65, 13.0%) and northern harrier (*Circus cyraneus*) (n=54, 10.8%). Flight behaviors were predominantly soaring and gliding and the average minimum flight height of all observations was 179m (587 ft).

Fall 2016 Raptor Migration Survey

In 34 survey days totaling 245 survey hours, the overall passage rate was 0.77 raptors/hr. Peak migratory activity occurred in September, specifically on 30 September (3.03 raptors/hr). The species most commonly observed was turkey vulture (n = 61, 32.4%), followed by American kestrel (*Falco sparverius*) (n = 48, 25.5%). Flight behaviors were predominantly soaring and gliding and the average minimum flight height of all observations was 70m (230 ft).

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Spring 2016 Raptor Migration Survey

In 32 survey days totaling 265 hours the overall passage rate was 0.94 raptors/hr. Peak migratory activity occurred on 30 March (3.38 raptors/hr). The species most commonly observed was turkey vulture (n = 108, 43.4%), followed by bald eagle (*Haliaeetus leucocephalus*) (n = 69, 27.7%). Flight behaviors were predominantly soaring and gliding and the average minimum flight height was 117 m.

Raptor Use Surveys

Raptor use surveys were completed at 13 points distributed in representative habitats throughout the Project area from 16 September 2015 – 7 September 2016. Each point was surveyed for 1 hour at approximately 3-week intervals. These data were used to evaluate raptor migration activity during the fall migration periods (16 September to 18 November 2016 and 16 August to 7 September 2016) and spring migration period (3 March and 15 June 2016).

Fall 2015 Raptor Use Survey

In 4 survey days (24 survey hours) daily passage rates ranged from 0.50 to 2.33 raptors/hr, and the overall seasonal passage rate was 1.46 raptors/hr. The species with the greatest observations were broad-winged hawk (n = 9, 26%), followed by turkey vulture (n = 8, 23%).

Spring 2016 Raptor Use Survey

In 10 survey days (40 survey hours) daily passage rates ranged from 0.00 to 3.00 raptors/hr, and the overall seasonal passage rate was 0.80 raptors/hr. The species with the greatest observations were turkey vulture (n = 16, 50%), followed by bald eagle (n = 6, 19%).

Fall 2016 Raptor Use Survey

In 4 survey days (22 survey hours) daily passage rates ranged from 0.00 to 0.67 raptors/hr, and the overall seasonal passage rate was 0.36 raptors/hr. The species with the greatest observations were turkey vulture (n = 5, 63%), followed by bald eagle, merlin (*Falco columbarius*) and sharp-shinned hawk (*Accipiter striatus*) (n = 1, 13% each).

Conclusions

Although results differed between the raptor migration survey and raptor use survey methods, and raptor migration surveys more effectively documented peaks in migration activity, the data from each study method showed similar patterns. Overall, species composition and timing of peak activity were similar during the fall 2015 and fall 2016 seasons, with peaks documented in late September. Passage rates from both studies were higher during fall 2015 than in spring or fall of 2016. In spring 2016, peak raptor migration occurred in late March.

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Raptors observed were typical of the region surveyed, and the timing of activity was similar to that at other projects in Maine and in the Northeast. Patterns in raptor migration and use at the Project are consistent with those documented at other wind projects, and species composition was as expected based on the region and habitats present in the Project area. Raptors observed making localized movements exhibited various behaviors including perching, aerial displays and foraging. Because raptor activity at DOW is similar to that recorded at operating wind projects in Maine, and raptor fatalities at these projects have been very rare (4 fatalities recorded in 10 years of operating projects), raptor fatalities at DOW are expected to be uncommon. Monitoring of collision mortality is recommended to support this conclusion.

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) conducted three seasons of diurnal raptor surveys (migration and use) for the proposed Downeast Wind Project (DOW or Project) in Washington County, Maine. Raptor migration surveys were completed as part of pre-construction planning efforts for DOW in accordance with the Maine Department of Inland Fisheries and Wildlife's (MDIFW) *Curtailment Policy and Wind Power Pre-construction Study Recommendations* (June 2015), the U.S. Fish and Wildlife Service's *Land-based Wind Energy Guidelines* (March 2012), and methods similar to those employed at other wind energy projects in Maine and the Northeast. Two types of surveys were completed: raptor migration surveys from a single point and raptor use surveys from points distributed throughout the Project area. Surveys followed methods detailed in the Project Work Plan submitted to MDIFW on 19 February 2016 and updated 18 March 2016.

The goal of the surveys was to characterize raptor migration activity. The objectives were to document timing, species composition, and flight characteristics of migrating raptors.

2.0 METHODS

2.1 RAPTOR MIGRATION SURVEYS

2.1.1 Survey Effort and Location

Survey seasons overlapped with the known migration window for the 15 raptor species which typically occur in the northeast during migration (Figure 2-1).

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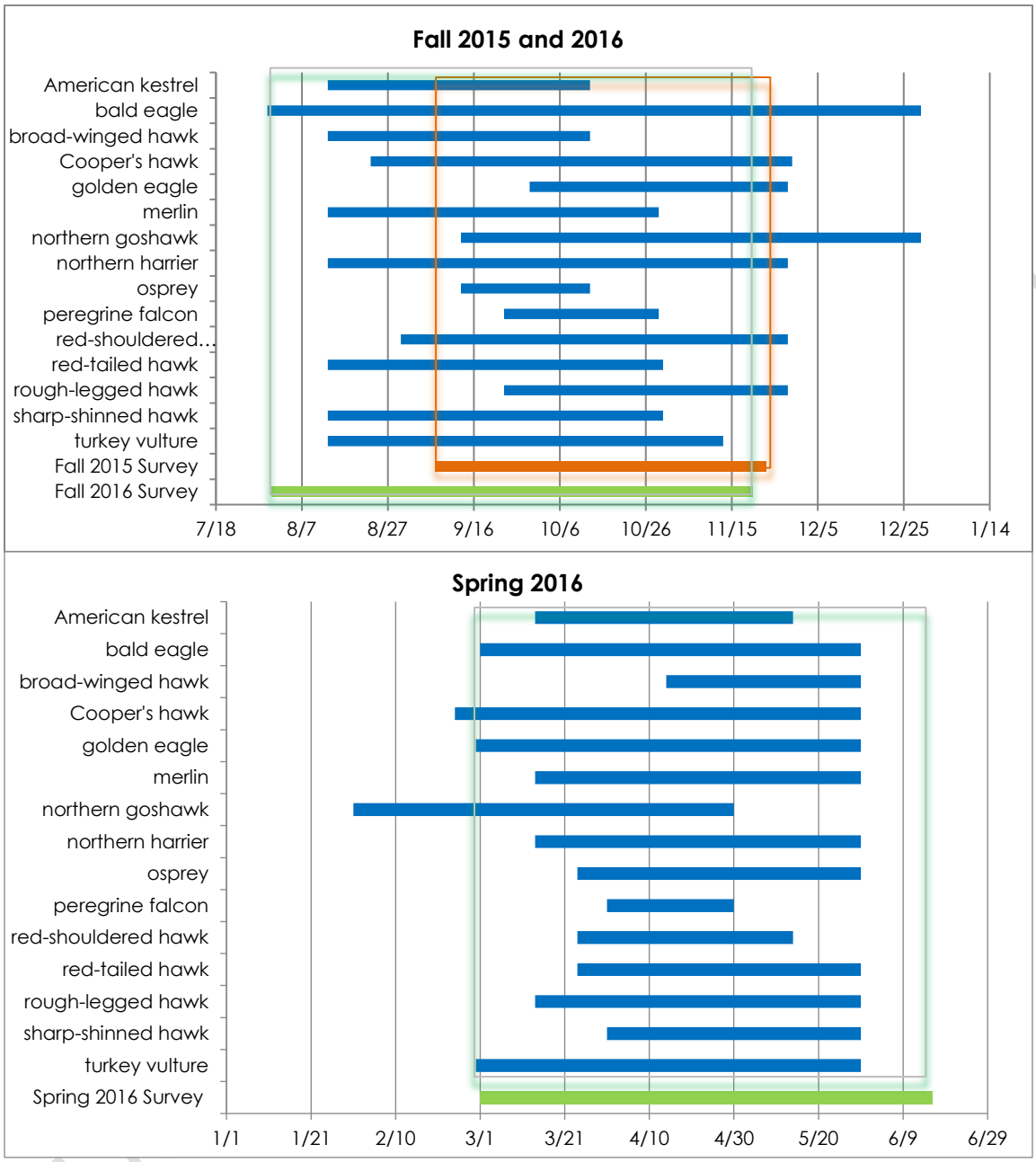


Figure 2-1. Survey timeframe and raptor species' migration window in the Northeast U.S. for three raptor seasons (Wheeler 2003; top: fall 2015 effort in orange, fall 2016 effort in green; bottom: spring 2016 effort in green).

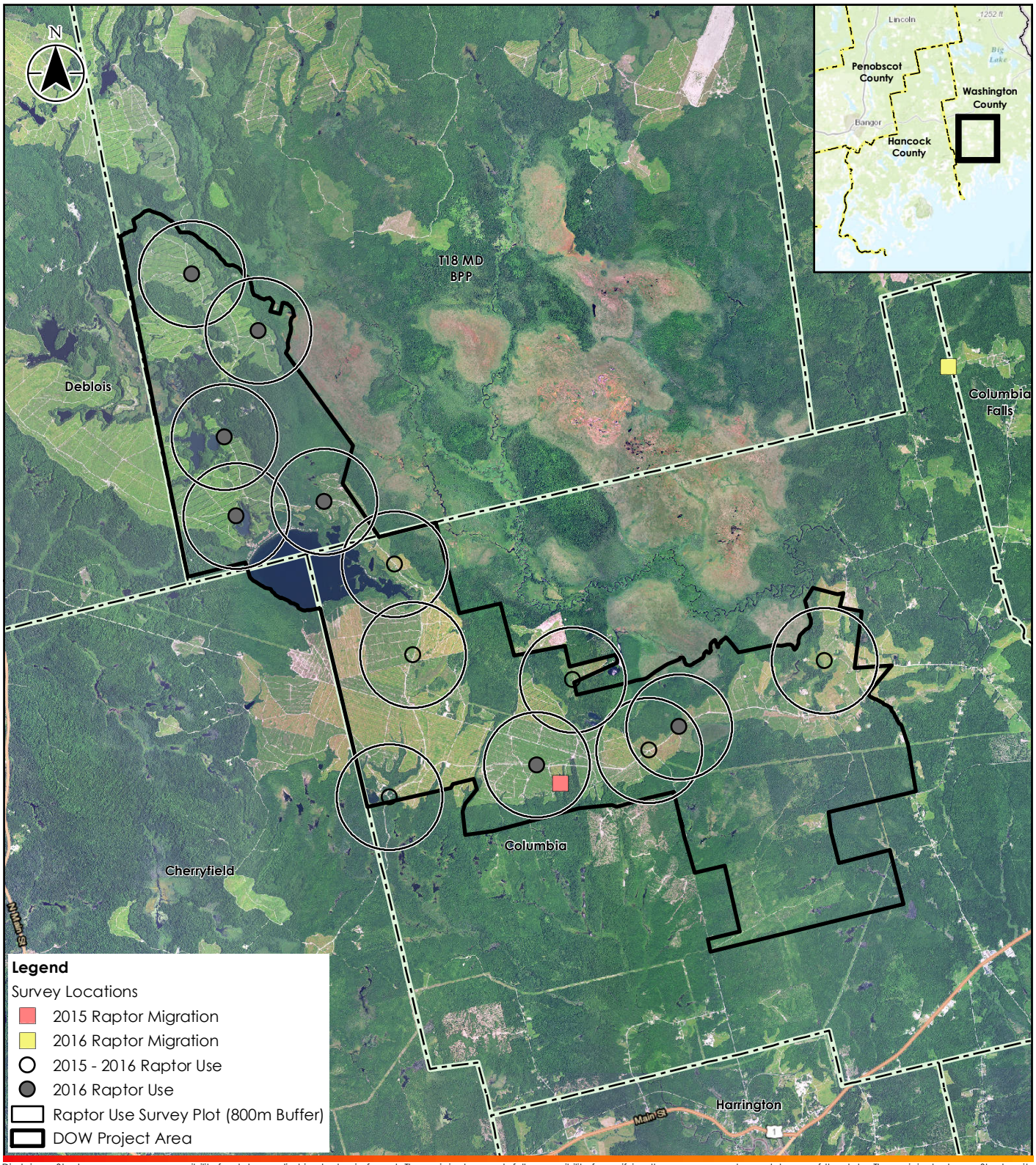
Surveys days were selected based on weather forecast predictions, targeting days with optimal migration weather, i.e., fair days with thermal development and winds from a following direction (south in spring, north in fall). As a result, days with sub-optimal migration weather, e.g., moderate winds and varied wind direction, were surveyed at a lower frequency than optimal

days. Surveys were conducted from 9 A.M. to 2 hours before sunset. Binoculars aided in identification.

Raptor migration surveys were conducted from a location inside and central to the Project area during Fall from 9 September to 25 November 2015, and from a location outside the Project area in similar habitat and terrain during Spring (1 March to 16 June 2016) and Fall (2 August to 22 November 2016). Survey locations are presented in Figure 2-2.

The survey site in fall 2015 was centrally located on flat ground with an extensive view of the Project area (Appendix A Figure 1, Figure 2-2). In spring 2016, after the Project area was revised to include a parcel of land to the northeast, Stantec shifted the survey location approximately 7.5 miles to the northeast to accommodate this revision (Appendix A Figure 2, Figure 2-2). The shifted survey location was subsequently moved approximately 10 m in mid-May to avoid bee activity from nearby commercial bee hives (Appendix A Figure 3); this location was retained for the remainder of the 2016 surveys.

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Reviewed by SBG on 2017-03-08

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Client/Project
Downeast Wind Project
Washington County, Maine

Figure No.
2-2

Title
Raptor Survey Locations, 2015 - 2016
3/21/2017

2.1.2 Data Collection

For each observation the following were recorded:

- Time of observation
- Species identification (when possible)
- Number of individuals
- Age class (when possible)
- Flight path drawn on a study area map
- The bird's minimum flight height above ground level
- Time below proposed turbine height (183 m), when applicable
- Flight behaviors
- Flight azimuth
- General behavior notes

2.1.3 Data Summary and Analysis

The following were summarized or calculated for the survey season and survey day:

- Observation rates
- Number of species and individuals
- Timing of peak activity (within and among survey days)
- Range of flight heights
- The percentage of birds seen below proposed turbine height
- Flight Behaviors

For summary and analysis, a single "pass" of a raptor was considered a single raptor observation; that is, an "observation" is considered a view of a single raptor from the time it is detected to the time it flies out of view. Differentiating between individuals in most cases is nearly impossible for this type of survey, so the same individual could be detected and recorded multiple times.

2.2 RAPTOR USE SURVEYS

2.2.1 Survey Effort and Location

Raptor use data were recorded at 13 points within the Project area in representative habitats. Each point was surveyed for 1 hour at approximately 3-week intervals between September 2015 and September 2016; however, 7 points were only surveyed in 2016 (Figure 2-1).

2.2.2 Data Collection

The same data collection methods used for Raptor Migration Surveys were utilized for Raptor Use Surveys, except that eagles were the focus species during these surveys; therefore, in cases

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when eagles and raptors were observed simultaneously, data collection on the eagles would have been a higher priority than raptor data collection.

2.2.3 Data Summary and Analysis

Data was collected year round; however, only data collected during each migration season (1 August to 30 November in fall and 1 March to 15 June in spring) were used in analysis of raptor migration. Observation rates, and the number and proportion of species and individuals relative to the total number and species observed were calculated.

3.0 RESULTS

3.1 RAPTOR MIGRATION SURVEYS

3.1.1 Survey effort and results summary

The fall 2015 effort, comprising 24 survey days, had the highest number of raptor observations (n = 499) compared to the fall 2016 effort (34 survey days; n = 188) and spring 2016 effort (32 survey days; n = 24; Table 3-1). Detection rates and number of species observed in spring 2016 were similar to fall 2016.

Table 3-1. Raptor migration survey effort and results during three raptor seasons, Downeast Wind Project, 2015-2016.

	Fall 2015	Fall 2016	Spring 2016
Range of survey dates	9/9–11/25	8/2-1/22	3/1–6/16
No. survey days	24	34	32
No. survey hours	160	245	265.5
No. raptor species observed	9	13	12
Total no. observations of raptors	499	188	249
Mean no. raptor observations/hour	3.12	0.77	0.94
Total no. of observations of raptors below 183 m height (% total raptor obs)	268 (53.7%)	159 (84.6%)	183 (73.5%)

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3.1.2 Raptor Observations

3.1.2.1 Daily Passage Rates

The fall 2015 daily passage rates increased to a peak on 21 September (11.74 raptors/hour [raptors/hr]; Figure 3-1, Appendix A Table 1) and declined thereafter.

The fall 2016 daily passage rates peaked much less prominently around 30 September (Figure 3-1, Appendix A Table 2). Passage rates ranged from 0 raptors/hr on 9 and 15 November to 3.03 raptors/hr on 30 September (Figure 3-1, Appendix A Table 2).

In spring 2016, the daily passage rates ranged from 0 raptors/hr on 18 May to 3.38 raptors/hr on 30 March (Figure 3-1, Appendix A Table 3). Spring 2016 had two peaks in activity, one in late March and another less pronounced peak in mid-June.

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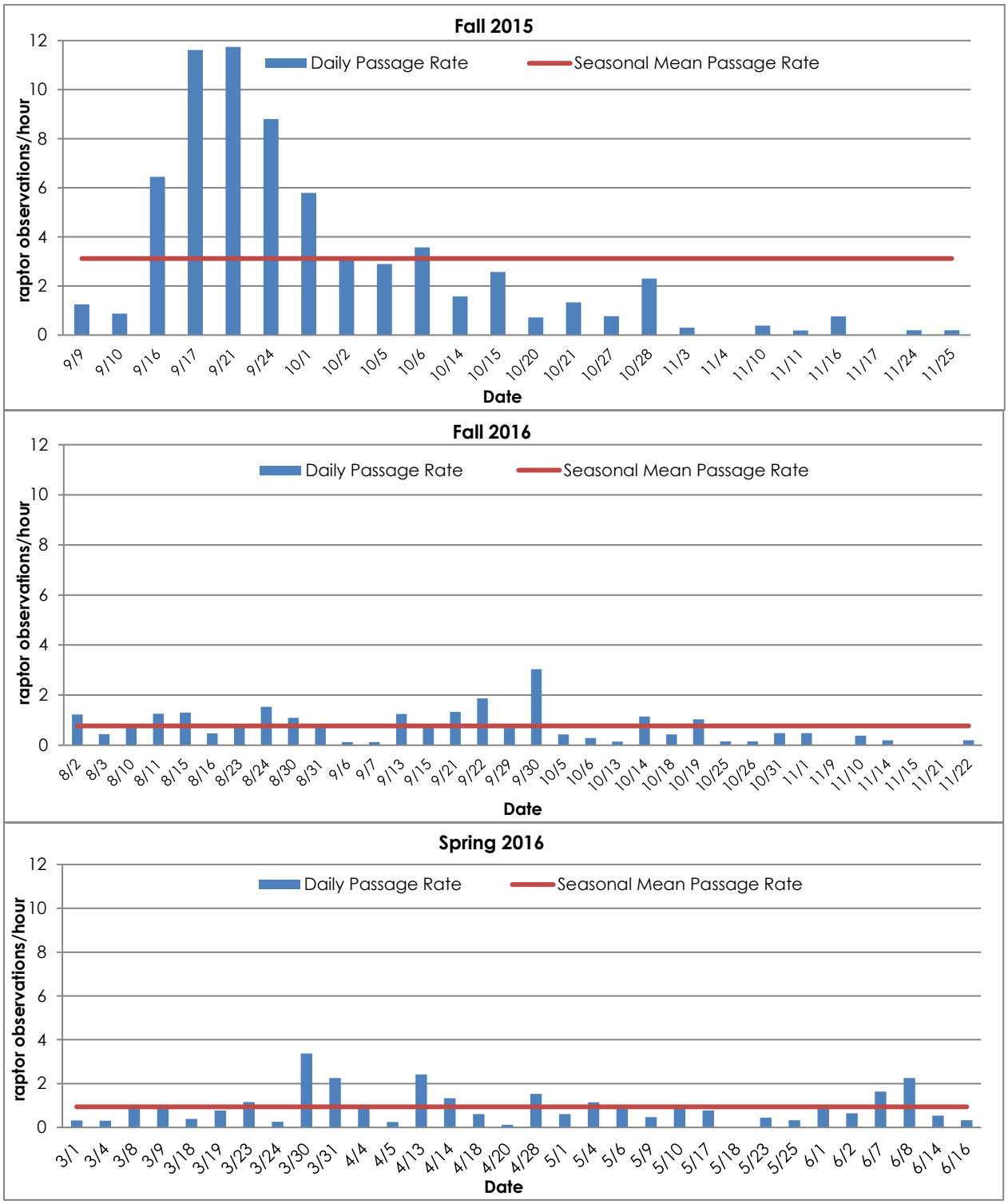


Figure 3-1. Daily mean and seasonal raptor passage rates for three raptor seasons, Downeast Wind Project, 2015-2016.

3.1.2.2 Species

Similar numbers of species were observed in spring and fall 2016(12 in spring, 13 in fall). Fewer species were observed in fall 2015 (n = 9) than in spring or fall 2016 (Table 3-2, Figure 3-2, Appendix A Table 1-3). The most commonly observed species in all three seasons was turkey vulture (*Cathartes aura*; n = 185, 37.1% in fall 2015; n = 61, 32.4% in fall 2016; n = 108, 43.4% in spring 2016). The second most commonly observed species were broad-winged hawk (*Buteo platypterus*) in fall 2015 (n = 65, 13.0%), American kestrel (*Falco sparverius*) in fall 2016 (n = 48, 25.5%), and bald eagle (*Haliaeetus leucocephalus*) in spring 2016 (n = 69, 27.7%).

Table 3-2. Number of raptor observations by species during three raptor seasons, Downeast Wind Project, 2015-2016.

Raptor Species Observed		Fall 2015		Fall 2016		Spring 2016	
Common Name	**Scientific Name**	**No. obs**	**% obs**	**No. obs**	**% obs**	**No. obs**	**% obs**
American kestrel	*Falco sparverius*	45	9.0	48	25.5	4	1.6
bald eagle	*Haliaeetus leucocephalus*	42	8.4	15	8.0	69	27.7
broad-winged hawk	*Buteo platypterus*	65	13.0	5	2.7	17	6.8
Cooper's hawk	*Accipiter cooperii*	1	0.2	1	0.5	0	0.0
merlin	*Falco columbarius*	0	0.0	15	8.0	1	0.4
northern goshawk	*Accipiter gentilis*	0	0.0	1	0.5	1	0.4
northern harrier	*Circus cyraneus*	54	10.8	19	10.1	11	4.4
osprey	*Pandion haliaetus*	5	1.0	1	0.5	3	1.2
peregrine falcon	*Falco peregrinus*	0	0.0	1	0.5	1	0.4
red-shouldered hawk	*Buteo lineatus*	0	0.0	2	1.1	1	0.4
red-tailed hawk	*Buteo jamaicensis*	7	1.4	8	4.3	7	2.8
sharp-shinned hawk	*Accipiter striatus*	4	0.8	7	3.7	3	1.2
turkey vulture	*Cathartes aura*	185	37.1	61	32.4	108	43.4
unidentified accipiter	*Accipiter (sp)*	5	1.0	1	0.5	0	0.0
unidentified buteo	*Buteo (sp)*	19	3.8	0	0.0	3	1.2
unidentified falcon	*Falco (sp)*	3	0.6	0	0.0	0	0.0
unidentified raptor	*Accipitridae (gen, sp)*	64	12.8	3	1.6	20	8.0
Total no. observations of raptors		**499**	**100.0**	**188**	**100.0**	**249**	**100.0**

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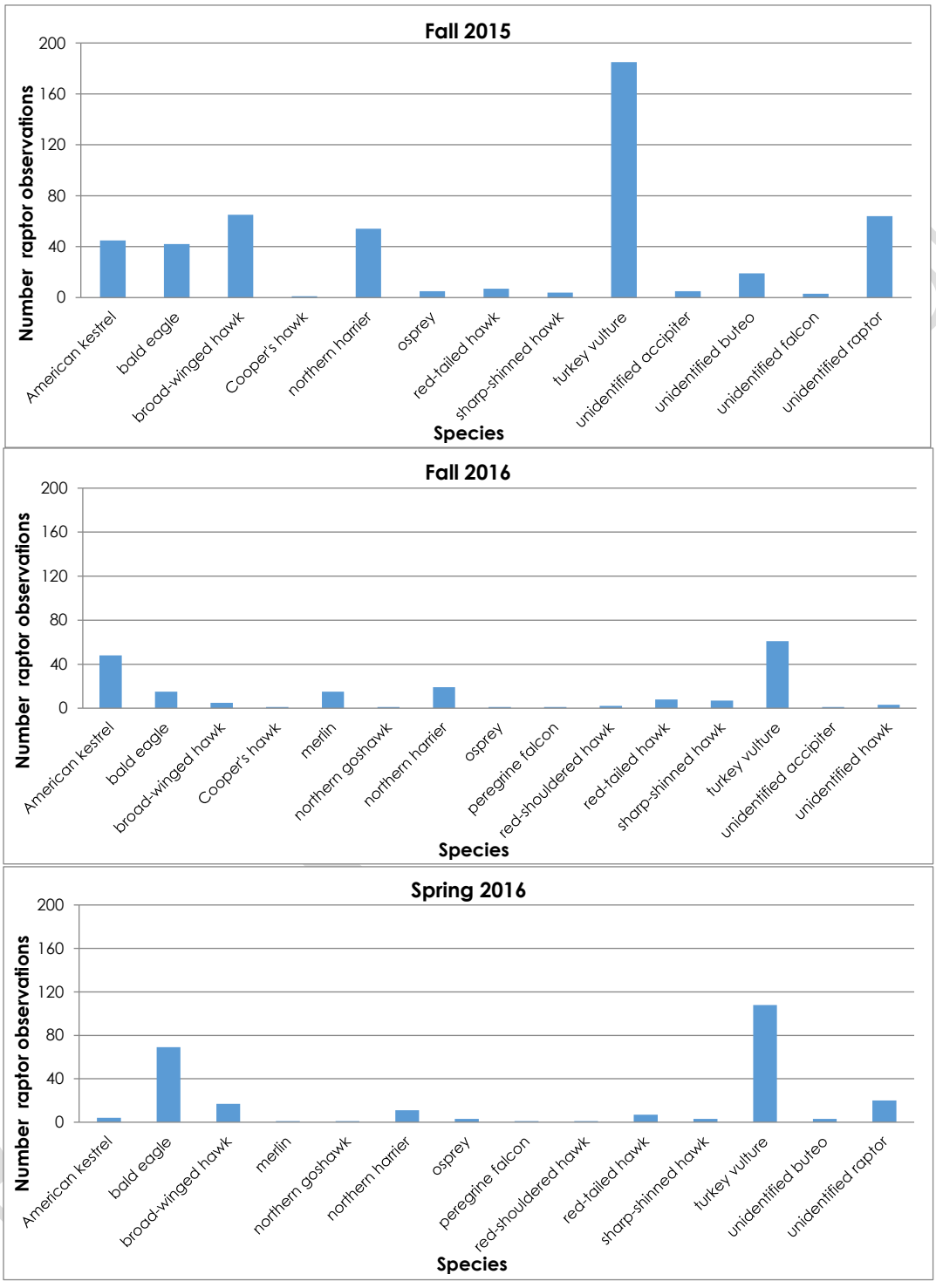


Figure 3-2. Numbers of raptor observations by species for three raptor seasons, Downeast Wind Project, 2015-2016.

3.1.2.3 Observations Per Survey Hour

In fall 2015 and 2016, observations peaked from 10:00 – 11:00 A.M. In fall 2015 this peak was distinct relative to the other hours; the hourly distribution in the other two seasons were more evenly distributed. All seasons had few observations after 5:00 P.M. (Figure 3-3, Appendix A Table 4).

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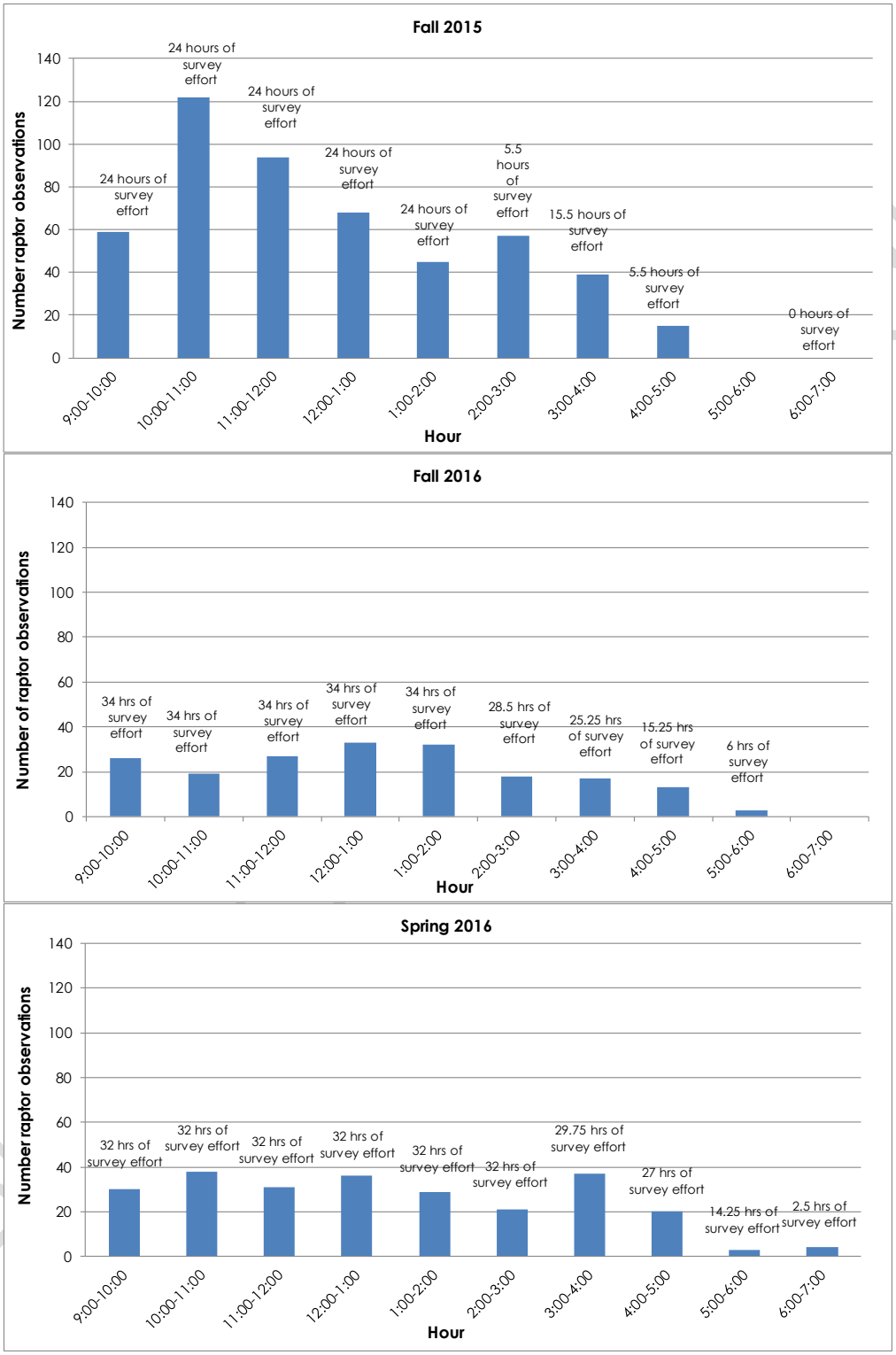


Figure 3-3. Numbers of raptor observations per survey hour for three raptor seasons, Downeast Wind Project, 2015-2016.

3.1.2.4 Flight Heights

In fall 2015, 268 of the 499 observations (54%) were observed at heights below 183 m. The average minimum flight height of all raptors observed in fall 2015 was 179 m (Figure 3-4, Appendix A Table 5).

Average flight height and percent below turbine height were similar during the fall 2016 and spring 2016 seasons. In fall 2016, 159 of 188 observations (84.6%) were observed below 183 m, and the average minimum flight height was 70 m. The most common species below turbine height were American kestrel, merlin (*Falco columbarius*), and turkey vulture. In spring 2016, 183 of 249 observations (73.5%) were observed below 183 m and the average minimum flight height was 117m.

The species with the greatest number of observations below turbine height in all three seasons were turkey vulture (n = 89 in fall 2015, n = 50 in fall 2016, n = 76 in spring 2016), followed by American kestrel (n = 45 in fall 2015, n = 47 in fall 2016), northern harrier (*Circus cyaneus*) (n = 51 in fall 2015), merlin (n = 15 in fall 2016), and bald eagle (n = 48 in spring 2016) (Figure 3-4, Appendix A Table 5).

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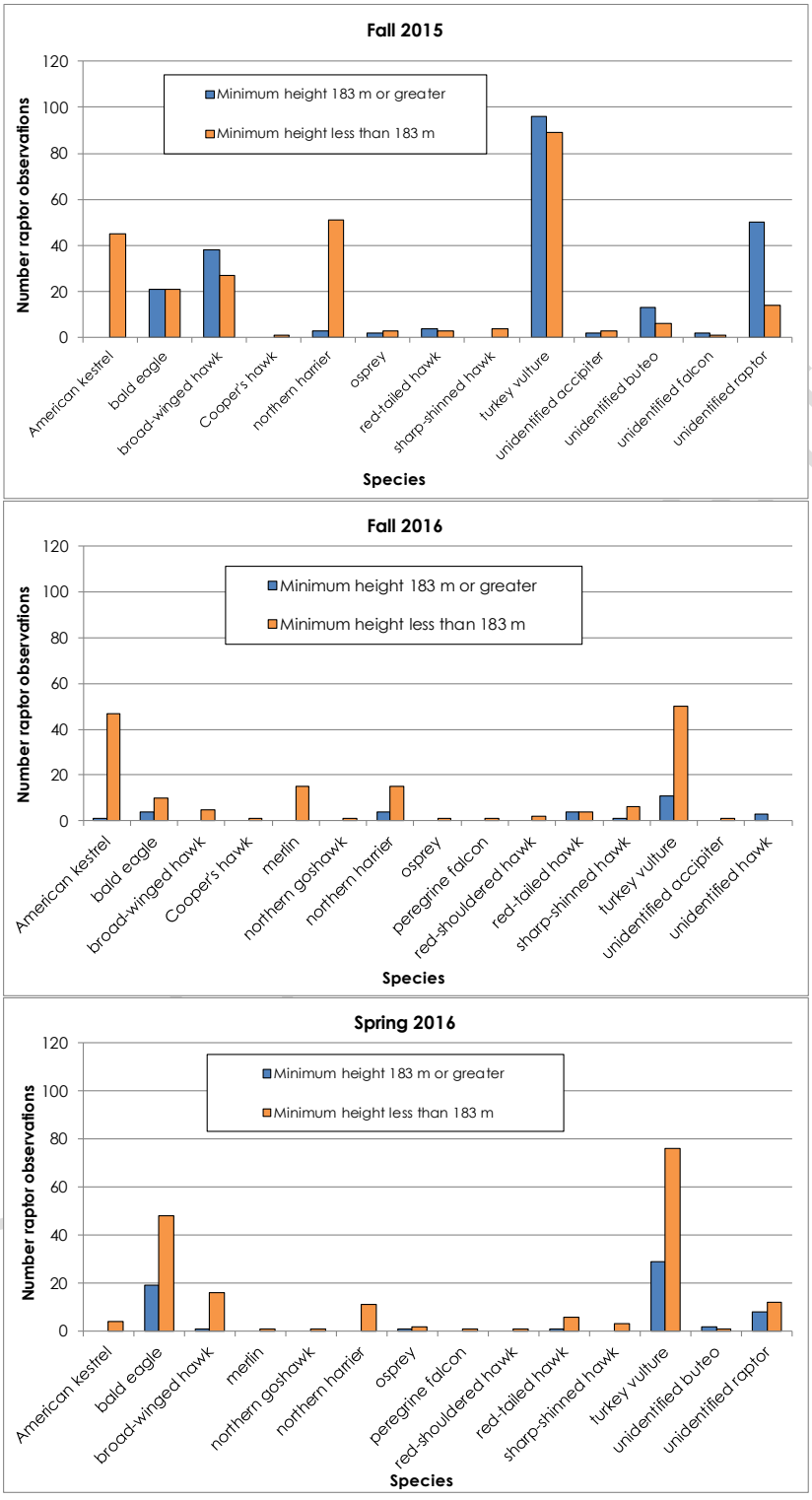


Figure 3-4. Number of raptor observations by species at heights above and below 183 m for three raptor seasons, Downeast Wind Project, 2015-2016.

3.1.2.5 Behaviors

Some raptors exhibited multiple behaviors in the Project area, resulting in more behavior observations than total raptor observations. In all three seasons, soaring and/or gliding was the most commonly observed behavior (75.7% of observations in fall 2015, 42.0% of observations in fall 2016, 77.6% of observation in spring 2016; Table 3-3). Other behaviors observed included powered flight, aerial displays, foraging, and perching.

Table 3-3. Number of raptor observations by behavior during three raptor migration seasons, Downeast Wind Project, 2015-2016.

Behavior[1]	Fall 2015		Fall 2016		Spring 2016	
	No. Obs.[2]	% Obs.	No. Obs.	% Obs.	No. Obs.[3]	% Obs.
soaring, gliding	358	75.7	102	42.0	249	77.6
powered flight	27	5.7	70	28.8	37	11.5
aerial display	2	0.4	13	5.3	9	2.8
foraging	73	15.4	52	21.4	23	7.2
perched	13	2.7	6	2.5	3	0.9
TOTAL	**473**	**100.0**	**243**	**100.0**	**321**	**100.0**

[1] Some individuals exhibited multiple behaviors.

[2] Flight behavior not recorded for 39 of 499 observations.

[3] Flight behavior not recorded for 2 of the 249 observations.

Aerial displays included both courtship and intra- and inter-species territorial displays. Bald eagles were observed exhibiting aerial displays in all three seasons with most instances in spring 2016 (80%) between 8 March and 30 March. Other species involved in aerial displays include American kestrel (n = 4), merlin (n = 4), red-tailed hawk (*Buteo jamaicensis*) (n = 3), and northern harrier (n = 1), all during fall survey periods (Appendix A Table 6). Only one aerial display occurrence was observed from the 2015 raptor survey location inside the current Project area. All other occurrences were observed from the 2016 raptor survey location outside the current Project area.

Three species and 73 observations exhibited foraging behavior in fall 2015, 8 species and 52 observations exhibited foraging in fall 2016, and 8 species and 23 observations exhibited foraging in spring 2016 (Table 3-4, Appendix A Table 6). Forty-nine percent of foraging behaviors were observed from the 2015 raptor migration location inside the current Project area and involved two species, American kestrel and northern harrier.

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Table 3-4. Foraging behaviors by month during three seasons of raptor migration surveys, Downeast Wind Project, 2015-2016.

	Fall 2015			Fall 2016				Spring 2016		
Species	Sep	Oct	Nov	Aug	Sep	Oct	Nov	Apr	May	Jun
American kestrel	22	4		5	9			1	1	1
broad-winged hawk				1					2	1
merlin				2						1
northern goshawk				1						
northern harrier	20	17	7	1	3	5	1	3	3	1
red-shouldered hawk								1		
red-tailed hawk				1					1	
sharp-shinned hawk				4				2		
turkey vulture				7	8	4		4	1	
unidentified hawk	1									
Total	**43**	**21**	**7**	**22**	**20**	**9**	**1**	**11**	**8**	**4**

3.1.2.6 Rare, Threatened, and Endangered Species

No federally or state-listed threatened or endangered raptor species were observed. Bald eagles, federally protected by the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) and a Species of Special Concern in Maine (MDIFW 2013a), were observed all three seasons, and most frequently in spring 2016 (Table 3-5).

Table 3-5. Bald eagle observations, Downeast Wind Project, 2015-2016.

Season	Number of Observations	% of Total Observations	Number flying below 183m
Fall 2015	42	8%	21
Fall 2016	15	8%	10
Spring 2016	69	28%	48

Northern harrier (*Circus cyaneus*), a Species of Special Concern in Maine (MDIFW 2013a), was observed all three seasons, and most frequently in fall 2015 (Table 3-6).

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Table 3-6. Northern harrier observations, Downeast Wind Project, 2015-2016.

Season	Number of Observations	% of Total Observations	Number Flying Below 183m
Fall 2015	54	11%	51
Fall 2016	19	10%	15
Spring 2016	11	4%	11

Peregrine falcon (*Falco peregrinus*), whose breeding population is state-listed endangered (MDIFW 2013b), was observed once in fall 2016 and spring 2016; both observations occurred at heights below 183 m.

3.1.2.7 Weather and Passage Rates

During fall 2015 and fall 2016 surveys winds were primarily from the north (following) (Table 3-7). Wind speeds ranged from calm (0 miles per hour [mph] to high (13-18 mph) with speeds primarily in the 4-8 mph range. Sky conditions were clear to partly cloudy with a few overcast days.

In fall 2015, the three days with the highest numbers of observation rates, 17 September (11.61 raptors/hr), 21 September (11.74 raptors/hr), and 24 September (8.8 raptors/hr), had clear skies and the presence of a high pressure system. Wind direction was generally favorable on these days; from the west on 17 September, from the northeast on 21 September, and from the northwest on 24 September. All three days had relatively moderate to high wind speeds (9-12 mph).

In fall 2016, high pressure systems were present on 73% of survey days including the three days with the highest observation rates, 30 September (3.03 raptors/hr); 22 September (7.87 raptors/hr); and 24 August (1.53 raptors/hr). Wind direction was generally favorable on these days; from the northeast on 30 September, from the northwest on 22 September, and from the west 24 August. Mean wind speed varied among days ranging from 0 to 12 mph.

In spring 2016, wind direction was more variable than in fall survey seasons both within and among survey days. Wind speeds ranged from calm (0 mph) to strong (13-18 mph), and sky conditions were clear to overcast. The two days with the highest passage rate, May 18 (3.38 raptors/hr), and 13 April (2.42 raptors/hr) had variable wind speeds, partly cloudy skies, and the presence of a high pressure system. On 18 May, winds from the south (following), and on 13 April, winds were from various directions. The day with the third highest passage rate, 8 June (2.26 raptors/hr), had winds from the north that were moderately high (9-18 mph), overcast skies, and the presence of a low pressure system. Survey days with the lowest passage rates had northerly winds.

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Table 3-7. Wind and sky conditions with daily passage rates, Downeast Wind Project, 2015-2016.

Date	Wind direction	Wind speed code (s)	Daytime Pressure System and Sky Conditions	Daily Passage Rate
Fall 2015				
9/9	SW	2	Low pressure in AM with high pressure in PM	1.25
9/10	N	2	variable with clear to overcast skies throughout the day	0.88
9/16	NW	2, 3	High pressure with clear skies	6.45
9/17	W	1, 2 ,3	High pressure with clear skies	11.61
9/21	NE	3	High pressure with clear skies	11.74
9/24	NW	2, 3	High pressure with clear skies	8.80
10/1	NE	3	Low pressure with overcast skies	5.79
10/2	NE	3	Low pressure in AM with high pressure in PM	3.17
10/5	NE	1	High pressure with clear to partially cloudy skies	2.90
10/6	N	1	High pressure in AM with low pressure in the evening	3.57
10/14	SW	2, 3	High pressure with clear to partially cloudy skies	1.57
10/15	NW	2, 3	High pressure with clear skies	2.57
10/20	SW	2, 3	Low pressure in AM with high pressure in PM	0.71
10/21	N	2	High pressure with clear skies	1.33
10/27	W	1, 2	High pressure with clear skies	0.77
10/28	SE	1, 2	variable with clear to overcast skies throughout the day	2.31
11/3	S	2, 3	variable with clear to overcast skies throughout the day	0.31
11/4	NW	2	High pressure with clear to partially cloudy skies	0.00
11/10	NW	0, 1	High pressure with clear skies	0.38
11/11	NE	2	Low pressure with overcast skies	0.19
11/16	WNW	1, 2	Low pressure with partially cloudy to overcast skies	0.76
11/17	N	1, 2	High pressure with clear to partially cloudy skies	0.00
11/24	NE	2, 3	High pressure with clear skies	0.20
11/25	NW	1	High pressure with clear skies	0.20
Fall 2016				
8/2	E	0,1	High pressure, clear to partly cloudy	1.22
8/3	SE	0,1,2	High pressure, clear to partly cloudy	0.44
8/10	SW	2,3,4,5	High pressure, partly cloudy to overcast with showers in late afternoon	0.80
8/11	SW	2,3	High pressure, partly cloudy to overcast with showers in late afternoon	1.26
8/15	ENE	1,2,3	High pressure, early morning fog, partly to mostly cloudy	1.29
8/16	SW	1,2	Low pressure, partly cloudy, storms moving in after survey	0.47
8/23	NW	2,3	High pressure, clear to partly cloudy	0.82
8/24	W	1	High pressure, clear skies	1.53
8/30	SW	0,1,2	High pressure, partly cloudy	1.09
8/31	SW	0,1	High pressure, partly cloudy	0.73
9/6	W	0,1	Low pressure, mostly cloudy to overcast	0.13
9/7	NE	1,2,3,4	Low pressure, high pressure moving in, partly cloudy to overcast	0.13
9/13	SW	1,2,3	High pressure, clear skies	1.25
9/15	N	1,2,3	High pressure, clear to partly cloudy	0.77
9/21	NW	1,2	High pressure, clear skies	1.33
9/22	NW	1,2	High pressure, clear skies	1.87
9/29	NE	2	High pressure, partly cloudy	0.69
9/30	NNE	1,2,3	High pressure, early morning mist, partly cloudy	3.03
10/4	W	0,1	High pressure, clear skies	0.43
10/5	W	0,1	High pressure, clear skies	0.29
10/13	SW	1,2	Low pressure, partly cloudy to overcast	0.14
10/14	N	3	High pressure, clear skies	1.14
10/18	SE	1,2	High pressure, partly cloudy to overcast	0.43
10/19	NW	1,2,3	Low pressure moving in, clear to partly cloudy	1.04
10/25	NW	2,3	Low pressure, partly cloudy, occasional light rain	0.15
10/26	N	1,2	Low pressure, partly cloudy to overcast	0.15
10/31	N	2	High pressure, overcast	0.48
11/1	VAR	0,1	High pressure, clear to partly cloudy	0.48
11/9	N	0,1,2	High pressure, partly cloudy	0.00
11/10	NW	0,1,2	High pressure, clear to partly cloudy	0.38
11/14	W	0,1	High pressure, clear skies	0.20
11/15	NE	0,1	High pressure, overcast	0.00
11/21	NW	0,1,2	Low pressure, partly cloudy to overcast, occasional light rain	0.00
11/22	N	1,2	Low pressure, partly cloudy, snow on ground	0.20
Spring 2016				
3/1	NW	3, 4	High pressure with clear to partially cloudy skies	0.32
3/4	NW	1, 2	High pressure in AM with low pressure in PM	0.31
3/8	N, NW	2	Low pressure in AM with high pressure in PM	0.92
3/9	S, SW	2, 3	Low pressure with overcast skies	0.92
3/18	N, NE	2	Low pressure with overcast skies and periods of snow showers	0.39
3/19	NW	2, 3	High pressure with clear skies	0.77
3/23	N	1, 2	Low pressure in AM with high pressure in PM	1.16
3/24	N, NE	1	Low pressure with overcast skies	0.26
3/30	S, SW	1, 2, 3, 4	High pressure with partially cloudy skies	3.38
3/31	SSW	3, 4	Low pressure with overcast skies	2.25
4/4	W	1, 2, 3	Low pressure with partially cloudy to overcast skies	0.88
4/5	N, NW	3	High pressure with partially cloudy skies	0.25
4/13	N, Variable	0, 1, 2	High pressure with clear to partially cloudy skies	2.42
4/14	NE	2	High pressure with clear to partially cloudy skies	1.33
4/18	N, NE	1, 2, 3	Low pressure with partially cloudy to overcast skies	0.61
4/20	N	1	High pressure with partially cloudy skies	0.12
4/28	NW	2, 3	High pressure with partially cloudy skies	1.53
5/1	SSW	1	High pressure in AM with low pressure in PM	0.61
5/4	E	2	Low pressure with partially cloudy to overcast skies	1.14
5/6	NNE	2, 3	Low pressure in AM with high pressure in PM	0.91
5/9	W	3	Low pressure with partially cloudy to overcast skies	0.47
5/10	WNW	2	High pressure with partially cloudy skies	0.94
5/17	W	3	High pressure with partially cloudy skies	0.78
5/18	NW	1, 2, 3	High pressure with partially cloudy skies	0.00
5/23	NE	1, 2, 3	Low pressure in early AM, high pressure during day, low pressure in late PM	0.44
5/25	S	0, 1, 3	Low pressure in AM with high pressure in PM	0.33
6/1	E, NE	1, 2	High pressure with partially cloudy skies	0.86
6/2	SE	1, 2	High pressure with partially cloudy skies	0.65
6/7	S	1, 2, 3	Low pressure with periods of drizzle, rain, and fog	1.64
6/8	N, NW	3, 4	Low pressure with partially cloudy to overcast skies	2.26
6/14	NNW	4	Low pressure with overcast skies	0.54
6/16	NW	3	High pressure with partially cloudy skies	0.32
Wind Speed codes 1 = 1-3 mph; **2** = 4-8 mph; **3** = 9-12 mph; **4** = 13-18 mph; **5** = 19-24 mph				

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3.2 RAPTOR USE SURVEYS

3.2.1 Survey Effort and Results Summary

Table 3-8 shows a summary of the survey effort and results for raptor use surveys in fall 2015, spring 2016, and fall 2016.

Table 3-8. Raptor use survey effort and results summary, Downeast Wind Project, 2015-2016.

	Fall 2015		Fall 2016		Spring 2016	
	Migration Count Survey	Raptor Use Survey	Migration Count Survey	Raptor Use Survey	Migration Count Survey	Raptor Use Survey
Range of survey dates	9/9-11/25	9/16-11/18	8/2-11/22	8/16-9/7	3/1-6/16	3/3-6/15
No. survey days	24	4	34	4	32	10
No. survey hours	160	24	245	22	265.5	40
No. raptor species observed	9	4	13	4	12	6
Total no. observations of raptors	499	35	292	8	249	32
Mean no. raptor observations/hour	3.12	1.46	0.77	0.36	0.94	0.80
Total no. of observations of raptors below 183 m height (% total raptor obs)	268 (90%)	26 (74%)	159 (86%)	5 (63%)	183 (73%)	26 (81%)

Wind direction during the fall 2015 and fall 2016 surveys was primarily from the north (following), and wind direction during the spring 2016 surveys was variable. Wind speeds ranged from calm (0 mph to strong (19-24 mph) with speeds primarily in the 4-12 mph range. Sky conditions were most often clear to partly cloudy with a few overcast days. The day with the highest passage rate, 2 May (3.00 raptors/hr), was mostly cloudy and a low pressure system was present (Table 3-9).

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Table 3-9. Wind and sky conditions with daily passage rates during raptor use surveys, Downeast Wind Project, 2015-2016.

Date	Wind Direction	Wind Speed Code (s)	Daytime Pressure System and Sky Conditions	Daily Passage Rate
Fall 2015				
9/16	variable	1, 2, 3	high pressure with clear skies	1.43
10/5	NE	1, 2	high pressure, clear to partly cloudy	2.33
10/26	NW	2, 3	high pressure, clear to partly cloudy	0.50
11/18	NE	1	high pressure with clear skies	1.17
Fall 2016				
8/16	NW	0, 1, 2	high pressure with overcast skies	0.38
8/17	W, NW	2, 3, 4	low pressure, mostly cloudy	0.67
9/6	NW	0, 1	low pressure, mostly cloudy to overcast	0.11
9/7	W	1, 2	low pressure, mostly cloudy	0.00
Spring 2016				
3/3	W	5	high pressure with clear skies	0.50
3/4	N, E	1, 3	high pressure, clear to partly cloudy	0.00
3/22	WNW	4	clear skies	0.33
4/14	N	2, 3	high pressure, clear to partly cloudy	0.33
4/15	NNE	4	high pressure with clear skies	2.00
5/2	SE	3	low pressure, mostly cloudy	3.00
5/4	NE	1, 2	low pressure, partly to mostly cloudy	0.33
5/23	N, NE	1, 2, 3	low pressure, mostly cloudy to overcast	0.67
6/14	NW	2, 3	low pressure, partly to mostly cloudy	0.50
6/15	NE, NW	0, 1, 2	high pressure with overcast skies	0.63
Wind Speed Codes: 1 = 1-3 mph; **2** = 4-8 mph; **3** = 9-12 mph; **4** = 13-18 mph; **5** = 19-24 mph				

3.2.2 Raptor Observations

3.2.2.1 Observations of Species

The species with the greatest number of observations in fall 2015 were broad-winged hawk (n = 9, 26%), followed by turkey vulture (n = 8, 23%; Figure 3-5, Appendix B Table 1). The species with the greatest observations in fall 2016 was turkey vulture (n = 5, 63%). The species with the greatest observations in spring 2016 was turkey vulture (n = 16, 50%) followed by bald eagle (n = 6, 19%).

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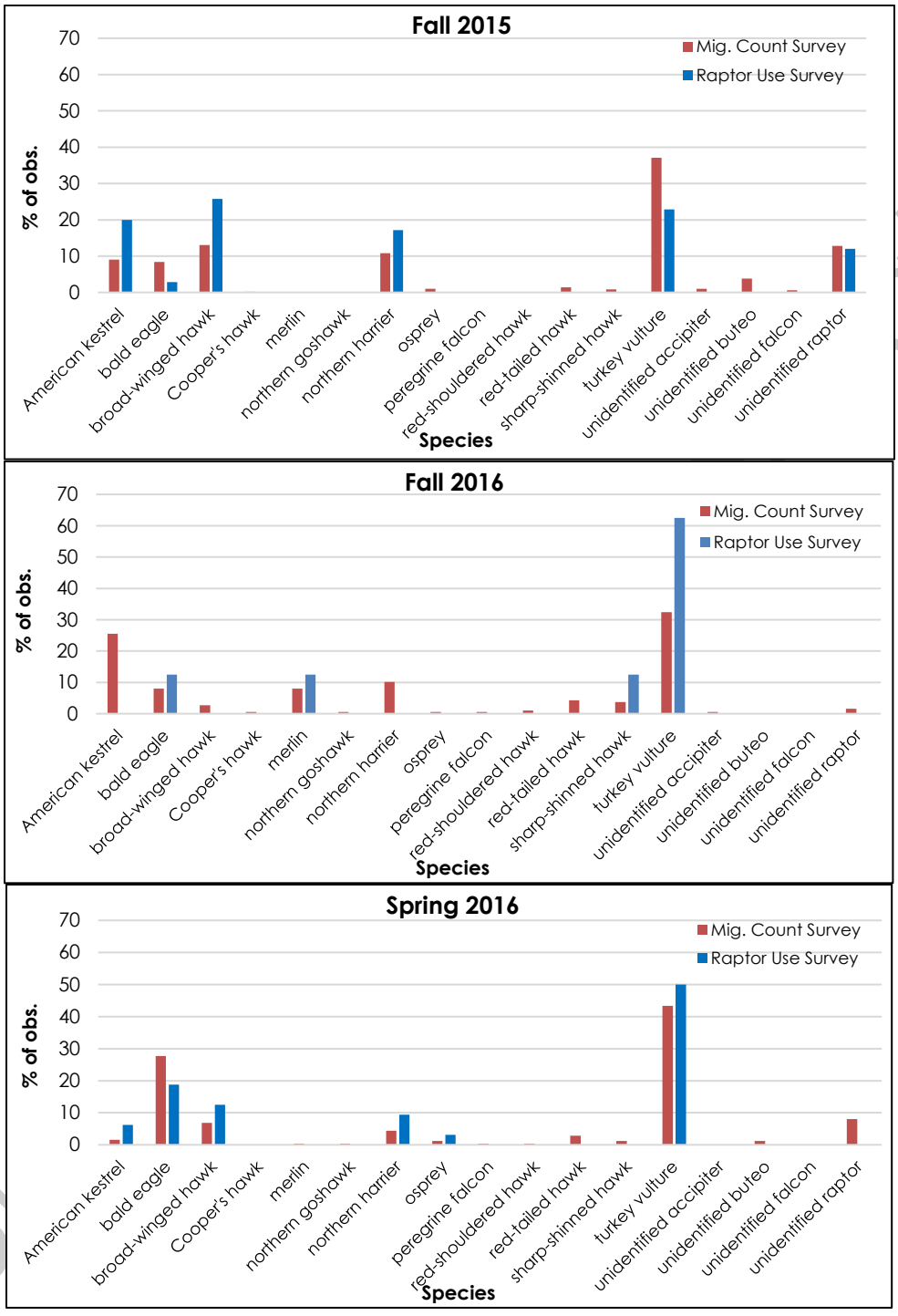


Figure 3-5. Species observed (% of total) during raptor migration and raptor use surveys for three raptor seasons, Downeast Wind Project, 2015-2016.

3.2.2.2 Daily Passage Rates

Daily passage rates ranged from 0.50 to 2.33 raptors/hr in fall 2015, from 0.00 to 0.67 raptors/hr in fall 2016, and from 0.00 to 3.00 raptors/hr in spring 2016 (Figure 3-6, Appendix B Table 2).

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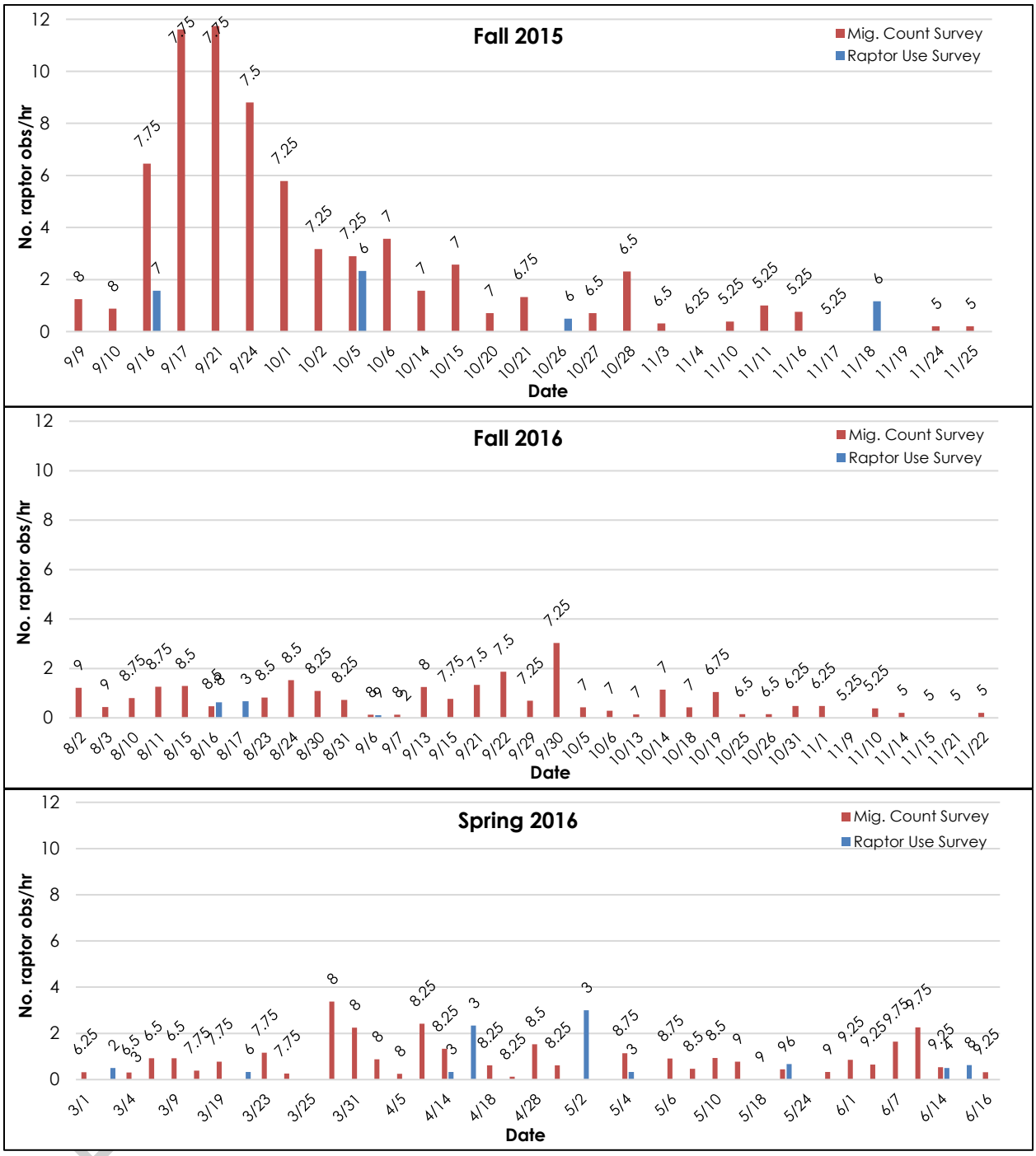


Figure 3-6. Daily observation rates and number of survey hours (numerically represented) during raptor migration and raptor use surveys, Downeast Wind Project, 2015-2016.

3.2.2.3 Overall Observation Rates

Fall 2015 had the highest overall observation rates for both raptor migration count surveys (n = 3.12) and raptor use surveys (n = 1.46) (Figure 3-7, Appendix B Table 2).

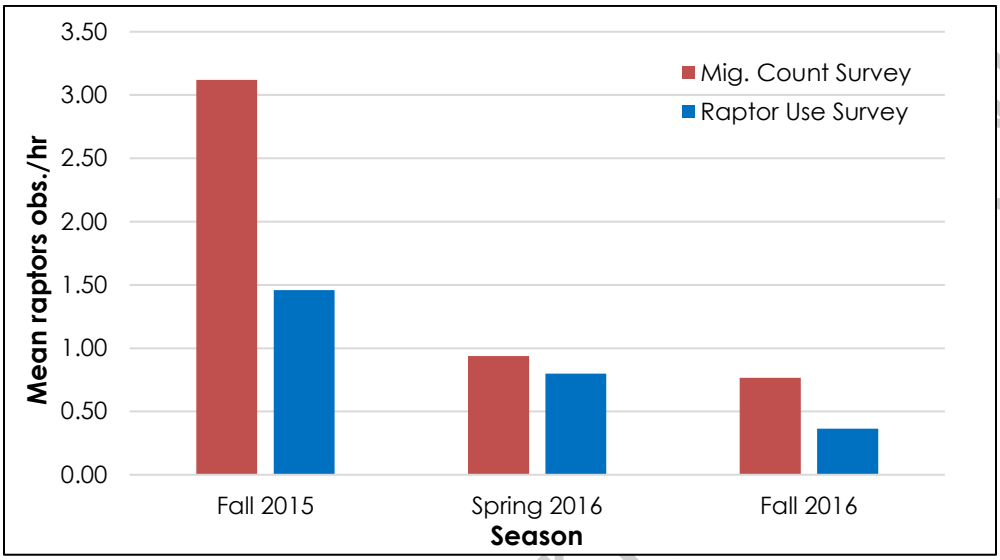


Figure 3-7. Overall raptor observation rates per study, Downeast Wind Project, 2015-2016.

4.0 DISCUSSION

The two fall survey seasons had similar periods of peak activity occurring in September and activity tapering off in November. The seasonal passage rate in fall 2015 was higher than in fall 2016, largely due to the observation of broad-winged hawk kettles (i.e., groups of birds circling in a thermal updraft). Seasonal and yearly variation in raptor migration timing, location, and species composition is common and dependent upon a variety of stochastic factors.

In general, the seasonal average passage rate for all seasons was within the range of results at proposed wind projects in Maine, New Hampshire, and Vermont (0.68–12.70 raptors/hr in the fall, and 0.5-6.78 raptors/hr in the spring (Appendix A Tables 7, 8). Species detected during each seasonal survey are species regularly observed in the region, with turkey vultures being the species most commonly observed during all three seasons.

The percentage of observations below 183 m ranged from 54% (n = 268) in fall 2015 to 85% (n = 159) in fall 2016, with turkey vultures, American kestrels, and northern harries flying at lower heights relative to other birds. The seasonal average percent below turbine height for all seasons is within the range of results at proposed wind projects in Maine, New Hampshire, and Vermont (21–100%) (Appendix A Tables 7, 8).

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Based on behaviors of raptors during the migration surveys conducted at DOW, some raptors appeared to be making localized movements evidenced by behaviors such as aerial displays, perching or foraging. These individuals could have been resident birds or birds stopping over during migration. American kestrel and northern harrier were observed foraging from the 2015 survey location inside the Project area. This is expected due to the blueberry and field habitats proximal to this location. Species observed from the 2016 survey location that were foraging were greater in number, likely due to the presence of more diverse habitats (e.g., pond, intact forest) providing a broader assemblage of prey species and habitat for forest-breeding raptors (e.g., sharp-shinned hawk, northern goshawk, red-shouldered hawk) proximal to the 2016 survey location.

More bald eagles were observed in spring 2016 at offsite location than in either fall season. Only one occurrence of eagles exhibiting an aerial display was observed from the 2015 raptor survey location; all others were observed from the 2016 raptor survey location outside the Project area.

Northern harriers made up a relatively large proportion of individuals observed in all three seasons, though considering the timing of these observations and the fact that blueberry fields are known foraging habitats for the species, it is likely that many harrier observations were of the same individual(s). No northern harriers exhibited territorial displays as observed from the 2015 raptor migration survey location in the Project area, and no northern harrier nests were observed in the Project area during raptor surveys.

Weather and wind influence raptor migration paths and flight heights. Wind, air temperature, and cloud cover influence the development of updrafts and thermals used by raptors making long-distance flights. In both fall 2015 and fall 2016, the days with the highest passage rate (21 September 2015 and 30 September 2016) were characterized as clear days with the presence of a high pressure system and moderate northwest winds. In spring 2016, on the day with the highest passage rate (30 March), a high pressure system was present and winds were variable winds and from the south and southwest. Generally, days with lower passage rates were days when a low pressure system was present.

Species composition was similar for raptor migration surveys and raptor use surveys during all three seasons. Overall passage rates for both survey types were highest in fall 2015, and lowest in fall 2016. Raptor migration surveys had higher daily and seasonal passage rates than raptor use surveys. This is likely due to a greater survey effort (i.e., more survey hours) for raptor migration surveys, and the observance of groups of migrants.

5.0 CONCLUSIONS

Raptor surveys conducted during spring (1 year) and fall (2 years) effectively characterized the levels and timing of raptor migratory activity at DOW. Patterns in raptor migration and use at the Project are consistent with those documented at other wind projects, and species composition was as expected based on the region and habitats present in the Project area. Raptors

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observed making localized movements exhibited various behaviors including perching, aerial displays and foraging. Foraging species observed from the raptor migration survey location inside the Project area included northern harrier and American kestrel.

Raptors are thought to be more at risk of collision during localized movements (Smallwood et al. 2009, Katzner et al. 2012); however, avoidance has been documented at operational wind projects. Avoidance rates estimated using the 'Band Model' (Madders and Whitfield 2006) for geese and raptor species at several existing wind farms in the U.S. were estimated at greater than 95%(Fernley et al. 2006). Avoidance of turbines at a fine scale, i.e., individual birds slightly altering their flight paths while flying between turbines to avoid colliding with blades, has been documented during fatality monitoring or targeted post-construction raptor surveys at Maine projects (Stantec 2009, 2013, 2014, 2015; Tetra Tech 2013) and projects in other areas (Chamberlain et al. 2006; Sharp et al. 2010). Yet very few raptor fatalities have been documented in the Northeast and in Maine (4 fatalities, recorded in 10 years of operating projects), likely due to such avoidance behavior. Because raptor activity at DOW is similar to that recorded at operating wind projects in Maine, and raptor fatalities at these projects have been very rare, raptor fatalities at DOW are expected to be uncommon. Monitoring of collision mortality is recommended to confirm this conclusion.

6.0 LITERATURE CITED

Chamberlain, D. E., M. R. Rehfisch, A. D. Fox, M. Desholm, and S. J. Anthony. 2006. The effect of avoidance rates on bird fatality predictions made by wind turbine collision risk models. Ibis: 148: 198–202.

Katzner, T. E., D. Brandes, T. Miller, M. Lanzone, C. Maisonneuvre, J. A. Tremblay, R. Mulvihill and G. T. Merovich Jr. 2012. Topography drives migratory flight altitude of golden eagles: implications for on-shore wind energy development. Journal of Applied Ecology 49: 1178–1186.

Fernley, J., Lowther, S., and Whitfield P. 2006. A review of goose collisions at operating wind farms and estimation of the goose avoidance rate. Unpublished Report by West Coast Energy, Hyder Consulting and Natural Research.

Madders, M. and D. P. Whitfield. 2006. Upland raptors and the assessment of wind farm impacts. Ibis 148(s1): 43-56.

Maine Department of Inland Fisheries & Wildlife (MDIFW). 2013a. Species of Special Concern. http://www.maine.gov/ifw/wildlife/endangered/specialconcern.htm. Accessed 03 March 2017.

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MDIFW. 2013b. State List of Endangered and Threatened Species. http://www.maine.gov/ifw/wildlife/endangered/specialconcern.htm. Accessed 03 March 2017

MDFIW. June 2015. Curtailment Policy and Wind Power Pre-Construction Study Recommendations.

Sharp, L., C. Herrmann, R. Friedel, K. Kosciuch and R. MacIntosh. 2010. Comparison of pre-and post-construction bald eagle use at the Pillar Mountain wind project, Kodiak, Alaska, Spring 2007 and 2010. Presentation for the National Wind Coordinating Collaborative, Wind Wildlife Research Meeting VIII, October 19-20, 2010, Lakewood, Colorado. Accessed online October 2013 at: http://www.nationalwind.org/assets/research_meetings/Research_Meeting_VIII_Sharp.pdf.

Smallwood, K. S., L. Rugge and M. L. Morrison. 2009. Influence of behavior on bird mortality in wind energy developments. Journal of Wildlife Management 73: 1082–1098.

Stantec [Stantec Consulting]. 2010. Stetson I Mountain Wind Project Year 1 Post-Construction Monitoring Report, 2009. Prepared for First Wind Management, LLC.

Stantec. 2013. Rollins Wind Project Post-Construction Monitoring Report, 2012. Prepared for First Wind Management, LLC.

Stantec. 2014. Record Hill Wind Project Post-Construction Monitoring Report, 2012. Prepared for Record Hill Wind LLC.

Stantec. 2015. Record Hill Wind Project Year 2 Post-Construction Wildlife Monitoring Report, 2014. Prepared for Record Hill Wind LLC and Wagner Forest Management, Ltd.

Stantec. 2016. Work Plan for 2016 Bird and Bat Surveys – Proposed Downeast Wind Project. Prepared for Apex Clean Energy, Inc. March 17, 2016.

Tetra Tech. 2013. Spruce Mountain Wind Project Post-Construction Bird and Bat Fatality and Raptor Monitoring. Year 1 Annual Report. Prepared for Patriot Renewables and Spruce Mountain Wind.U.S. Fish and Wildlife Service (USFWS). March 2012. *Land-based Wind Energy Guidelines.*

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Appendix A RAPTOR MIGRATION PHOTOS, TABLES



Appendix A Figure 1. View from Observation Site; South (top left), East (top right), North (bottom left), West (bottom right), Downeast Wind Project, Fall 2015.

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Appendix A Figure 2. View from Observation Site; East (top left), North (top right), South (bottom left), West (bottom right), Downeast Wind Project, Spring 2016.

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Appendix A Figure 3. View from Relocated Observation Site; West (top left), South (top right), East (bottom left), North (bottom right), Downeast Wind Project, Fall 2016.

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Appendix A Table 1. Daily Observations of Raptor Species and Daily Passage Rates, Downeast Wind Project, Fall 2015

Species	9/9	9/10	9/16	9/17	9/21	9/24	10/1	10/2	10/5	10/6	10/14	10/15	10/20	10/21	10/27	10/28	11/3	11/4	11/10	11/11	11/16	11/17	11/24	11/25	TOTAL
American kestrel		1	12	9	8	6	4		2	2	1														**45**
bald eagle		1		4	3	5	3	1	3	1	1	3		1		15					1				**42**
broad-winged hawk		1	1	20	27	11						2									3				**65**
Cooper's hawk			1																						**1**
northern harrier	2	3	5	6	1	7	1	3	2	5	2	3	2	3	2		2		2	1			1	1	**54**
osprey			1	3		1																			**5**
red-tailed hawk			2	2	1						2														**7**
sharp-shinned hawk								2							2										**4**
turkey vulture	7		12	28	43	20	29	14	7	12	3	6	2	2											**185**
unidentified accipiter			1	1		2			1																**5**
unidentified buteo			2	3	3	7	3					1													**19**
unidentified falcon		1							2																**3**
unidentified raptor	1		13	14	5	7	2	3	4	5	2	3	1	3	1										**64**
Total	**10**	**7**	**50**	**90**	**91**	**66**	**42**	**23**	**21**	**25**	**11**	**18**	**5**	**9**	**5**	**15**	**2**	**0**	**2**	**1**	**4**	**0**	**1**	**1**	**499**
Passage Rate	**1.25**	**0.88**	**6.45**	**11.61**	**11.74**	**8.80**	**5.79**	**3.17**	**2.90**	**3.57**	**1.57**	**2.57**	**0.71**	**1.33**	**0.77**	**2.31**	**0.31**	**0.00**	**0.38**	**0.19**	**0.76**	**0.00**	**0.20**	**0.20**	**3.12**

Appendix A Table 2. Daily Observations of Raptor Species and Daily Passage Rates, Downeast Wind Project, Fall 2016

Species	8/2	8/3	8/10	8/11	8/15	8/16	8/23	8/24	8/30	8/31	9/6	9/7	9/13	9/15	9/21	9/22	9/29	9/30	10/5	10/6	10/13	10/14	10/18	10/19	10/25	10/26	10/31	11/1	11/9	11/10	11/14	11/15	11/21	11/22	Total
American kestrel	4		1				2	1	1	1			6	2	3	9	2	3	3	1			3	2	1		2	1							**48**
bald eagle	1		1		1	1							1	1	1			3				3						1		1					**15**
broad-winged hawk		1								2		1				1																			**5**
Cooper's hawk																		1																	**1**
merlin	3	2			1		1	2	2		1				2									1											**15**
northern goshawk								1																											**1**
northern harrier							1	2	3				2	1				2		1				3		1		1			1			1	**19**
osprey																								1											**1**
peregrine falcon																														1					**1**
red-shouldered hawk														1													1								**2**
red-tailed hawk				1			2		2	1							1	1																	**8**
sharp-shinned hawk			2	1	3											1																			**7**
turkey vulture	3	1	3	9	6	3	1	7	1	2			1	1	4	2	2	10				5													**61**
unidentified accipiter																					1														**1**
unidentified hawk																1		2																	**3**
Total	**11**	**4**	**7**	**11**	**11**	**4**	**7**	**13**	**9**	**6**	**1**	**1**	**10**	**6**	**10**	**14**	**5**	**22**	**3**	**2**	**1**	**8**	**3**	**7**	**1**	**1**	**3**	**3**	**0**	**2**	**1**	**0**	**0**	**1**	**188**
Passage Rate	**1.22**	**0.44**	**0.80**	**1.26**	**1.29**	**0.47**	**0.82**	**1.53**	**1.09**	**0.73**	**0.13**	**0.13**	**1.25**	**0.77**	**1.33**	**1.87**	**0.69**	**3.03**	**0.43**	**0.29**	**0.14**	**1.14**	**0.43**	**1.04**	**0.15**	**0.15**	**0.48**	**0.48**	**0.00**	**0.38**	**0.20**	**0.00**	**0.00**	**0.20**	**0.77**

Appendix A Table 3. Daily Observations of Raptor Species and Daily Passage Rates, Downeast Wind Project, Spring 2016

Species	3/1	3/4	3/8	3/9	3/18	3/19	3/23	3/24	3/30	3/31	4/4	4/5	4/13	4/14	4/18	4/20	4/28	5/1	5/4	5/6	5/9	5/10	5/17	5/18	5/23	5/25	6/1	6/2	6/7	6/8	6/14	6/16	TOTAL
American kestrel														1			1					1									1		**4**
bald eagle	1		4		1	2	4	2	24	4	4		2	1	2		7	1	1	4		2			1					1		1	**69**
broad-winged hawk																		1	4			4	2						3	3			**17**
merlin																													1				**1**
northern goshawk					1																												**1**
northern harrier	1				1					1	1			1	1			1			1		1					1			1		**11**
osprey															1								1				1						**3**
peregrine falcon				1																													**1**
red-shouldered hawk														1																			**1**
red-tailed hawk				1									3	2						1													**7**
sharp-shinned hawk													1	1			1																**3**
turkey vulture				2		2	3		1	7	1	2	12	4	1	1	4	2	5	3	3	1	3		3	3	7	5	12	16	3	2	**108**
unidentified buteo							2																							1			**3**
unidentified raptor		2	2	2		2			2	6	1		2																	1			**20**
Total	**2**	**2**	**6**	**6**	**3**	**6**	**9**	**2**	**27**	**18**	**7**	**2**	**20**	**11**	**5**	**1**	**13**	**5**	**10**	**8**	**4**	**8**	**7**	**0**	**4**	**3**	**8**	**6**	**16**	**22**	**5**	**3**	**249**
Passage Rate	**0.32**	**0.31**	**0.92**	**0.92**	**0.39**	**0.77**	**1.16**	**0.26**	**3.38**	**2.25**	**0.88**	**0.25**	**2.42**	**1.33**	**0.61**	**0.12**	**1.53**	**0.61**	**1.14**	**0.91**	**0.47**	**0.94**	**0.78**	**0.00**	**0.44**	**0.33**	**0.86**	**0.65**	**1.64**	**2.26**	**0.54**	**0.32**	**0.94**

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Appendix A Table 4. Hourly Summary of Raptor Observations by Species, Downeast Wind Project, Fall 2015, Fall 2016, Spring 2016

	Fall 2015										Fall 2016										Spring 2016									
Species	9:00-10:00	10:00-11:00	11:00-12:00	12:00-1:00	1:00-2:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	9:00-10:00	10:00-11:00	11:00-12:00	12:00-1:00	1:00-2:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	9:00-10:00	10:00-11:00	11:00-12:00	12:00-1:00	1:00-2:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00
American kestrel	2	4	6	5	7	7	8	6			11	1	8	6	6	6	2	6	2					1	1		1	1		
bald eagle	2	6	15	6	6	4	3				2	2	3	5	1		1	1			6	14	6	8	10	10	11	4		
broad-winged hawk	23	15	17		1	9					2	1		1	1						2	2	4	5	2		1	1		
Cooper's hawk								1				1																		
merlin											2	3	1			2	2	5										1		
northern goshawk											1													1						
northern harrier	9	6	10	5	10	5	6	3			3	3	2	1	3	3	3		1			3				1	3	4		
osprey		3	2												1							1			1			1		
peregrine falcon															1						1									
red-shouldered hawk											1	1										1								
red-tailed hawk		5		1	1						1			3	1	2	1					1		1	3	1	1			
sharp-shinned hawk	2					2								2	5							1		2						
turkey vulture	16	55	26	34	7	26	17	4			3	7	13	14	13	3	7	1			19	11	13	18	10	7	18	6	3	3
unidentified accipiter		3	1	1												1														
unidentified buteo		5	6	5		2	1																					2		1
unidentified falcon	1	1			1																									
unidentified raptor	4	19	11	11	12	2	4	1						1		1	1				2	4	8		2	2	2			
TOTAL	**59**	**122**	**94**	**68**	**45**	**57**	**39**	**15**	**0**	**0**	**26**	**19**	**27**	**33**	**32**	**18**	**17**	**13**	**3**	**0**	**30**	**38**	**31**	**36**	**29**	**21**	**37**	**20**	**3**	**4**
TOTAL NO. SURVEY HOURS	**24**	**24**	**24**	**24**	**24**	**19**	**15.5**	**5.5**	**0**	**0**	**34**	**34**	**34**	**34**	**34**	**28.5**	**25.25**	**15.3**	**6**	**0**	**32**	**32**	**32**	**32**	**32**	**32**	**29.8**	**27**	**14.25**	**2.5**

Appendix A Table 5. Summary of Average Minimum Flight Heights of Species, Downeast Wind Project, Fall 2015, Fall 2016, Spring 2016

	Fall 2015					Fall 2016							Spring 2016						
	Minimum height 183 m or greater		Minimum height less than 183 m		Total Obs.	Minimum height 183 m or greater		Minimum height less than 183 m		Height not recorded		Total Obs.	Minimum height 183 m or greater		Minimum height less than 183 m		Height not recorded		Total Obs.
Species	No. Obs	% Obs	No. Obs	% Obs		No. Obs	% Obs	No. Obs	% Obs	No. Obs	% Obs		No. Obs	% Obs	No. Obs	% Obs	No. Obs	% Obs	
American kestrel	n/a	n/a	45	100.0	45	1	2.1	47	97.9	n/a	n/a	48	n/a	n/a	4	100.0	n/a	n/a	4
bald eagle	21	50.0	21	50.0	42	4	26.7	10	66.7	1	6.7	15.0	19	27.5	48	69.6	2	2.9	69
broad-winged hawk	38	58.5	27	41.5	65	n/a	n/a	5	100.0	n/a	n/a	5	1	5.9	16	94.1	n/a	n/a	17
Cooper's hawk	n/a	n/a	1	100.0	1	n/a	n/a	1	100.0	n/a	n/a	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
merlin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	15	100.0	n/a	n/a	15	n/a	n/a	1	100.0	n/a	n/a	1
northern goshawk	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1	100.0	n/a	n/a	1	n/a	n/a	1	100.0	n/a	n/a	1
northern harrier	3	5.6	51	94.4	54	4	21.1	15	78.9	n/a	n/a	19	n/a	n/a	11	100.0	n/a	n/a	11
osprey	2	40.0	3	60.0	5	n/a	n/a	1	100.0	n/a	n/a	1	1	33.3	2	66.7	n/a	n/a	3
peregrine falcon	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1	100.0	n/a	n/a	1	n/a	n/a	1	100.0	n/a	n/a	1
red-shouldered hawk	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2	100.0	n/a	n/a	2	n/a	n/a	1	100.0	n/a	n/a	1
red-tailed hawk	4	57.1	3	42.9	7	4	50.0	4	50.0	n/a	n/a	8	1	14.3	6	85.7	n/a	n/a	7
sharp-shinned hawk	n/a	n/a	4	100.0	4	1	14.3	6	85.7	n/a	n/a	7	n/a	n/a	3	100.0	n/a	n/a	3
turkey vulture	96	51.9	89	48.1	185	11	18.0	50	82.0	n/a	n/a	61	29	26.9	76	70.4	3	2.8	108
unidentified accipiter	2	40.0	3	60.0	5	n/a	n/a	1	100.0	n/a	n/a	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
unidentified buteo	13	68.4	6	31.6	19	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2	66.7	1	33.3	n/a	n/a	3
unidentified falcon	2	66.7	1	33.3	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
unidentified raptor	50	78.1	14	21.9	64	3	100.0	n/a	n/a	n/a	n/a	3	8	40.0	12	60.0	n/a	n/a	20
TOTAL	**231**	**46.3**	**268**	**53.7**	**499**	**28**	**14.9**	**159**	**84.6**	**1**	**0.5**	**188**	**61**	**24.5**	**183**	**73.5**	**5**	**2.0**	**249**
Percent of Total Observations	**46.3%**		**53.7%**			**14.9%**		**84.6%**		**0.5%**			**24.5%**		**73.5%**		**2.0%**		
Average minimum flight height (m)	**179**					**70**							**117**						

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Appendix A Table 6. Summary of Aerial Flight and Foraging Behaviors During Raptor Migration Surveys, Downeast Wind Project, Fall 2015, Fall 2016, Spring 2016

Date	Time	Species	Number of Individuals	Age (J, SA, or A)	Below turbine height (183m) for at least a portion of flight? (Y/N)	Minimum height (m)	time over turbine area and BELOW turbine height	Behavior Type	Behavior Notes
9/9/2015	1:00-2:00	northern harrier	1	A	Y	10	0:02:00	foraging	hunting
9/9/2015	2:00-3:00	northern harrier	1	A	Y	10	0:02:00	foraging	hunting
9/10/2015	9:00-10:00	northern harrier	1	A	Y	5	0:00:30	foraging	
9/10/2015	10:00-11:00	American kestrel	1	A	Y	10	0:00:30	foraging	
9/10/2015	11:00-12:00	northern harrier	1	A	Y	5	0:02:00	foraging	
9/10/2015	1:00-2:00	northern harrier	1	A	Y	5	0:00:30	foraging	
9/16/2015	10:00-11:00	American kestrel	1	A	Y	1	no data	foraging	
9/16/2015	11:00-12:00	American kestrel	1	A	Y	1	no data	foraging	
9/16/2015	11:00-12:00	American kestrel	1	A	Y	1	no data	foraging	
9/16/2015	1:00-2:00	American kestrel	1	A	Y	1	no data	foraging	
9/16/2015	1:00-2:00	northern harrier	1	A	Y	1	no data	foraging	
9/16/2015	1:00-2:00	American kestrel	1	A	Y	1	no data	foraging	
9/16/2015	1:00-2:00	northern harrier	1	A	Y	1	no data	foraging	
9/16/2015	2:00-3:00	American kestrel	1	A	Y	1	no data	foraging	
9/16/2015	2:00-3:00	northern harrier	1	A	Y	1	no data	foraging	
9/16/2015	2:00-3:00	American kestrel	1	A	Y	1	no data	foraging	
9/16/2015	4:00-5:00	northern harrier	1	U	Y	25	no data	foraging	
9/17/2015	10:00-11:00	northern harrier	1	U	Y	25	no data	foraging	
9/17/2015	1:00-2:00	unidentified hawk	1	A	Y	25	no data	foraging	
9/17/2015	1:00-2:00	northern harrier	1	A	Y	25	no data	foraging	
9/17/2015	1:00-2:00	American kestrel	1	A	Y	25	no data	foraging	
9/17/2015	1:00-2:00	northern harrier	1	U	Y	25	no data	foraging	
9/17/2015	4:00-5:00	American kestrel	2	U	Y	25	no data	foraging	
9/21/2015	11:00-12:00	American kestrel	1	A	Y	25	no data	foraging	
9/21/2015	12:00-1:00	American kestrel	1	A	Y	25	no data	foraging	
9/21/2015	12:00-1:00	American kestrel	2	U	Y	25	no data	foraging	
9/21/2015	1:00-2:00	northern harrier	1	U	Y	25	no data	foraging	
9/21/2015	1:00-2:00	American kestrel	1	U	Y	25	no data	foraging	
9/21/2015	2:00-3:00	American kestrel	1	U	Y	25	no data	foraging	
9/24/2015	9:00-10:00	northern harrier	1	U	Y	25	0:01:00	foraging	
9/24/2015	9:00-10:00	northern harrier	1	A	Y	25	0:02:00	foraging	
9/24/2015	10:00-11:00	American kestrel	2	U	Y	25	0:04:30	foraging	
9/24/2015	11:00-12:00	northern harrier	1	A	Y	25	0:04:00	foraging	
9/24/2015	1:00-2:00	American kestrel	1	U	Y	25	0:00:30	foraging	
9/24/2015	2:00-3:00	northern harrier	1	A	Y	25	0:08:00	foraging	
9/24/2015	2:00-3:00	American kestrel	2	U	Y	25	0:03:30	foraging	
9/24/2015	3:00-4:00	northern harrier	1	U	Y	25	0:01:30	foraging	
9/24/2015	4:00-5:00	northern harrier	1	U	Y	25	0:03:30	foraging	
9/24/2015	4:00-5:00	northern harrier	1	U	Y	25	0:02:00	foraging	
10/1/2015	11:00-12:00	northern harrier	1	U	Y	25	0:00:30	foraging	
10/1/2015	2:00-3:00	American kestrel	1	U	Y	25	0:01:00	foraging	
10/1/2015	3:00-4:00	American kestrel	2	A	Y	25	0:01:15	foraging	
10/2/2015	9:00-10:00	northern harrier	1	U	Y	25	0:02:30	foraging	
10/2/2015	11:00-12:00	northern harrier	1	U	Y	25	0:02:45	foraging	
10/2/2015	3:00-4:00	northern harrier	1	A	Y	25	0:02:00	foraging	
10/5/2015	12:00-1:00	northern harrier	1	A	Y	25	0:01:45	foraging	
10/6/2015	2:00-3:00	northern harrier	1	A	Y	25	0:02:45	foraging	
10/6/2015	3:00-4:00	northern harrier	1	A	Y	25	0:01:45	foraging	
10/6/2015	3:00-4:00	northern harrier	1	U	Y	25	0:04:45	foraging	
10/6/2015	3:00-4:00	American kestrel	1	A	Y	25	0:06:00	foraging	
10/14/2015	11:00-12:00	northern harrier	1	A	Y	25	0:01:45	foraging	
10/15/2015	9:00-10:00	northern harrier	1	A	Y	25	0:02:45	foraging	
10/15/2015	3:00-4:00	northern harrier	1	J	Y	25	0:04:45	foraging	
10/20/2015	9:00-10:00	northern harrier	1	A	Y	25	0:01:30	foraging	
10/20/2015	10:00-11:00	northern harrier	1	J	Y	25	0:01:00	foraging	
10/21/2015	12:00-1:00	northern harrier	1	U	Y	25	0:01:15	foraging	
10/21/2015	3:00-4:00	northern harrier	1	J	Y	25	0:04:00	foraging	
10/27/2015	10:00-11:00	northern harrier	1	U	Y	25	0:01:30	foraging	
10/27/2015	1:00-2:00	northern harrier	1	A	Y	25	0:02:45	foraging	
10/28/2015	11:00-12:00	bald eagle	2	A	N	250	0:00:00	aerial display	adults chasing each other
11/3/2015	11:00-12:00	northern harrier	1	A	Y	25	0:02:45	foraging	
11/3/2015	1:00-2:00	northern harrier	1	J	Y	25	0:01:30	foraging	
11/10/2015	9:00-10:00	northern harrier	1	A	Y	10	0:02:00	foraging	
11/10/2015	9:00-10:00	northern harrier	1	A	Y	10	0:02:00	foraging	
11/11/2015	12:00-1:00	northern harrier	1	U	Y	10	0:02:00	foraging	

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Date	Time	Species	Number of Individuals	Age (J, SA, or A)	Below turbine height (183m) for at least a portion of flight? (Y/N)	Minimum height (m)	time over turbine area and BELOW turbine height	Behavior Type	Behavior Notes
11/24/2015	9:00-10:00	northern harrier	1	A	Y	1	0:01:00	foraging	
11/25/2015	12:00-1:00	northern harrier	1	U	Y	1	0:00:45	foraging	
8/10/2016	2:00-3:00	American kestrel	1	U	Y	25	0:02:17	foraging, perched	
8/15/2016	1:00-2:00	sharp-shinned hawk	3	N/A	Y	25	0:01:00	foraging	briefly visible above tree line, heard calling earlier in the afternoon
8/23/2016	3:00-4:00	red-tailed hawk	1	A	Y	3	0:00:30	foraging	quick glimpse, went behind trees
8/24/2016	9:00-10:00	northern goshawk	1	A	Y	6	0:00:20	foraging	quick glimpse, flew into woods edge
8/30/2016	12:00-1:00	red-tailed hawk	2	A	N	200	0:00:00	aerial display	mating flight
8/30/2016	3:00-4:00	merlin	1	A	Y	10	0:05:00	foraging, perched	perched in dead tree, rocketed into forested space
8/31/2016	10:00-11:00	broad-winged hawk	1	A	Y	0	0:07:00	foraging, perched	perched in tall pine, calling, then dropped down suddenly
9/13/2016	9:00-10:00	American kestrel	1	A	Y	5	0:00:45	aerial display	harrassing above NOHA
9/15/2016	1:00-2:00	American kestrel	1	A	Y	1	0:04:00	foraging	hover hunting, flying in circles
9/15/2016	2:00-3:00	northern harrier	1	A	Y	5	0:00:45	foraging	
9/21/2016	9:00-10:00	American kestrel	1	A	Y	0	0:01:00	foraging	hover hunting in fields
9/21/2016	1:00-2:00	turkey vulture	1	A	Y	75	0:01:15	foraging	circle soaring, slowly headed west
9/30/2016	10:00-11:00	turkey vulture	1	A	Y	8	0:03:30	foraging	
9/30/2016	1:00-2:00	turkey vulture	1	A	Y	5	0:01:10	foraging	soaring over blueberry fields
9/30/2016	2:00-3:00	American kestrel	2	A	Y	8	0:01:30	aerial display	flying and flitting about together
9/30/2016	3:00-4:00	northern harrier	1	A	Y	1	0:00:45	foraging	foraging
10/6/2016	2:00-3:00	northern harrier	1	A	Y	1	0:00:50	foraging	swooping through
10/14/2016	1:00-2:00	turkey vulture	4	A	Y	50	0:01:10	foraging	
10/19/2016	9:00-10:00	northern harrier	1	A	Y	2	0:01:15	foraging	foraging over blueberry fields
10/19/2016	11:00-12:00	northern harrier	1	A	Y	0	0:02:00	foraging	same as above
10/19/2016	2:00-3:00	northern harrier	1	A	Y	3	0:00:45	foraging	Foraging over blueberry fields
10/26/2016	10:00-11:00	northern harrier	1	A	Y	1	0:00:45	foraging	
11/1/2016	11:00-12:00	bald eagle	1	A	Y	75	0:01:30	aerial display	Seemed to be attacking each other (NOHA below); couple crows/ravens involved
11/1/2016	11:00-12:00	northern harrier	1	A	Y	75	0:01:30	aerial display	see BAEA above
11/22/2016	10:00-11:00	northern harrier	1	A	Y	2	0:01:15	foraging	
8/2/2016	10:00-11:00	turkey vulture	1	A	Y	20	0:03:30	foraging, soaring/gliding	after 1 minute, joined TUVU below, circle soaring together
8/2/2016	10:00-11:00	turkey vulture	1	A	Y	100	0:02:30	foraging, soaring/gliding	circle soaring with TUVU above
8/2/2016	11:00-12:00	turkey vulture	1	A	Y	75	0:03:30	foraging, soaring/gliding	foraging, then circle soared to get height, then shot south
8/2/2016	11:00-12:00	merlin	1	A	Y	2	0:00:30	foraging, powered flight	flew by fast
8/2/2016	4:00-5:00	merlin	2	A	Y	5	0:04:00	aerial display, powered flight	2 birds chasing, vocalizing, likely aerial display, not fighting
8/11/2016	12:00-1:00	sharp-shinned hawk	1	U	Y	25	0:00:52	foraging, soaring/gliding	soaring/flap/glide, then dove onto forest
8/23/2016	5:00-6:00	American kestrel	2	A	Y	2	0:00:50	foraging, powered flight	darting around
8/24/2016	9:00-10:00	American kestrel	1	A	Y	10	0:00:30	foraging, powered flight	
8/24/2016	10:00-11:00	merlin	2	A	Y	60	0:01:45	aerial display, powered flight	seemed to be in aerial display together, but then NOHA came on
8/24/2016	12:00-1:00	turkey vulture	4	A	Y	75	0:04:00	foraging, soaring/gliding	circling as they move slowly east
8/24/2016	5:00-6:00	northern harrier	1	A	Y	1	0:01:30	foraging, powered flight	
8/31/2016	9:00-10:00	American kestrel	1	A	Y	8	0:00:45	foraging, powered flight	flying fast, hassled a song bird
9/13/2016	9:00-10:00	northern harrier	1	A	Y	2	0:00:45	foraging, powered flight	being harassed by AMKE (see next)
9/13/2016	11:00-12:00	American kestrel	2	A	Y	10	0:02:45	foraging, powered flight	residents: not migrating
9/13/2016	4:00-5:00	turkey vulture	1	A	Y	10	0:01:10	foraging, soaring/gliding	flew right over me, headed south but not migrating (likely)
9/21/2016	11:00-12:00	turkey vulture	2	A	Y	8	0:06:00	foraging, soaring/gliding	circle soaring over field
9/22/2016	4:00-5:00	American kestrel	1	A	Y	8	0:00:45	foraging, powered flight	looking for food - resident
9/22/2016	4:00-5:00	American kestrel	1	A	Y	6	0:00:45	foraging, powered flight	resident
9/22/2016	4:00-5:00	American kestrel	3	A	Y	4	0:01:30	foraging, powered flight	could be residents or stopping for night - hover hunting
9/30/2016	9:00-10:00	red-tailed hawk	1	A	Y	200	no data	aerial display, soaring/gliding	circle soaring - constantly harrassed by AMKE (below)
9/30/2016	9:00-10:00	American kestrel	1	A	Y	200	no data	aerial display, soaring/gliding	Harrassing above RTHA whole time
9/30/2016	9:00-10:00	turkey vulture	1	A	Y	50	0:01:30	foraging, soaring/gliding	circle soaring - looks more like foraging
9/30/2016	10:00-11:00	turkey vulture	1	A	Y	50	0:04:30	foraging, soaring/gliding	circle soaring into wind
3/8/2016	1:00-2:00	bald eagle	1	A	Y	75	0:00:30	aerial display	chasing and diving on SA-BAEA (below obs)
3/8/2016	1:00-2:00	bald eagle	1	SA	Y	75	0:00:30	aerial display	being chased and dived on by BAEA (above obs)
3/19/2016	9:00-10:00	bald eagle	1	A	Y	75	0:02:15	aerial display, soaring/gliding	diving on BAEA (2) until (2) moved out of possible territory of (1) then changed direction
3/19/2016	9:00-10:00	bald eagle	1	A	Y	125	0:01:00	aerial display, soaring/gliding	being dived on by (1) until (2) moved out of possible territory by (1) - continued north
4/14/2016	11:00-12:00	turkey vulture	1	A	Y	30	0:00:30	foraging	quick glimpse popped above treeline then back down
4/14/2016	12:00-1:00	turkey vulture	1	A	Y	2	0:00:30	foraging	appeared over ridge - quick - foraging
4/28/2016	4:00-5:00	American kestrel	1	A	Y	0	0:02:00	foraging	
5/1/2016	4:00-5:00	northern harrier	1	A	Y	0	0:03:00	foraging	
5/6/2016	12:00-1:00	red-tailed hawk	1	A	Y	50	0:00:45	foraging	quickly lost sight
5/17/2016	10:00-11:00	northern harrier	1	A	Y	10	0:02:00	foraging	
6/2/2016	4:00-5:00	northern harrier	1	A	Y	5	0:02:00	foraging	
3/30/2016	10:00-11:00	bald eagle	1	SA	Y	75	0:05:00	aerial display, soaring/gliding	#5 and #6 exposed bellies and talons to each other once
3/30/2016	11:00-12:00	bald eagle	1	A	Y	75	0:07:00	aerial display, soaring/gliding	flew with #10 then split off NW after #11 joined them
3/30/2016	11:00-12:00	bald eagle	1	A	Y	75	0:08:00	aerial display, soaring/gliding	flew with #9. they dove at each other from time to time. #11 joined them. After #9 split off NW, #10 split off w
3/30/2016	1:00-2:00	bald eagle	2	SA	Y	25	0:03:00	aerial display, soaring/gliding	flew together low over trees diving at each other. #16 and #17 joined then #15 & #16 went south.
4/14/2016	2:00-3:00	northern harrier	1	A	Y	10	0:00:45	foraging, soaring/gliding	flitting around edge of field
4/18/2016	4:00-5:00	northern harrier	1	A	Y	25	0:02:00	foraging, powered flight	
4/28/2016	10:00-11:00	sharp-shinned hawk	1	A	Y	50	0:00:30	foraging, soaring/gliding	
5/4/2016	12:00-1:00	broad-winged hawk	2	A	Y	50	0:02:00	foraging, soaring/gliding	
5/6/2016	4:00-5:00	turkey vulture	1	A	Y	100	0:01:00	foraging, soaring/gliding	flying low SE of field

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Date	Time	Species	Number of Individuals	Age (J, SA, or A)	Below turbine height (183m) for at least a portion of flight? (Y/N)	Minimum height (m)	time over turbine area and BELOW turbine height	Behavior Type	Behavior Notes
5/9/2016	3:00-4:00	northern harrier	1	A	Y	10	0:01:00	foraging, powered flight	
5/10/2016	1:00-2:00	American kestrel	1	A	Y	0	0:01:00	foraging, soaring/gliding	dropped down and picked off small bird
6/7/2016	4:00-5:00	merlin	1	J	Y	25	0:00:15	foraging, powered flight	powered flight across field and apparent large insect in beak
6/8/2016	4:00-5:00	broad-winged hawk	1	A	Y	25	0:30:00	foraging, powered flight	apparently carrying prey, low flight into forest
4/4/2016	3:00-4:00	northern harrier	1	A	Y	25	0:01:30	foraging, soaring/gliding, powered flight	also foraging; came over opening hunting and peeled back south
4/14/2016	12:00-1:00	sharp-shinned hawk	1	A	Y	3	0:0:1:10	foraging, soaring/gliding, powered flight	flying into wind
6/14/2016	3:00-4:00	American kestrel	1	A	Y	15	0:00:25	foraging, soaring/gliding, powered flight	foraging until blown by heavy gust of wind
4/14/2016	9:00-10:00	turkey vulture	2	A	Y	125	no data	foraging, soaring/gliding	circle soaring together
4/14/2016	10:00-11:00	red-shouldered hawk	1	A	Y	50	no data	foraging, soaring/gliding	circle soaring over forest

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Appendix A Table 7. Summary of Publicly Available Fall Raptor Survey Results Conducted at Proposed (Pre-Construction) Wind Power Facilities in Maine, New Hampshire, and Vermont (1996–Present).

Project Site	Year	Landscape	Survey Period	# of Survey Days	# of Survey Hours	Total # Observed	# of Species Observed	Seasonal Average Passage Rate (raptors/hr)	(Turbine Ht) and % Raptors Below Turbine Height	Reference
Maine										
Mars Hill, Aroostook Cty, ME	Fall 2005	Forested ridge	Sept. 9 - Oct. 13	8	42.5	115	13	1.5	(120 m) 58%[1]	Woodlot Alternatives, Inc. 2005. A Fall 2005 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Mars Hill Wind Project in Mars Hill, Maine. Prepared for UPC Wind Management, LLC.
Stetson, Penobscot Cty, ME	Fall 2006	Forested ridge	Sept. 14 - Oct. 26	7	42	86	11	2.1	(125 m) 63%[1]	Woodlot Alternatives, Inc. 2007. A Fall 2006 Survey of Bird and Bat Migration at the Proposed Stetson Mountain Wind Power Project in Washington County, Maine. Prepared for Evergreen Wind V, LLC.
Rollins, Penobscot Cty, ME	Fall 2007	Forested ridge	Sept. 13 - Oct. 16	12	89	144	12	1.8	(120 m) 82%[1]	Stantec Consulting Services Inc. 2008. Fall 2007 Bird and Bat Migration Survey Report: Visual, Radar and Acoustic Bat Surveys for the Rollins Wind Project. Prepared for First Wind, LLC.
Roxbury, Oxford Cty, ME	Fall 2007	Forested ridge	Sept. 3 - Oct. 15	14	86	96	12	1.1	n/a	Stantec Consulting Services Inc. 2008. Fall 2007 Migration Survey Report: Visual, Acoustic, and Radar Surveys of Bird and Bat Migration conducted at the proposed Record Hill Wind Project In Roxbury, Maine. Prepared for Independence Wind, LLC.
Oakfield, Aroostook Cty, ME	Fall 2008	Agricultural plateau	Sept. 26 - Oct. 14	12	84	60	8	0.7	(120 m) 67%[2]	Woodlot Alternatives, Inc. 2008. A Fall 2008 Survey of Bird and Bat Migration at the Oakfield Wind Project, Washington County, Maine. Prepared for Evergreen Wind, LLC.
Highland, Somerset Cty, ME	Fall 2008	Forested ridge	Sept 3 to Oct 31	15	135	301	10	2.2	(128 m) 43%[1]	Stantec Consulting Services Inc. 2009. Fall 2008 Bird and Bat Migration Survey Report: Radar and Acoustic Avian and Bat Surveys for the Highland Wind Project Highland Plantation, Maine. Prepared for Highland Wind LLC.
Bowers, Washington Cty, ME	Fall 2009	Forested ridge	Sept 9 to Oct 14	15	105	95	9	0.9	(119 m) 69%[1]	Stantec Consulting Services Inc. 2009. Fall 2009 Avian and Bat Surveys for the Bowers Wind Project in Washington County, Maine. Prepared for Champlain Wind Energy, LLC.
Bull Hill, Hancock Cty, ME	Fall 2009	Forested ridge	Sept 2 to Oct 14	12	87	124	11	1.43	(145 m) 98%[2]	Stantec Consulting Services Inc. 2009. Summer and Fall 2009 Avian and Bat Survey Report for the Bull Hill Project in T16 MD, Maine. Prepared for Blue Sky East Wind, LLC.
Bingham, Somerset Cty, ME (Kingsbury Ridge)	Fall 2010	Forested ridge	Sept 2 to Oct 13	12	84	57	11	0.68	(150 m) 85%[2]	Stantec Consulting Services Inc. 2010. 2010 Spring Avian and Spring/Summer Bat Surveys for the Bowers Wind Project. Prepared for Champlain Wind Energy, LLC.
Bingham, Somerset Cty, ME (Johnson Ridge)	Fall 2010	Forested ridge	Sept 2 to Oct 13	5	35	61	9	1.74	(150 m) 92%[2]	Stantec Consulting Services Inc. 2010. 2010 Spring Avian and Spring/Summer Bat Surveys for the Bowers Wind Project. Prepared for Champlain Wind Energy, LLC.
Passadumkeag, Grand Falls Twp, ME	Fall 2011	Forested ridge	Sept 9 to Oct 12	12	84	171	11	2.04	(140 m) 58%[2]	Stantec Consulting Services Inc. 2011. Summer and Fall 2011 Avian and Bat Survey Report for the Passadumkeag Wind Project in Grand Falls Township, Maine. Prepared for Passadumkeag Windpark LLC.
Hancock, Hancock Cty, ME	Fall 2012	Forested ridge	Sept 27 to Oct 17	10	69.25	158	13	2.28	(156 m) 98%[2]	Stantec Consulting Services Inc. 2012. MEMO Results of fall 2012 raptor surveys, Hancock Wind Project, Hancock County, Maine. Prepared for First Wind.
Weaver, Hancock Cty, ME	Fall 2013	Forested ridge	Sept 11 to Oct 21	10	70	62	10	0.89	(180 m) 85%[2]	Stantec Consulting Services Inc. 2014. 2014 Pre-Construction Avian and Bat Surveys – Weaver Wind Project. Prepared for First Wind, LLC.
Weaver, Hancock Cty, ME	Fall 2014	Forested ridge	Sept 18 to Nov 11	10	70	88	11	1.26	(180 m) 97%[2]	Stantec Consulting Services Inc. 2014. 2014 Pre-Construction Avian and Bat Surveys – Weaver Wind Project. Prepared for First Wind, LLC.
Downeast, Washington Cty, ME	**Fall 2015**	**Coastal plain**	**Sept 9 to Nov 25**	**24**	**160**	**499**	**9**	**3.12**	**(183 m) 54%[1]**	***This Report***
Downeast, Washington Cty, ME	**Fall 2016**	**Coastal plain**	**Aug 2 to Nov 22**	**34**	**245**	**188**	**13**	**0.77**	**(183 m) 86%[1]**	***This Report***
New Hampshire										
Lempster, Sullivan County, NH	Fall 2005	Forested ridge	Fall 2005	10	80	264	10	3.3	(125 m) 20.8%[1]	The Louis Berger Group. 2006. Pre and Post-construction Avian Survey, Monitoring, and Mitigation at the Lempster, New Hampshire Wind Power Project. Prepared for Lempster Wind, LLC.
Granite Reliable Power, Coos County, NH	Fall 2007	Forested ridge	Sept. 5 - Oct. 16	11	68	44	9	0.7	n/a	Stantec Consulting Services Inc. 2007. Fall 2007 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Windpark in Coos County, New Hampshire by Granite Reliable Power, LLC. Prepared for Granite Reliable Power, LLC.
Granite Reliable Power, Coos County, NH (Dixville peak)	Fall 2009	Forested ridge	Aug 27 to Oct 27	10	68.33	113	11	1.65	(125 m) 76%[2]	Stantec Consulting Services Inc. 2009. Summary of Fall 2009 Raptor Survey Results at the Proposed Granite Reliable Power Project. Prepared for Noble Environmental Power.
Granite Reliable Power, Coos County, NH (Owl head mtn)	Fall 2009	Forested ridge	Aug 27 to Oct 27	10	70	129	10	1.84	(125 m) 82%[2]	Stantec Consulting Services Inc. 2009. Summary of Fall 2009 Raptor Survey Results at the Proposed Granite Reliable Power Project. Prepared for Noble Environmental Power.
Groton Wind, Grafton Cty, NH (Tenney ridge)	Fall 2009	Forested ridge	Aug 24 to Oct 26	10	79	326	11	4.13	(121 m) 58%[2]	Stantec Consulting Services Inc. 2009. 2009 Spring, Summer, and Fall Avian and Bat Surveys for the Groton Wind Project. Prepared for Groton Wind, LLC.
Groton Wind, Grafton Cty, NH (Crosby and Bald Mtns)	Fall 2009	Forested ridge	Aug 24 to Oct 26	10	78	370	14	4.74	(121 m) 79%[2]	Stantec Consulting Services Inc. 2009. 2009 Spring, Summer, and Fall Avian and Bat Surveys for the Groton Wind Project. Prepared for Groton Wind, LLC.
Melvin Mountain, Grafton and Merrimack Counties, NH	Fall 2010	Forested ridge	Sept 14 to Oct 13	10 (simultaneous with Grants Pond Field)	67.5	51	7	0.76	(150 m) 60%[2]	Stantec Consulting Services Inc. 2013. 2010 Spring and Fall Raptor Migration Surveys for the Wild Meadows Wind Project, Grafton and Merrimack Counties, New Hampshire. Prepared for Atlantic Wind LLC.
Grants Pond Field, Grafton and Merrimack Counties, NH	Fall 2010	Field in valley	Sept 14 to Oct 13	10 (simultaneous with Melvin Mountain)	70	295	12	4.2	(150 m) 67%[2]	Stantec Consulting Services Inc. 2013. 2010 Spring and Fall Raptor Migration Surveys for the Wild Meadows Wind Project, Grafton and Merrimack Counties, New Hampshire. Prepared for Atlantic Wind LLC.
Antrim, Hillsborough Cty, NH	Fall 2011	Forested ridge	Sept 1 to Nov 20	21	147.5	978	10	6.63	(unknown) 37% between 50-500 ft above ground[1]	TRC Engineers and Stantec Consulting Services Inc. 2011. Avian and Bat Protection Plan for the Antrim Wind Energy Project. Prepared for Antrim Wind Energy, LLC.
Vermont										
Searsburg, Bennington County, VT	Fall 1996	Forested ridge	Sept. 11 - Nov. 3	20	80	430	12	5.4	n/a	Kerlinger, Paul. 1996. A Study of Hawk Migration at Green Mountain Power Corporation's Searsburg, Vermont, Wind Powered Site: Autumn 1996. Prepared for the Vermont Public Service Board, Green Mountain Power, National Renewable Energy Laboratory, VERA.
Deerfield, Bennington Cty, VT (Existing Facility)	Fall 2004	Forested ridge	Sept. 2 - Oct. 31	10	60	147	n/a	2.5	n/a	Woodlot Alternatives, Inc. 2005. Fall 2004 Avian Migration Surveys at the Proposed Deerfield Wind/Searsburg Expansion Project in Searsburg and Readsboro, Vermont. Prepared for Deerfield Wind, LLC and Vermont Environmental Research Associates.
Deerfield, Bennington Cty, VT (Western Expansion)	Fall 2004	Forested ridge	Sept. 2 - Oct. 31	10	57	725	n/a	12.7	n/a	Woodlot Alternatives, Inc. 2005. Fall 2004 Avian Migration Surveys at the Proposed Deerfield Wind/Searsburg Expansion Project in Searsburg and Readsboro, Vermont. Prepared for Deerfield Wind, LLC and Vermont Environmental Research Associates.
Sheffield, Caledonia Cty, VT	Fall 2004	Forested ridge	Sept. 11 - Oct. 14	10	60	193	10	3.2	(125 m) 31%[1]	Woodlot Alternatives, Inc. 2006. Avian and Bat Information Summary and Risk Assessment for the Proposed Sheffield Wind Power Project in Sheffield, Vermont. Prepared for UPC Wind Management, LLC.

[1] Percent below turbine height calculated for all observations within study area.

[2] Percent below turbine height calculated for those observations within project area (locations within study area where turbines could possibly be located).

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Appendix A Table 8. Summary of Publicly Available Spring Raptor Survey Results Conducted at Proposed (Pre-Construction) Wind Power Facilities in Maine, New Hampshire, and Vermont (2005–Present).

Project Site	Year	Landscape	Survey Period	# of Survey Days	# of Survey Hours	Total # Observed	# of Species Observed	Seasonal Average Passage Rate (raptors/hr)	(Turbine Ht) and % Raptors Below Turbine Height	Reference
Maine										
Mars Hill, Aroostook Cty, ME	Spring 2006	Forested ridge	April 12 to May 18	10	60.25	64	9	1.1	(120 m) 48%[1]	Woodlot Alternatives, Inc. 2006. A Spring 2006 Radar, Visual, and Acoustic Survey of Bird Migration at the Mars Hill Wind Farm in Mars Hill, Maine. Prepared for Evergreen Windpower, LLC.
Stetson, Penobscot Cty, ME	Spring 2007	Forested ridge	April 26 to May 4	9	58.75	34	10	0.6	(125 m) 65%[1]	Woodlot Alternatives, Inc. 2007. A Spring 2007 Survey of Bird and Bat Migration at the Stetson Wind Project, Washington County, Maine. Prepared for Evergreen Wind V, LLC.
Record Hill, Oxford Cty, ME	Spring 2008	Forested ridge	March 11 to May 27	15	97	118	12	1.2	n/a	Stantec Consulting Services Inc. 2008. Spring 2008 Bird and Bat Migration Survey Report Breeding Bird, Raptor, and Acoustic Bat Surveys for the Record Hill Wind Project Roxbury, Maine. Prepared for Record Hill Wind, LLC.
Rollins Mountain, Penobscot Cty, ME	Spring 2008	Forested ridge	April 3 to Jun 3	15	108	122	12	1.1	(125 m) 76%[2]	Stantec Consulting Services Inc. 2008. Spring 2008 Bird and Bat Migration Survey Report: Visual, Radar and Acoustic Bat Surveys for the Rollins Wind Project. Prepared for First Wind, LLC.
Oakfield, Aroostook Cty, ME	Spring 2008	Forested ridge	April 25- May 30	12	79	58	9	0.73	(120 m) 80%[2]	Stantec Consulting Services Inc. 2008. Spring and Summer 2008 Bird and Bat Migration Survey Report Visual, Radar, and Acoustic Bat Surveys for the Oakfield Wind Project in Oakfield, Maine. Prepared for First Wind Management, LLC.
Highland, Somerset Cty, ME	Spring 2009	Forested ridge	March 25 to May 19	20	139	260	10	1.9	(130.5 m) Whitham 80% Briggs 86%[2]	Stantec Consulting Services Inc. 2009. Spring 2009 Ecological Surveys. Prepared for Highland Wind LLC.
Bingham, Somerset Cty, ME (Johnson Ridge)	Spring 2010	Forested ridge	March 19 to May 21	5	35	37	9	1.06	(152 m) 95%[2]	Stantec Consulting Services Inc. 2010. Spring 2010 Avian and Bat Survey Report for the Bingham Wind Project. Prepared for Blue Sky East Wind LLC.
Bull Hill, Hancock Cty, ME	Spring 2010	Forested ridge	March 19 to May 23	15	104.25	55	9	0.5	(145 m) 100%[2]	Stantec Consulting Services Inc. 2010. Spring 2010 Avian and Bat Survey Report for the Bull Hill Wind Project. Prepared for Blue Sky East Wind, LLC
Bowers, Washington Cty, ME	Spring 2010	Forested ridge	April 21 to May 26	12	84	131	9	1.56	(131 m) 75%[2]	Stantec Consulting Services Inc. 2010. 2010 Spring Avian and Spring/Summer Bat Surveys for the Bowers Wind Project. Prepared for Champlain Wind Energy, LLC
Bingham, Somerset Cty, ME (Kingsbury Ridge)	Spring 2010	Forested ridge	March 19 to May 21	10	70	19	9	0.27	(152 m) 77%[2]	Stantec Consulting Services Inc. 2010. Spring 2010 Avian and Bat Survey Report for the Bingham Wind Project. Prepared for Blue Sky East Wind LLC.
Passadumkeag, Grand Falls Twp, ME	Spring 2011	Forested ridge	April 29 to May 27	12	84	67	6	0.8	(140 m) 46%[1]	Stantec Consulting Services Inc. 2011. Spring and Summer 2011 Avian and Bat Survey Report for the Passadumkeag Wind Project in Grand Falls Township, Maine. Prepared for Noble Passadumkeag Windpark LLC.
Weaver, Hancock Cty, ME	Spring 2014	Forested ridge	April 21 to May 29	10	70	113	9	1.61	(180 m) 100%[2]	Stantec Consulting Services Inc. 2014. 2014 Pre-Construction Avian and Bat Surveys – Weaver Wind Project. Prepared for First Wind, LLC.
Downeast, Washington Cty, ME	**Spring 2016**	**Coastal plain**	**March 1 to April 16**	**32**	**265.5**	**249**	**12**	**0.94**	**(183 m) 72%[1]**	***This Report***
New Hampshire										
Lempster, Sullivan County, NH	Spring 2006	Forested ridge	Spring 2006	10	78	102	n/a	1.3	(125 m) 56%[1]	The Louis Berger Group. 2006. Pre and Post-construction Avian Survey, Monitoring, and Mitigation at the Lempster, New Hampshire Wind Power Project. Prepared for Lempster Wind, LLC.
Groton Wind, Grafton Cty, NH	Spring 2009	Forested ridge	March 26 to May 23	11 3	125 3	175 3	11	1.4	(121 m) 25%[2]	Stantec Consulting Services Inc. 2009. 2009 Spring, Summer, and Fall Avian and Bat Surveys for the Groton Wind Project. Prepared for Groton Wind, LLC.
Granite Reliable Power, Coos County, NH (Dixville peak)	Spring 2010	Forested ridge	April 1 to May 11	10	67.52	14	8	0.21	(125 m) 64%[1]	Stantec Consulting Services Inc. 2010. Fall 2009 and Spring 2010 Raptor Migration Surveys For the Granite Reliable Power Project. Prepared for Granite Reliable Power, LLC
Granite Reliable Power, Coos County, NH (Owl head mtn)	Spring 2010	Forested ridge	April 1 to May 11	10	62.45	29	8	0.46	(125 m) 76%[1]	Stantec Consulting Services Inc. 2010. Fall 2009 and Spring 2010 Raptor Migration Surveys For the Granite Reliable Power Project. Prepared for Granite Reliable Power, LLC
Grants Pond Field, Grafton and Merrimack Counties, NH	Spring 2010	Field in valley	April 15 to May 26	11 (simultaneous with Melvin Mountain)	77	204	9	2.65	(150 m) 84%[2]	Stantec Consulting Services Inc. 2013. 2010 Spring and Fall Raptor Migration Surveys for the Wild Meadows Wind Project, Grafton and Merrimack Counties, New Hampshire. Prepared for Atlantic Wind LLC.
Melvin Mountain, Grafton and Merrimack Counties, NH	Spring 2010	Forested ridge	April 15 to May 26	11 (simultaneous with Grants Pond Field)	75.5	62	9	0.82	(150 m) 83%[2]	Stantec Consulting Services Inc. 2013. 2010 Spring and Fall Raptor Migration Surveys for the Wild Meadows Wind Project, Grafton and Merrimack Counties, New Hampshire. Prepared for Atlantic Wind LLC.
Antrim, Hillsborough Cty, NH	Spring 2011	Forested ridge	March 25 to May 15	9	65	441	11	6.78	(unknown) 37% between 50-500 ft above ground[1]	TRC Engineers and Stantec Consulting Services Inc. 2011. Avian and Bat Protection Plan for the Antrim Wind Energy Project. Prepared for Antrim Wind Energy, LLC.
Vermont										
Deerfield, Bennington Cty, VT (Existing facility)	Spring 2005	Forested ridge	April 9 to April 29	7	42	44	11 (for both sites combined)	1.1	(125 m) 83% (at both sites combined)[1]	Woodlot Alternatives, Inc. 2005. A Spring 2005 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Deerfield Wind Project in Searsburg and Readsboro, Vermont. Prepared for PPM Energy/Deerfield Wind, LLC.
Deerfield, Bennington Cty, VT (Western expansion)	Spring 2005	Forested ridge	April 9 to April 29	7	42	38	11 (for both sites combined)	0.9	(125 m) 83% (at both sites combined)[1]	Woodlot Alternatives, Inc. 2005. A Spring 2005 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Deerfield Wind Project in Searsburg and Readsboro, Vermont. Prepared for PPM Energy/Deerfield Wind, LLC.
Sheffield, Caledonia Cty, VT	Spring 2005	Forested ridge	April to May	10	60	98	10	1.63	(125 m) 69%[1]	Woodlot Alternatives, Inc. 2006. Avian and Bat Information Summary and Risk Assessment for the Proposed Sheffield Wind Power Project in Sheffield, Vermont. Prepared for UPC Wind Management, LLC.
Kingdom Community, Orleans Cty, VT	Spring 2009	Forested ridge	April 15 to June 1	10	74	134	10	1.8	(125 m) 67%[1]	Stantec Consulting Services Inc. 2009. Spring and Summer 2009 Raptor Surveys for the Kingdom Community Wind Project. Prepared for Vermont Environmental Research Associates

[1] Percent below turbine height calculated for all observations within study area.

[2] Percent below turbine height calculated for those observations within project area (locations within study area where turbines could possibly be located).

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Appendix B RAPTOR USE TABLES

Appendix B Table 1. Total Numbers of Individuals Per Species During Raptor Migration Surveys and Raptor Use Surveys, Downeast Wind Project, Fall 2015, Fall 2016, Spring 2016.

Common Name	Scientific Name	Fall 2015		Fall 2016		Spring 2016	
		Raptor Migration Survey	Raptor Use Survey	Raptor Migration Survey	Raptor Use Survey	Raptor Migration Survey	Raptor Use Survey
American kestrel	*Falco sparverius*	45	7	48	0	4	2
bald eagle	*Haliaeetus leucocephalus*	42	1	15	1	69	6
broad-winged hawk	*Buteo platypterus*	65	9	5	0	17	4
Cooper's hawk	*Accipiter cooperii*	1	0	1	0	0	0
merlin	*Falco columbarius*	0	0	15	1	1	0
northern goshawk	*Accipiter gentilis*	0	0	1	0	1	0
northern harrier	*Circus cyraneus*	54	6	19	0	11	3
osprey	*Pandion haliaetus*	5	0	1	0	3	1
peregrine falcon	*Falco peregrinus*	0	0	1	0	1	0
red-shouldered hawk	*Buteo lineatus*	0	0	2	0	1	0
red-tailed hawk	*Buteo jamaicensis*	7	0	8	0	7	0
sharp-shinned hawk	*Accipiter striatus*	4	0	7	1	3	0
turkey vulture	*Cathartes aura*	185	8	61	5	108	16
unidentified accipiter	*Accipiter (sp)*	5	0	1	0	0	0
unidentified buteo	*Buteo (sp)*	19	0	0	0	3	0
unidentified falcon	*Falco (sp)*	3	0	0	0	0	0
unidentified raptor	*Accipitridae (gen, sp)*	64	4	3	0	20	0
Total no. obs.		**499**	**35**	**188**	**8**	**249**	**32**
Mean no raptor obs/hr		**3.12**	**1.46**	**0.77**	**0.36**	**0.94**	**0.80**

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Appendix B Table 2. Daily and Seasonal Observation Rates (Raptors/Hour) During Raptor Migration and Raptor Use Surveys, Downeast Wind Project, Fall 2105, Fall 2016, Spring 2016.

Fall 2015			Fall 2016			Spring 2016		
Date	Raptor Migration Survey	Raptor Use Survey	Date	Raptor Migration Survey	Raptor Use Survey	Date	Raptor Migration Survey	Raptor Use Survey
9/9	1.25	-	8/2	1.22		3/1	0.32	-
9/10	0.88	-	8/3	0.44		3/3	-	0.50
9/16	6.45	1.57	8/10	0.80		3/4	0.31	0.00
9/17	11.61	-	8/11	1.26		3/8	0.92	-
9/21	11.74	-	8/15	1.29		3/9	0.92	-
9/24	8.80	-	8/16	0.47	0.63	3/18	0.39	-
10/1	5.79	-	8/17	-	0.67	3/19	0.77	-
10/2	3.17	-	8/23	0.82	-	3/22	-	0.33
10/5	2.90	2.33	8/24	1.53	-	3/23	1.16	-
10/6	3.57	-	8/30	1.09	-	3/24	0.26	-
10/14	1.57	-	8/31	0.73	-	3/25	-	-
10/15	2.57	-	9/6	0.13	0.11	3/30	3.38	-
10/20	0.71	-	9/7	0.13	0.00	3/31	2.25	-
10/21	1.33	-	9/13	1.25	-	4/4	0.88	-
10/26	-	0.50	9/15	0.77	-	4/5	0.25	-
10/27	0.71	-	9/21	1.33	-	4/13	2.42	-
10/28	2.31	-	9/22	1.87	-	4/14	1.33	0.33
11/3	0.31	-	9/29	0.69	-	4/15	-	2.33
11/4	0.00	-	9/30	3.03	-	4/18	0.61	-
11/10	0.38	-	10/5	0.43	-	4/20	0.12	-
11/11	1.00	-	10/6	0.29	-	4/28	1.53	-
11/16	0.76	-	10/13	0.14	-	5/1	0.61	-
11/17	0.00	-	10/14	1.14	-	5/2	-	3.00
11/18	-	1.17	10/18	0.43	-	5/3	-	-
11/19	-	-	10/19	1.04	-	5/4	1.14	0.33
11/24	0.20	-	10/25	0.15	-	5/5	-	-
11/25	0.20	-	10/26	0.15	-	5/6	0.91	-
			10/31	0.48	-	5/9	0.47	-
Seasonal Observation Rate	**3.12**	**1.46**	11/1	0.48	-	5/10	0.94	-
			11/9	0.00	-	5/17	0.78	-
			11/10	0.38	-	5/18	0.00	-
			11/14	0.20	-	5/23	0.44	0.67
			11/15	0.00	-	5/24	-	-
			11/21	0.00	-	5/25	0.33	-
			11/22	0.20	-	6/1	0.86	-
						6/2	0.65	-
			Seasonal Observation Rate	**0.77**	**0.36**	6/7	1.64	-
						6/8	2.26	-
						6/14	0.54	0.50
						6/15	-	0.63
						6/16	0.32	-
						Seasonal Observation Rate	**0.94**	**0.80**

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Diurnal Raptor Migration Report, Downeast Wind Project, March 2017 to June 2017

Prepared by:
Stantec Consulting Services Inc.
30 Park Drive
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July 7, 2017

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Executive Summary

Stantec Consulting Services Inc. (Stantec) conducted a diurnal raptor migration survey in spring 2017 for the proposed 30-turbine Downeast Wind Project (DOW or Project) in Washington County, Maine. This survey represented the fourth season and second spring season of diurnal raptor migration surveys conducted at DOW. The survey was completed as part of pre-construction planning efforts for DOW in accordance with the Maine Department of Inland Fisheries and Wildlife's (MDIFW) *Curtailment Policy and Wind Power Pre-construction Study Recommendations* (June 2015), the U.S. Fish and Wildlife Service's *Land-based Wind Energy Guidelines* (March 2012), and methods similar to those employed at other wind energy projects in Maine and the Northeast. The survey followed methods detailed in the Project Work Plan submitted to MDIFW on 19 February 2016 and updated 18 March 2016. The goal of the survey was to characterize raptor migration activity. The objectives were to document timing, species composition, and flight characteristics of migrating raptors.

Raptor migration surveys were conducted from a location inside and central to the Project area from 15 March to 15 June 2017. Surveys were completed from 9:00 A.M. to approximately 2 hours before sunset at approximately 3–4 day intervals.

In 28 survey days totaling 239 survey hours, the overall passage rate was 0.69 raptors per hour (raptors/hr). Peak migratory activity occurred in May, specifically on 4 May (2.63 raptors/hr). The species most commonly observed was turkey vulture (*Cathartes aura*) (n = 70, 42.7%), followed by bald eagle (*Haliaeetus leucocephalus*) (n = 24, 14.6%) and broad-winged hawk (*Buteo platypterus*) (n = 19, 11.6%). Flight behaviors were predominantly soaring and gliding and the average minimum flight height of all observations was 109 m (358 ft).

Raptors observed were typical of the region surveyed, and the timing of activity was similar to that at other projects in Maine and in the Northeast. Compared to the spring 2016 raptor migration survey, species composition and the seasonal passage rate were similar (0.94 raptors/hr in 2016). The timing of peak migratory activity differed from the 2016 spring survey during which peak activity was observed in late March.

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) conducted a diurnal spring raptor migration survey for the proposed 30-turbine Downeast Wind Project (DOW or Project) in Washington County, Maine. The survey represented the fourth season and second spring season of raptor migration surveys conducted at DOW. The survey was completed as part of pre-construction planning efforts for DOW in accordance with the Maine Department of Inland Fisheries and Wildlife's (MDIFW) *Curtailment Policy and Wind Power Pre-construction Study Recommendations* (June 2015), the U.S. Fish and Wildlife Service's *Land-based Wind Energy Guidelines* (March 2012), and methods similar to those employed at other wind energy projects in Maine and the Northeast. The survey followed methods detailed in the Project Work Plan submitted to MDIFW on 19 February 2016 and updated 18 March 2016. The goal of the survey was to characterize raptor migration activity. The objectives were to document timing, species composition, and flight characteristics of migrating raptors. Results of the previous three seasons of diurnal raptor migration surveys were included in *the Diurnal Raptor Migration and Use Report, Downeast Wind Project, September 2015 to November 2016* (2015-2016 Raptor Report, Stantec 2017).

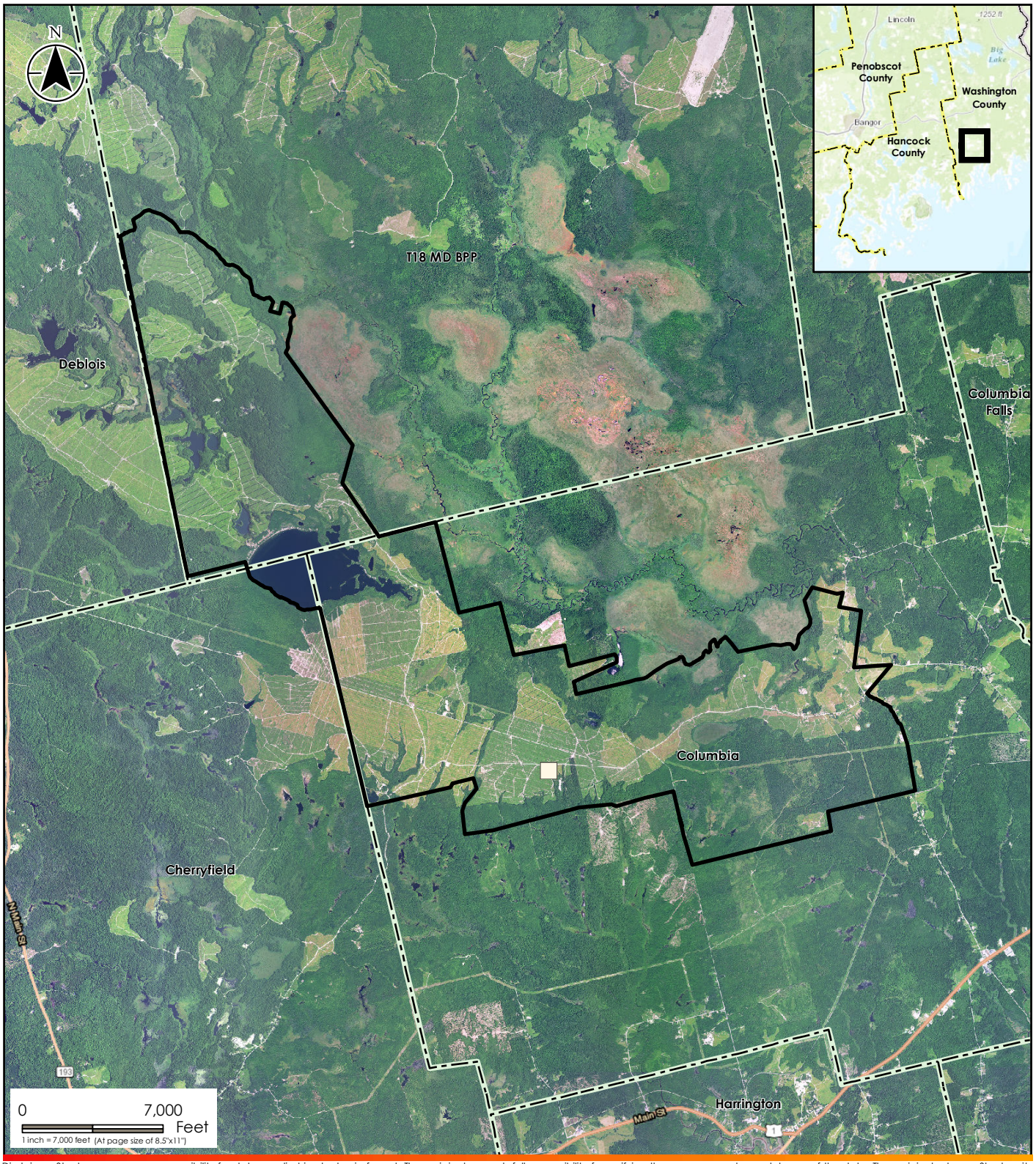
2.0 METHODS

2.1 SURVEY EFFORT AND LOCATION

Surveys days were selected within the spring survey window of 15 March to 15 June based on weather forecast predictions, targeting days with optimal migration weather, i.e., fair days with thermal development and winds from the south. As a result, days with sub-optimal migration weather, e.g., moderate winds and varied wind direction, were surveyed at a lower frequency than optimal days. Surveys were conducted from 9 A.M. to approximately 2 hours before sunset. Binoculars aided in identification.

Raptor migration surveys were conducted from a location inside and central to the Project area (Figure 2-1), which was the same location used in fall 2015.

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Reviewed by SBG on 2017-06-28

01142_2-1_RaptorSurveySpring2017.mxd

Legend

- 2017 Raptor Survey Location
- DOW Project Area

Client/Project

Downeast Wind Project
Washington County, Maine

Figure No.

2-1

Title

Spring 2017 Raptor Survey Location

6/28/2017

2.2 DATA COLLECTION

For each observation, the following were recorded:

- Time of observation
- Species identification (when possible)
- Number of individuals
- Age class (when possible)
- Flight path drawn on a study area map
- The bird's minimum flight height above ground level
- Time below proposed turbine height (183 m), when applicable
- Flight behaviors
- Flight azimuth
- General behavior notes

2.3 DATA SUMMARY AND ANALYSIS

The following were summarized or calculated for the survey season and survey day:

- Observation rate
- Number of species and individuals
- Timing of peak activity (within and among survey days)
- Range of flight heights
- The percentage of birds seen below proposed turbine height
- Flight behaviors

For summary and analysis, a single "pass" of a raptor was considered a single raptor observation; that is, an "observation" was considered a view of a single raptor from the time it was detected to the time it flew out of view. Differentiating between individuals in most cases is nearly impossible for this type of survey, so the same individual could be detected and recorded multiple times.

3.0 RESULTS

The effort consisted of 28 survey days in which 164 raptors were observed.

3.1 PASSAGE RATE

The seasonal mean passage rate was 0.69 raptors/hr and daily passage rates ranged from 0 raptors/hr on 5 days (21 March, 24 March, 28 March, 5 April, and 20 April) to 2.63 raptors/hr on 4 May (Figure 3-1; Appendix A Table 1). Activity was variable, gradually increasing between March and early May then gradually decreasing until mid-June. Eight days (26 March, 10 April, 25 April, 9 May, 12 May, 16 May, 18 May, and 25 May), five of which occurred in May, had similar daily passage rates between 1.11 and 1.49 raptors/hr.

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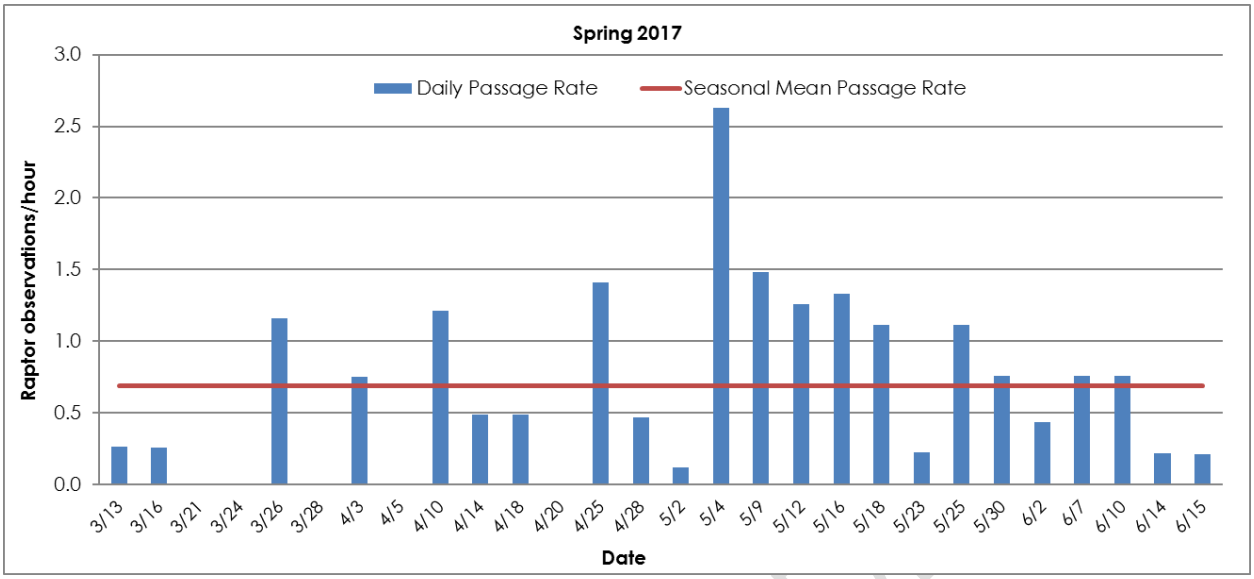


Figure 3-1. Daily mean and seasonal raptor passage rates, spring 2017, Downeast Wind Project.

Hourly observations generally were evenly distributed, with the hour of 4:00–5:00 P.M. having slightly greater activity and hour 3:00–4:00 P.M. having slightly lower activity (Figure 3-2; Appendix A Table 2).

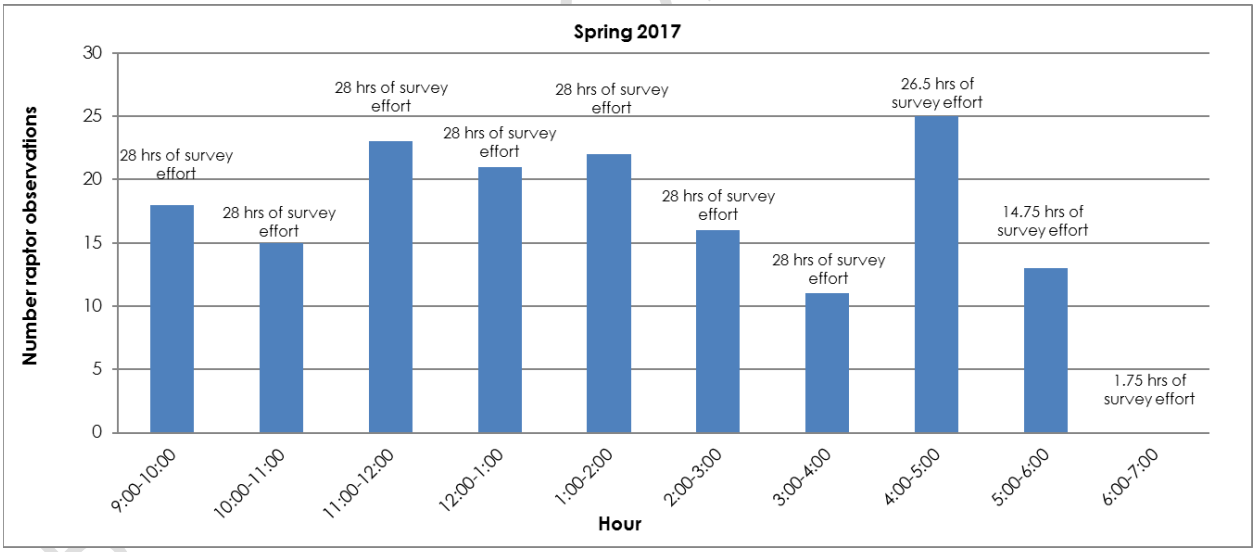


Figure 3-2. Numbers of raptor observations per survey hour, spring 2017, Downeast Wind Project.

3.1.1 Weather and Passage Rate

On survey days winds were primarily from the south (Table 3-1). Wind speeds ranged from calm (0 mph) to strong (13–18 mph); the 2 days with strongest were the first 2 survey days in March. Sky conditions were clear to overcast. No precipitation events occurred during survey days.

On the day with the highest passage rate, 4 May (2.63 raptors/hr), wind direction was variable, wind speeds ranged from 0–8 mph, sky conditions were partly cloudy to clear, and a high pressure system was advancing. Four of the 5 survey days with zero raptors observed occurred when sky conditions were cloudy or overcast and when a low pressure system was either present or advancing. Interestingly, winds on these days were southerly, favorable for migration.

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Table 3-1. Wind and sky condition and daily passage rate, spring 2017, Downeast Wind Project.

Date	Wind direction	Wind speed code (s)	Daytime Pressure System (high or low)	Daily Passage Rate
3/13	NW, NNW	2,3,4	High pressure system advancing with clear skies	0.27
3/16	W, SW	1,2,3,4	High pressure system advancing with partially cloudy skies	0.26
3/21	W, SW	0,1,2	Low pressure system advancing with partially to mostly cloudy skies	0.00
3/24	S	1,2	Low pressure system advancing with overcast skies	0.00
3/26	Variable	0,1,2	High pressure system steady with clear skies	1.16
3/28	E, SE	0,1	Low pressure system steady with overcast skies	0.00
4/3	N, Variable	1,2,3	High pressure system advancing with clear skies,	0.75
4/5	E, SE	1,2	High pressure system advancing with overcast skies	0.00
4/10	S	1,2	Low pressure system advancing with partially to mostly cloudy skies	1.21
4/14	W, Variable	0,1,2	High pressure system steady with clear skies,	0.48
4/18	SE, E	0,1	High pressure system advancing with partially to mostly cloudy skies	0.48
4/20	S, Variable	0,1	Low pressure steady with overcast skies	0.00
4/25	S, SE	0,1,2	High pressure steady with partially cloudy to overcast skies	1.41
4/28	S	1	Low pressure system advancing with overcast skies	0.47
5/2	S, SE	0,1,2	Low pressure advancing with overcast skies	0.12
5/4	Variable	1,2	High pressure advancing with partially cloudy to clear skies	2.63
5/9	S, SSE	0,1	Low pressure steady with mostly cloudy skies	1.49
5/12	SE, Variable	0,1,2	High pressure steady with partially to mostly cloudy skies	1.26
5/16	S, SW	1,2,3	Low pressure advancing with clear to partially cloudy skies	1.33
5/18	SW, W	2,3	High pressure falling with clear skies	1.11
5/23	W, SW	0,1	Low pressure system advancing with partially to mostly cloudy skies	0.22
5/25	E, Variable	0,1,2	Low pressure system advancing with overcast skies	1.11
5/30	SSW, SW	2,3	High pressure system advancing with clear skies	0.76
6/2	W	1,2	Low pressure system steady with partially to mostly cloudy skies	0.43
6/7	S, NE	0,1,2	High pressure advancing with clear skies	0.76
6/10	SW, Variable	1,2	High pressure advancing with clear skies	0.76
6/14	N, NW, W	2,3	High pressure advancing with partially cloudy to clear skies	0.22
6/15	S, W	0,1	High pressure advancing with partially cloudy skies	0.21

Wind Speed codes: 0 = calm; **1** = 1–3 mph; **2** = 4–8 mph; **3** = 9–12 mph; **4** = 13–18 mph; **5** = 19–24 mph

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3.2 SPECIES

Turkey vulture(*Cathartes aura*) represented the greatest proportion of raptors observed (42.7%; Table 3-2, Figure 3-3; Appendix A Table 1). Four species, American kestrel (*Falco sparverius*), bald eagle (*Haliaeetus leucocephalus*), broad-winged hawk (*Buteo platypterus*), and turkey vulture comprised 79.9% of total observations.

Table 3-2. Number of raptor observations by species, spring 2017, Downeast Wind Project.

Raptor Species Observed			
Common Name	**Scientific Name**	**No. obs**	**% obs**
American kestrel	*Falco sparverius*	18	11.0
bald eagle	*Haliaeetus leucocephalus*	24	14.6
broad-winged hawk	*Buteo platypterus*	19	11.6
Cooper's hawk	*Accipiter cooperii*	1	0.6
merlin	*Falco columbarius*	7	4.3
northern harrier	*Circus cyaneus*	3	1.8
osprey	*Pandion haliaetus*	2	1.2
peregrine falcon	*Falco peregrinus*	1	0.6
red-shouldered hawk	*Buteo lineatus*	2	1.2
red-tailed hawk	*Buteo jamaicensis*	5	3.0
turkey vulture	*Cathartes aura*	70	42.7
unidentified accipiter	*Accipitrinae; Accipiter (sp)*	1	0.6
unidentified raptor	*Accipitridae (gen, sp)*	11	6.7
	Total	**164**	**100.0**

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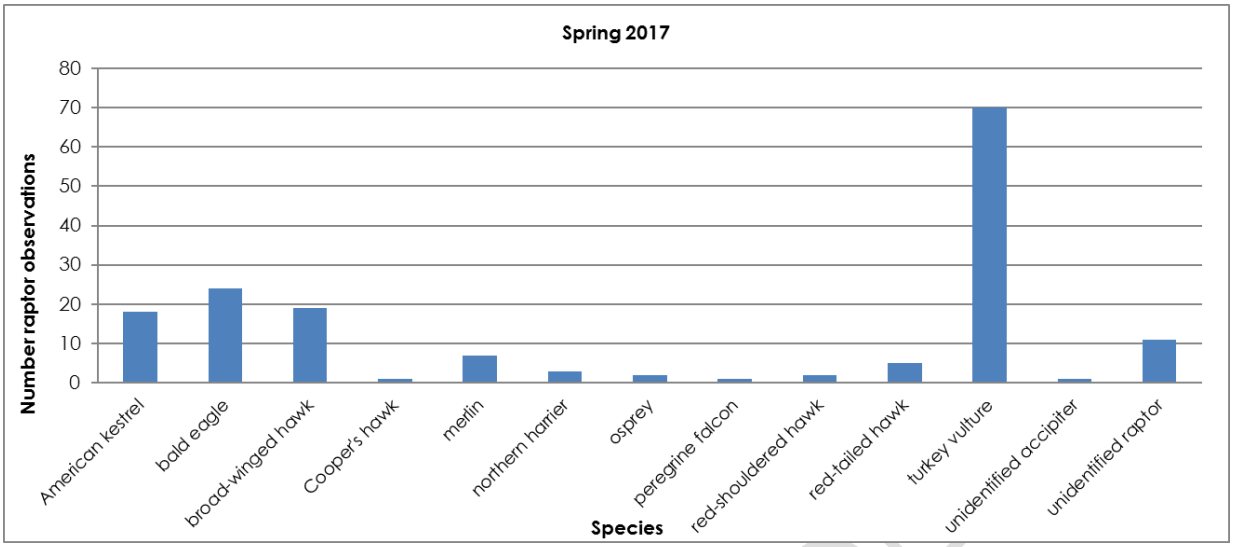


Figure 3-3. Numbers of raptor observations by species, spring 2017, Downeast Wind Project.

No federally endangered or threatened raptor species were observed. No state-listed threatened raptor species were observed. One peregrine falcon (*Falco peregrinus*), whose breeding population is state-listed endangered (MDIFW 2013b), was observed (0.6% of total observations). Twenty-four bald eagle observations (14.6% of total observations) and 3 northern harrier (*Circus cyaneus)* observations (1.8% of total observations), Species of Special Concern in Maine (MDIFW 2013a), were documented.

3.3 FLIGHT CHARACTERISTICS

Of the total 164 observations, 109 (66.5%) were observed at heights below 183 m. The average minimum flight height of all raptors observed in spring 2017 was 109 m (Figure 3-4; Appendix A Table 3). The most common species observed below turbine height were American kestrel, broad-winged hawk, and turkey vulture. American kestrel and turkey vulture commonly exhibited foraging behaviors (Appendix A Table 4).

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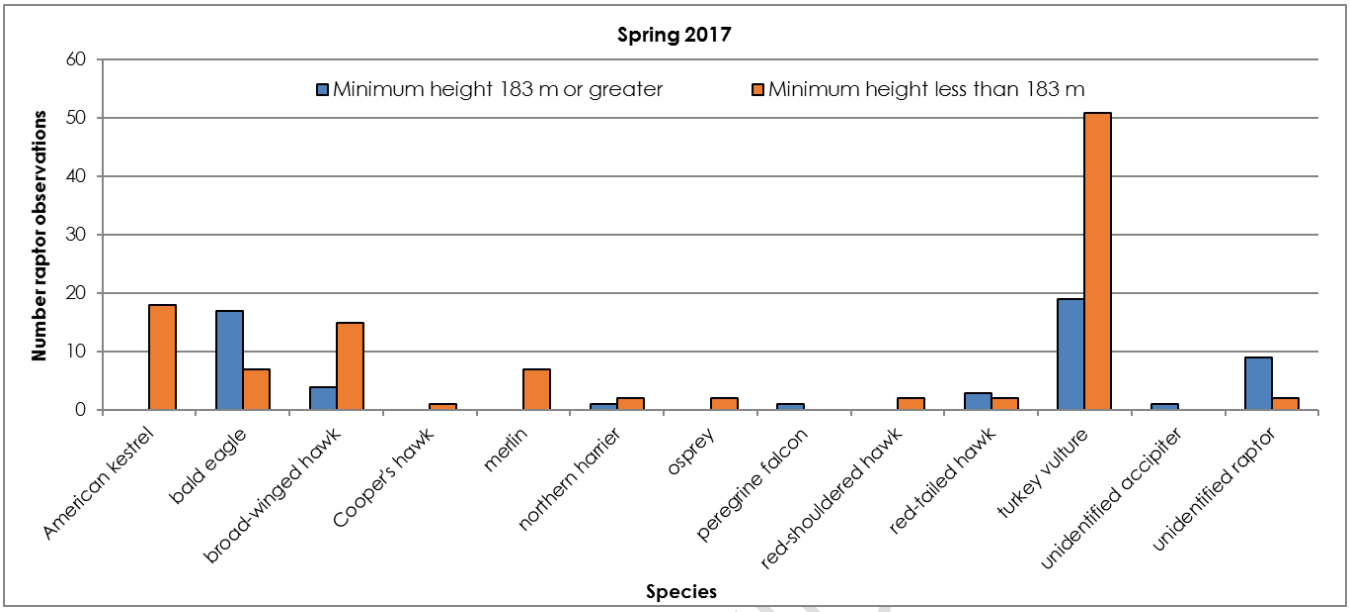


Figure 3-4. Number of raptor observations by species at heights above and below 183 m, spring 2017, Downeast Wind Project.

Some raptors exhibited multiple behaviors in the Project area, resulting in more behavior observations than total raptor observations. Soaring was the most commonly observed behavior (63.0% of observations) (Table 3-3; Appendix A Table4). Other behaviors observed included foraging, flap and glide, perched, and territorial or courtship flight.

Table 3-3. Number of raptor observations by behavior, spring 2017, Downeast Wind Project.

Behavior[1]	Spring 2017	
	No. obs.	% obs.
soaring	119	63.0
flap and gliding	21	11.1
foraging	35	18.5
territorial or courtship flight	4	2.1
perched	10	5.3
Total	**189**	**100.0**

[1] Some individuals exhibited multiple behaviors.

Foraging behavior by turkey vultures and American kestrels comprised 86.0% of all foraging behaviors (Appendix A Table 4). Other species observed foraging included broad-winged hawk and northern harrier. Two separate observations of single, foraging northern harriers occurred between 3:00 PM and 5:00 PM on 26 March and 15 June.

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Territorial or courtship flight was observed in 2 species, American kestrel and broad-winged hawk. Two American kestrels were observed exhibiting this behavior on 12 May and 2 broad-winged hawks were observed exhibiting this behavior on 18 May (Appendix A Table 6). Bald eagle observations were soaring or exhibiting powered flight; no bald eagles were observed foraging, or engaged in territorial or courtship behavior.

4.0 DISCUSSION

In general, the seasonal average passage rate for the spring 2017 season (0.69 raptors/hr) was within the range of results at proposed wind projects in Maine, New Hampshire, and Vermont (0.5–6.78 raptors/hr; Appendix A Table 5). Species detected during the survey are species regularly observed in the region. Weather, particularly the presence or passage of high pressure systems, appeared to influence passage rates.

The seasonal average percent below turbine height (66.5%) is within the range of results at proposed wind projects in Maine, New Hampshire, and Vermont (25–100%; Appendix A Table 5). Observations of turkey vulture, American kestrel, broad-winged hawk, and northern harrier exhibited foraging, territorial, or perching behavior, which typically occurs at relatively low heights and, in some cases, may be indicative of resident status. No nests of these species have been observed in the Project area. Bald eagle observations exhibited soaring or powered flight, and most observations (70.8%) occurred above turbine height (183 m).

Compared to the spring 2016 raptor migration survey, species composition and the seasonal passage rate were similar (0.94 raptors/hr in 2016). The timing of peak migratory activity differed from the 2016 spring survey during which peak activity was observed in late March. Seasonal and yearly variation in raptor migration timing, location, and species composition is common and dependent upon a variety of stochastic factors. In spring 2017, the month of March was unseasonably cold and snow events occurred well into April, which may have contributed to an observed delay in migration activity.

5.0 CONCLUSIONS

Raptor surveys conducted during spring 2017 effectively characterized the levels and timing of raptor migratory activity at DOW. Patterns in raptor migration and use at the Project are consistent with those documented at other wind projects, and species composition was as expected based on the region and habitats present in the Project area. Raptors observed making localized movements, particularly turkey vultures, American kestrels, broad-winged hawks, and northern harriers, exhibited various behaviors including perching, territorial or courtship flight, and foraging.

The collection and analysis of additional raptor migration data collected in spring 2017 does not change Stantec's conclusion in the 2015-2016 Raptor Report that raptor fatalities at DOW are

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expected to be uncommon and that monitoring of collision mortality is recommended to confirm this conclusion.

6.0 LITERATURE CITED

Maine Department of Inland Fisheries & Wildlife (MDIFW). 2013a. State List of Endangered and Threatened Species. http://www.maine.gov/ifw/wildlife/endangered/specialconcern.htm. Accessed 03 March 2017.

MDIFW. 2013b. Species of Special Concern. http://www.maine.gov/ifw/wildlife/endangered/specialconcern.htm. Accessed 03 March 2017.

MDFIW. June 2015. Curtailment Policy and Wind Power Pre-Construction Study Recommendations.

Stantec. 2017. Diurnal Raptor Migration and Use Report, Downeast Wind Project, September 2015 to November 2016.

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APPENDIX A RAPTOR MIGRATION PHOTOS, TABLES



Appendix A Figure 1. View from Observation Site; North (top left), South (top right), East (bottom left), West (bottom right), spring 2017, Downeast Wind Project.

Appendix A Table 1. Daily total observations of raptor species and daily passage rates. Downeast Wind Project, spring 2017.

Species	3/13	3/16	3/21	3/24	3/26	3/28	4/3	4/5	4/10	4/14	4/18	4/20	4/25	4/28	5/2	5/4	5/9	5/12	5/16	5/18	5/23	5/25	5/30	6/2	6/7	6/10	6/14	6/15	Total
American kestrel											2		4	2	1	2		4					1	1		1			**18**
bald eagle	2				4		2		5	1			1			1	1		2		1			1	2			1	**24**
broad-winged hawk							1						1			7	2	1	2	3			2						**19**
Cooper's hawk														1															**1**
merlin													1	1		3	2												**7**
northern harrier					1												1											1	**3**
osprey										1								1											**2**
peregrine falcon																								1					**1**
red-shouldered hawk																1				1									**2**
red-tailed hawk		1							1				1				1			1									**5**
turkey vulture							3		3		2		4			9	5	3	7	5	1	10	4	1	5	6	2		**70**
unidentified accipiter																	1												**1**
unidentified raptor		1			4				1	2								2	1										**11**
Total	**2**	**2**	**0**	**0**	**9**	**0**	**6**	**0**	**10**	**4**	**4**	**0**	**12**	**4**	**1**	**23**	**13**	**11**	**12**	**10**	**2**	**10**	**7**	**4**	**7**	**7**	**2**	**2**	**164**

Appendix A Table 2. Hourly summary of raptor observations, Downeast Wind Project, spring 2017.

Species	9:00-10:00	10:00-11:00	11:00-12:00	12:00-1:00	1:00-2:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	Total
American kestrel	2	2	3	2	2			2	5		**18**
bald eagle		4	1	4	3	6	3	2	1		**24**
broad-winged hawk	3	1	3	4	3	2	1	2			**19**
Cooper's hawk				1							**1**
merlin				1	4		1	1			**7**
northern harrier			1				1	1			**3**
osprey	1	1									**2**
peregrine falcon							1				**1**
red-shouldered hawk	1					1					**2**
red-tailed hawk		1	1		2		1				**5**
turkey vulture	6	6	14	7	5	5	3	17	7		**70**
unidentified accipiter					1						**1**
unidentified raptor	5			2	2	2					**11**
Total	**18**	**15**	**23**	**21**	**22**	**16**	**11**	**25**	**13**	**0**	**164**
Total no. survey hours	**28.00**	**28.00**	**28.00**	**28.00**	**28.00**	**28.00**	**28.00**	**26.50**	**14.75**	**1.75**	**239**

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Appendix A Table 3. Summary of average minimum flight heights of species, Downeast Wind Project, spring 2017.

Species	Spring 2017				
	Minimum height 183 m or greater		Minimum height less than 183 m		Total obs.
	No. obs.	% obs.	No. obs.	% obs.	
American kestrel	0	0.0	18	100.0	18
bald eagle	17	70.8	7	29.2	24
broad-winged hawk	4	21.1	15	78.9	19
Cooper's hawk	0	0.0	1	100.0	1
merlin	0	0.0	7	100.0	7
northern harrier	1	33.3	2	66.7	3
osprey	0	0.0	2	100.0	2
peregrine falcon	1	100.0	0	0.0	1
red-shouldered hawk	0	0.0	2	100.0	2
red-tailed hawk	3	60.0	2	40.0	5
turkey vulture	19	27.1	51	72.9	70
unidentified accipiter	1	100.0	0	0.0	1
unidentified raptor	9	81.8	2	18.2	11
Total	**55**	**33.5**	**109**	**66.5**	**164**
Average minimum flight height (m)	**109**				

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Appendix A Table 4. Summary of foraging and territorial or courtship flight behaviors during raptor migration surveys, Downeast Wind Project, spring 2017.

Date	Time	Species	Number of individuals	Age (J, SA, or A)	Below turbine height (183m) for at least a portion of flight? (Y/N)	Minimum height (m)	Observation duration BELOW turbine height	Behavior type	Behavior notes
4/18/2017	4:00-5:00	American kestrel	1	A	Y	2	0:01:30	foraging, soaring	female, kiting/hovering
4/25/2017	9:00-10:00	American kestrel	1	A	Y	0	0:01:30	foraging	kiting/hovering
5/4/2017	10:00-11:00	American kestrel	1	A	Y	3	0:01:10	foraging, perched	
5/12/2017	11:00-12:00	American kestrel	2	Unkn	Y	8	0:00:50	territorial or courtship	flying together, aggressive toward each other
5/12/2017	12:00-1:00	American kestrel	1	A	Y	1	0:01:30	foraging	
5/12/2017	5:00-6:00	American kestrel	1	A	Y	5	0:00:45	foraging	
5/30/2017	10:00-11:00	American kestrel	1	A	Y	40	0:00:35	foraging	
6/2/2017	4:00-5:00	American kestrel	1	A	Y	1	0:00:15	foraging	stooping and diving for prey
6/10/2017	1:00-2:00	American kestrel	1	A	Y	5	0:00:35	foraging	
5/18/2017	2:00-3:00	broad-winged hawk	1	A	Y	60	0:00:20	foraging	
5/18/2017	4:00-5:00	broad-winged hawk	2	A	Y	20	0:02:45	territorial or courtship	
5/30/2017	9:00-10:00	broad-winged hawk	2	A	Y	60	0:03:30	foraging	
3/26/2017	4:00-5:00	northern harrier	1	A	Y	1	0:00:45	foraging	
6/15/2017	3:00-4:00	northern harrier	1	A	Y	15	0:01:30	foraging	
4/3/2017	4:00-5:00	turkey vulture	1	A	Y	10	0:01:30	foraging, soaring	
5/12/2017	9:00-10:00	turkey vulture	2	A	Y	10	0:02:30	foraging	foraging together
5/16/2017	10:00-11:00	turkey vulture	1	A	Y	80	0:00:50	foraging	
5/16/2017	11:00-12:00	turkey vulture	1	A	Y	20	0:01:50	foraging	
5/16/2017	3:00-4:00	turkey vulture	1	A	Y	15	0:01:15	foraging	
5/16/2017	4:00-5:00	turkey vulture	1	A	Y	20	0:00:50	foraging	
5/16/2017	5:00-6:00	turkey vulture	1	A	Y	30	0:01:50	foraging	
5/18/2017	11:00-12:00	turkey vulture	2	A	Y	30	0:01:10	foraging	
5/18/2017	11:00-12:00	turkey vulture	2	A	Y	60	0:01:20	foraging	
5/18/2017	4:00-5:00	turkey vulture	1	A	Y	60	0:00:15	foraging	
5/30/2017	2:00-3:00	turkey vulture	1	A	Y	30	0:03:10	foraging	
6/7/2017	5:00-6:00	turkey vulture	3	A	Y	60	0:02:45	foraging	
6/10/2017	3:00-4:00	turkey vulture	1	A	Y	40	0:01:45	foraging	
6/10/2017	4:00-5:00	turkey vulture	1	A	Y	20	0:00:50	foraging	
6/10/2017	4:00-5:00	turkey vulture	1	A	Y	20	0:02:00	foraging	
6/10/2017	5:00-6:00	turkey vulture	2	A	Y	20	0:01:45	foraging	

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Appendix A Table 5. Summary of publicly available spring raptor survey results conducted a proposed (pre-construction) wind power facilities in Maine, New Hampshire, and Vermont (2005-present).

Project Site	Year	Landscape	Survey Period	# of Survey Days	# of Survey Hours	Total # Observed	# of Species Observed	Seasonal Average Passage Rate (raptors/hr)	(Turbine Ht) and % Raptors Below Turbine Height	Reference
Maine										
Mars Hill, Aroostook Cty, ME	Spring 2006	Forested ridge	April 12 to May 18	10	60.25	64	9	1.1	(120 m) 48%[1]	Woodlot Alternatives, Inc. 2006. A Spring 2006 Radar, Visual, and Acoustic Survey of Bird Migration at the Mars Hill Wind Farm in Mars Hill, Maine. Prepared for Evergreen Windpower, LLC.
Stetson, Penobscot Cty, ME	Spring 2007	Forested ridge	April 26 to May 4	9	58.75	34	10	0.6	(125 m) 65%[1]	Woodlot Alternatives, Inc. 2007. A Spring 2007 Survey of Bird and Bat Migration at the Stetson Wind Project, Washington County, Maine. Prepared for Evergreen Wind V, LLC.
Record Hill, Oxford Cty, ME	Spring 2008	Forested ridge	March 11 to May 27	15	97	118	12	1.2	n/a	Stantec Consulting Services Inc. 2008. Spring 2008 Bird and Bat Migration Survey Report Breeding Bird, Raptor, and Acoustic Bat Surveys for the Record Hill Wind Project Roxbury, Maine. Prepared for Record Hill Wind, LLC.
Rollins Mountain, Penobscot Cty, ME	Spring 2008	Forested ridge	April 3 to Jun 3	15	108	122	12	1.1	(125 m) 76%[2]	Stantec Consulting Services Inc. 2008. Spring 2008 Bird and Bat Migration Survey Report: Visual, Radar and Acoustic Bat Surveys for the Rollins Wind Project. Prepared for First Wind, LLC.
Oakfield, Aroostook Cty, ME	Spring 2008	Forested ridge	April 25-May 30	12	79	58	9	0.73	(120 m) 80%[2]	Stantec Consulting Services Inc. 2008. Spring and Summer 2008 Bird and Bat Migration Survey Report Visual, Radar, and Acoustic Bat Surveys for the Oakfield Wind Project in Oakfield, Maine. Prepared for First Wind Management, LLC.
Highland, Somerset Cty, ME	Spring 2009	Forested ridge	March 25 to May 19	20	139	260	10	1.9	(130.5 m) Whitham 80% Briggs 86%[2]	Stantec Consulting Services Inc. 2009. Spring 2009 Ecological Surveys. Prepared for Highland Wind LLC.
Bingham, Somerset Cty, ME (Johnson Ridge)	Spring 2010	Forested ridge	March 19 to May 21	5	35	37	9	1.06	(152 m) 95%[2]	Stantec Consulting Services Inc. 2010. Spring 2010 Avian and Bat Survey Report for the Bingham Wind Project. Prepared for Blue Sky East Wind LLC.
Bull Hill, Hancock Cty, ME	Spring 2010	Forested ridge	March 19 to May 23	15	104.25	55	9	0.5	(145 m) 100%[2]	Stantec Consulting Services Inc. 2010. Spring 2010 Avian and Bat Survey Report for the Bull Hill Wind Project. Prepared for Blue Sky East Wind, LLC
Bowers, Washington Cty, ME	Spring 2010	Forested ridge	April 21 to May 26	12	84	131	9	1.56	(131 m) 75%[2]	Stantec Consulting Services Inc. 2010. 2010 Spring Avian and Spring/Summer Bat Surveys for the Bowers Wind Project. Prepared for Champlain Wind Energy, LLC
Bingham, Somerset Cty, ME (Kingsbury Ridge)	Spring 2010	Forested ridge	March 19 to May 21	10	70	19	9	0.27	(152 m) 77%[2]	Stantec Consulting Services Inc. 2010. Spring 2010 Avian and Bat Survey Report for the Bingham Wind Project. Prepared for Blue Sky East Wind LLC.
Passadumkeag, Grand Falls Twp, ME	Spring 2011	Forested ridge	April 29 to May 27	12	84	67	6	0.8	(140 m) 46%[1]	Stantec Consulting Services Inc. 2011. Spring and Summer 2011 Avian and Bat Survey Report for the Passadumkeag Wind Project in Grand Falls Township, Maine. Prepared for Noble Passadumkeag Windpark LLC.

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Project Site	Year	Landscape	Survey Period	# of Survey Days	# of Survey Hours	Total # Observed	# of Species Observed	Seasonal Average Passage Rate (raptors/hr)	(Turbine Ht) and % Raptors Below Turbine Height	Reference
Weaver, Hancock Cty, ME	Spring 2014	Forested ridge	April 21 to May 29	10	70	113	9	1.61	(180 m) 100%[2]	Stantec Consulting Services Inc. 2014. 2014 Pre-Construction Avian and Bat Surveys – Weaver Wind Project. Prepared for First Wind, LLC.
Downeast, Washington Cty, ME	Spring 2016	Coastal plain	March 1 to April 16	32	265.5	249	12	0.94	(183 m) 72%[1]	Stantec Consulting Services Inc. 2017. Diurnal Raptor Migration and Use Report, Downeast Wind Project, September 2015 to November 2016. Prepared for Apex Clean Energy, Inc.
Downeast, Washington Cty, ME	**Spring 2017**	**Coastal plain**	**March 13 to June 15**	**28**	**265.5**	**239**	**11**	**0.69**	**(183 m) 67%[1]**	***This Report***
New Hampshire										
Lempster, Sullivan County, NH	Spring 2006	Forested ridge	Spring 2006	10	78	102	n/a	1.3	(125 m) 56%[1]	The Louis Berger Group. 2006. Pre and Post-construction Avian Survey, Monitoring, and Mitigation at the Lempster, New Hampshire Wind Power Project. Prepared for Lempster Wind, LLC.
Groton Wind, Grafton Cty, NH	Spring 2009	Forested ridge	March 26 to May 23	11 3	125 3	175 3	11	1.4	(121 m) 25%[2]	Stantec Consulting Services Inc. 2009. 2009 Spring, Summer, and Fall Avian and Bat Surveys for the Groton Wind Project. Prepared for Groton Wind, LLC.
Granite Reliable Power, Coos County, NH (Dixville peak)	Spring 2010	Forested ridge	April 1 to May 11	10	67.52	14	8	0.21	(125 m) 64%[1]	Stantec Consulting Services Inc. 2010. Fall 2009 and Spring 2010 Raptor Migration Surveys For the Granite Reliable Power Project. Prepared for Granite Reliable Power, LLC
Granite Reliable Power, Coos County, NH (Owl head mtn)	Spring 2010	Forested ridge	April 1 to May 11	10	62.45	29	8	0.46	(125 m) 76%[1]	Stantec Consulting Services Inc. 2010. Fall 2009 and Spring 2010 Raptor Migration Surveys For the Granite Reliable Power Project. Prepared for Granite Reliable Power, LLC
Grants Pond Field, Grafton and Merrimack Counties, NH	Spring 2010	Field in valley	April 15 to May 26	11 (simultaneous with Melvin Mountain)	77	204	9	2.65	(150 m) 84%[2]	Stantec Consulting Services Inc. 2013. 2010 Spring and Fall Raptor Migration Surveys for the Wild Meadows Wind Project, Grafton and Merrimack Counties, New Hampshire. Prepared for Atlantic Wind LLC.
Melvin Mountain, Grafton and Merrimack Counties, NH	Spring 2010	Forested ridge	April 15 to May 26	11 (simultaneous with Grants Pond Field)	75.5	62	9	0.82	(150 m) 83%[2]	Stantec Consulting Services Inc. 2013. 2010 Spring and Fall Raptor Migration Surveys for the Wild Meadows Wind Project, Grafton and Merrimack Counties, New Hampshire. Prepared for Atlantic Wind LLC.
Antrim, Hillsborough Cty, NH	Spring 2011	Forested ridge	March 25 to May 15	9	65	441	11	6.78	(unknown) 37% between 50-500 ft above ground[1]	TRC Engineers and Stantec Consulting Services Inc. 2011. Avian and Bat Protection Plan for the Antrim Wind Energy Project. Prepared for Antrim Wind Energy, LLC.
Vermont										
Deerfield, Bennington Cty, VT (Existing facility)	Spring 2005	Forested ridge	April 9 to April 29	7	42	44	11 (for both sites combined)	1.1	(125 m) 83% (at both sites combined)[1]	Woodlot Alternatives, Inc. 2005. A Spring 2005 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Deerfield Wind Project in Searsburg

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Project Site	Year	Landscape	Survey Period	# of Survey Days	# of Survey Hours	Total # Observed	# of Species Observed	Seasonal Average Passage Rate (raptors/hr)	(Turbine Ht) and % Raptors Below Turbine Height	Reference
										and Readsboro, Vermont. Prepared for PPM Energy/Deerfield Wind, LLC.
Deerfield, Bennington Cty, VT (Western expansion)	Spring 2005	Forested ridge	April 9 to April 29	7	42	38	11 (for both sites combined)	0.9	(125 m) 83% (at both sites combined)[1]	Woodlot Alternatives, Inc. 2005. A Spring 2005 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Deerfield Wind Project in Searsburg and Readsboro, Vermont. Prepared for PPM Energy/Deerfield Wind, LLC.
Sheffield, Caledonia Cty, VT	Spring 2005	Forested ridge	April to May	10	60	98	10	1.63	(125 m) 69%[1]	Woodlot Alternatives, Inc. 2006. Avian and Bat Information Summary and Risk Assessment for the Proposed Sheffield Wind Power Project in Sheffield, Vermont. Prepared for UPC Wind Management, LLC.
Kingdom Community, Orleans Cty, VT	Spring 2009	Forested ridge	April 15 to June 1	10	74	134	10	1.8	(125 m) 67%[1]	Stantec Consulting Services Inc. 2009. Spring and Summer 2009 Raptor Surveys for the Kingdom Community Wind Project. Prepared for Vermont Environmental Research Associates

[1] Percent below turbine height calculated for all observations within study area.

[2] Percent below turbine height calculated for those observations within project area (locations within study area where turbines could possibly be located).

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August 27, 2019

Bob Stratton
Environmental Program Manager
[Maine Department of Inland Fisheries and Wildlife
284 State Street; SHS #41
Augusta, Maine 04333-0041

Sent via e-mail to Robert.D. Stratton@maine.gov

Dear Bob:

The following report outlines results from the Spring 2019 raptor migration surveys at the proposed Downeast Wind Energy Project located in T2 MD BPP, T18 MD BPP, and T19 MD BPP in Washington county. This was the first season of raptor survey completed in the northern portion of the project; however, two years of surveys, including 2 fall and 2 spring migration periods, were completed between 2015-2017 in the southern Downeast I Project area. Due to the low passage rate observed during this and previous studies completed at the site, we do not recommend completing additional fall raptor migration surveys.

Sincerely,

Dana Valleau
Project Manager

cc: Erynn Call, MDIFW; Charlie Todd, MDIFW; Paul Williamson, Apex; Ryan Henning, Apex

2019 Spring Raptor Migration Survey Report
for the
Proposed Apex Downeast Wind Energy Project

T2 MD BPP, T18 MD BPP, T19 MD BPP, Maine

Prepared by:
TRC Environmental Corporation
14 Gabriel Drive
Augusta, Maine 04330

August 27, 2019

INTRODUCTION

TRC completed daytime raptor migration surveys for the proposed Downeast Wind Energy Project (Project) in Maine (Figure 1). This was the first raptor migration survey completed within the Downeast II Project area. Two previous spring and fall migration surveys were completed in the adjacent Downeast I Project area in June of 2017. The purpose of these surveys was to document raptor flight paths as they move through the Project. The survey was completed in accordance with the Maine Inland Fisheries and Wildlife (MDIFW) Maine Wind Power Preconstruction Recommendations and Turbine Curtailment Recommendations to Avoid/Minimize Bat Mortality, updated March 5, 2018.

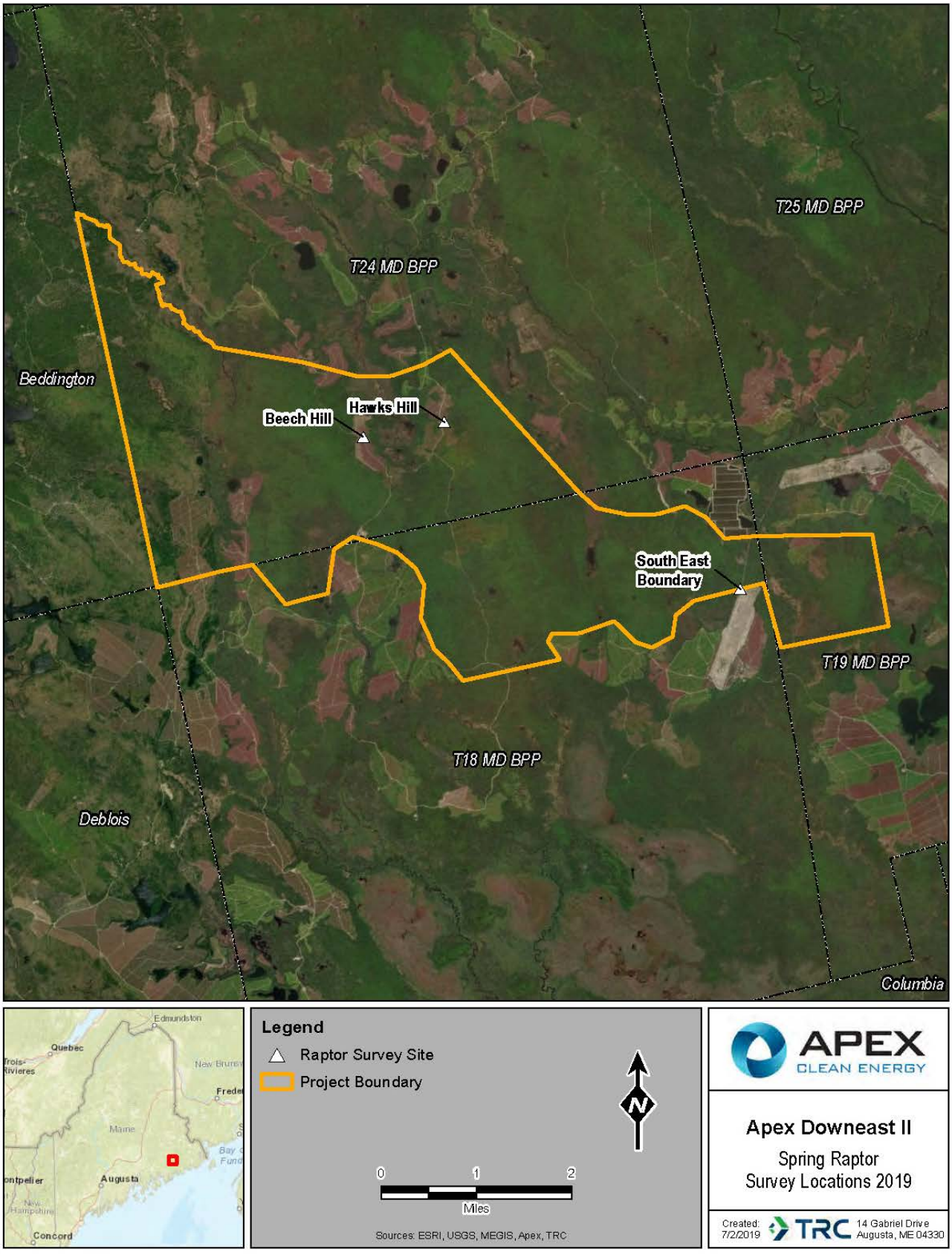
PROJECT AREA

The Apex Downeast II Project is a proposed 197.4 MW wind generating facility located in Washington County, ME. The Project Area is mostly forested with some active and inactive blueberry barrens.

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Figure 1: Project Area and Survey Locations



METHODS

Three different observation points were used for weekly surveys within the Project Boundary (Figure 1). The first site on Hawks Hill Rd was used for five of the first six surveys. Due to poor snow conditions on March 19th, surveys were conducted on the southeast boundary of the Project, as crews could not reach the Hawks Hill Rd site by truck or snowmobile. Surveys were moved to the Beech Hill Rd Site on March 27th for the remainder of the study, as the site had a wider view to the south than the Hawks Hill Site. The spring 2019 daytime raptor survey effort consisted of 221 hours and 26 minutes of observations between March 6 and June 14.

Observation points were selected to maximize views to the south for the spring migration season. Both the Hawks Hill Rd site and Beech Hill Rd site offered the best southern views within the Project boundary. Surveys were completed from 9am till two hours before sunset and all raptors including eagles were recorded.

At each survey point, the date, start and end time of the survey, and weather information (e.g., temperature, wind speed and direction, and cloud cover) were recorded for each survey. Species or best possible identification, number of individuals, sex and age class (if possible), flight height, activity (behavior), and flight path were recorded for each raptor observation.

RESULTS

A total of 91 individual raptors, representing 9 different species were observed (Table 1.1). The majority of these were turkey vultures (*Cathartes aura*), which compromised 74 percent (n=67) of all observations. The next most abundant species was bald eagle (*Haliaeetus leucocephalus*), which compromised 12 percent (n=11) of all observations (Table 1.1).

Table 1.1: Raptor species observed during the 2019 Spring Raptor Survey

Species	# of individuals	% Observations
Bald Eagle	11	12%
Broad-winged Hawk	2	2%
Coopers Hawk	1	1%
American Kestrel	4	4%
Merlin	1	1%
Osprey	1	1%
Red-Tailed Hawk	2	2%
Sharp-shinned Hawk	2	2%
Turkey Vulture	67	74%
Total	**91**	

The site on Beech Hill Rd had a passage rate of 0.5 raptors per hour (Table 1.2). Between all sites, the average passage rate was 0.41 raptors an hour. Data specific to bald eagles was also broken out in a separate table (Table 1.3).

Table 1.2: 2019 Spring Raptor Observations by hour (March 6, 2019 – June 14, 2019)

Site	Total Time (hours: minutes)	Total Raptors	Mean number of raptors/hour
South East Boundary	6:15	0	0
Hawks Hill Rd	34:47	1	0.029
Beech Hill Rd	180:24	90	0.50
All	221:26	91	0.41

Table 1.3: 2019 Eagles Observed During 2019 Spring Raptor Migration Surveys

Site	# of Bald Eagles	Eagles Per Minute
South East Boundary	0	0
Hawks Hill Rd	1	0.0005
Beech Hill Rd	10	0.00092

Raptor flight height during surveys consisted of 32%(n=29) of raptor observations below rotor swept height and 60%(n=55) within rotor swept height during some portion of their travel through the Project (Table 1.4). Of the observations within rotor swept height, 79% (n=43) were turkey vulture.

Table 1.4: 2019 Raptor Flight Height

Flight Height	# of individuals	% Observations
Below Turbine Height	29	32
Within Turbine Height	55	60
Above Turbine Height	7	8

THREATENED OR ENDANGERED SPECIES

There were no state or federally-listed endangered or threatened species observed during the spring 2019 raptor surveys.

CONCLUSION

This was the first season of raptor survey completed in the northern portion of the project; however, two years of surveys, including 2 fall and 2 spring migration periods, were completed between 2015-2017 in the southern Downeast I Project area.

Stantec conducted studies in Fall 2015, Spring 2016, Fall 2016, and Spring 2017 at the Apex Downeast I Site, south of the Downeast II Site. Each survey period is summarized below.

	Fall 2015	**Spring 2016**	**Fall 2016**	**Spring 2017**
Range of Survey Dates	9/9-11/25	3/1-6/16	8/2-11/22	3/16-3/15
No. Survey days	24	32	34	28
No. Survey hours	160	265.5	245	265.5
No. raptor species observed	9	12	13	11
Total no. observations of raptors	499	249	292	239
Mean no. raptor observations/hour	3.12	0.94	0.77	0.69
% of raptor observations below turbine height	90%	73%	86%	67%

Due to the low passage rate observed during this and previous studies completed at the site, we do not recommend completing additional fall raptor migration surveys.

LITERATURE CITED

Maine Department of Inland Fisheries and Wildlife (MDIFW). 2018. Maine Wind Power Preconstruction Recommendations and Turbine Curtailment Recommendations to Avoid/Minimize Bat Mortality.

Stantec Consulting Services Inc. 2017. Diurnal Raptor Migration and Use Report, Downeast Wind Project, September 2015 to November 2016.

Stantec Consulting Services Inc. 2017. Diurnal Raptor Migration Report, Downeast Wind Project, March 2017 to June 2017.

EXHIBIT 7-11: MITIGATION PROPOSAL

Downeast Wind Avian and Bat Risk Evaluation and Mitigation Proposal

Washington County, Maine

February 25, 2021

Prepared for:

Downeast Wind, LLC

Prepared by:

Stantec Consulting Services Inc.
30 Park Drive
Topsham, ME 04086

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LIST OF ATTACHMENTS

ATTACHMENT A MAINE WIND PROJECTS MORTALITY REPORT.... A.1

1.0 INTRODUCTION

Downeast Wind, LLC (Downeast) proposes to construct the Downeast Wind Project (Project) in Washington County, Maine. As part of permitting the Project, Downeast has been consulting with the Maine Department of Inland Fisheries and Wildlife (MDIFW) for the past several years. Due to the duration of ongoing communications, MDIFW provided a letter to Downeast summarizing their concerns, potential resolutions, and outstanding issues (dated June 28, 2019). The MDIFW letter addressed numerous natural resources to be considered during development of the Project; however, a key focus was placed on upland sandpiper (*Bartramia longicauda*), whimbrel (*Numenius phaeopus*), migrating songbirds, and bats. The purpose of this risk evaluation and mitigation proposal, which incorporates summaries of the MDIFW letter, is to identify the key Project impacts and avoidance and minimization measures that have been implemented to reduce potential impacts to upland sandpipers, whimbrels, migrating songbirds, and bats, along with a detailed mitigation plan that further provides a net conservation benefit to these species.

Since 2015, Downeast has performed numerous surveys to document natural resources and wildlife within the Project site. The results presented herein are not an exhaustive summary of all field survey efforts conducted for the Project, but rather focus on impacts, avoidance and minimization, and mitigation for the species/species groups for which MDIFW has expressed concern.

2.0 PROJECT OVERVIEW

2.1 PROJECT SITE

The Project site is located in the Town of Columbia and the unorganized townships of T18MD BPP and T24MD BPP in Washington County, Maine. The Project is sited within Maine's coastal plain region, as identified by the MDIFW, and within the North American Bird Conservation Initiative's Bird Conservation Region 14 (Atlantic Northern Forest). The Project site is associated with Pineo Ridge, an extensive glacial outwash delta and moraine complex dominated by sandy deposits across an open landscape with elevations ranging from approximately 50 to 250 feet. The primary land use in this area is commercial blueberry production. The landscape also includes a network of unpaved roads used to access blueberry barrens, seasonal camps, and adjacent forested uplands for timber harvesting. Upland forests include dense windrows through the blueberry barrens planted with jack pine (*Pinus banksiana*) and early successional rocky woodland communities dominated by Red Oak – Northern Hardwoods – White Pine Forest (Gawler and Cutko 2010) in various stages of regeneration. The understory ranges from sparse to densely vegetated depending on different past and ongoing private and commercial land uses.

2.2 PROPOSED PROJECT

The Project as proposed is expected to consist of 33 turbine locations (30 sited and 3 spare sites), access roads, underground collection, a meteorological (MET) tower, two temporary power performance towers, a substation, laydown areas, and associated infrastructure. An operations and maintenance facility is



proposed for a nearby location on U.S. Route 1 in Columbia, Maine. Anticipated nameplate capacity for the Project is 126 megawatts (MW) with an expected lifespan of 30 years once operational. Through multiple consultations with MDIFW since 2015, and after review of field survey results and feedback from MDIFW, Downeast has performed numerous Project layout iterations (39 to date) to avoid and minimize impacts to natural resources to the extent practicable.

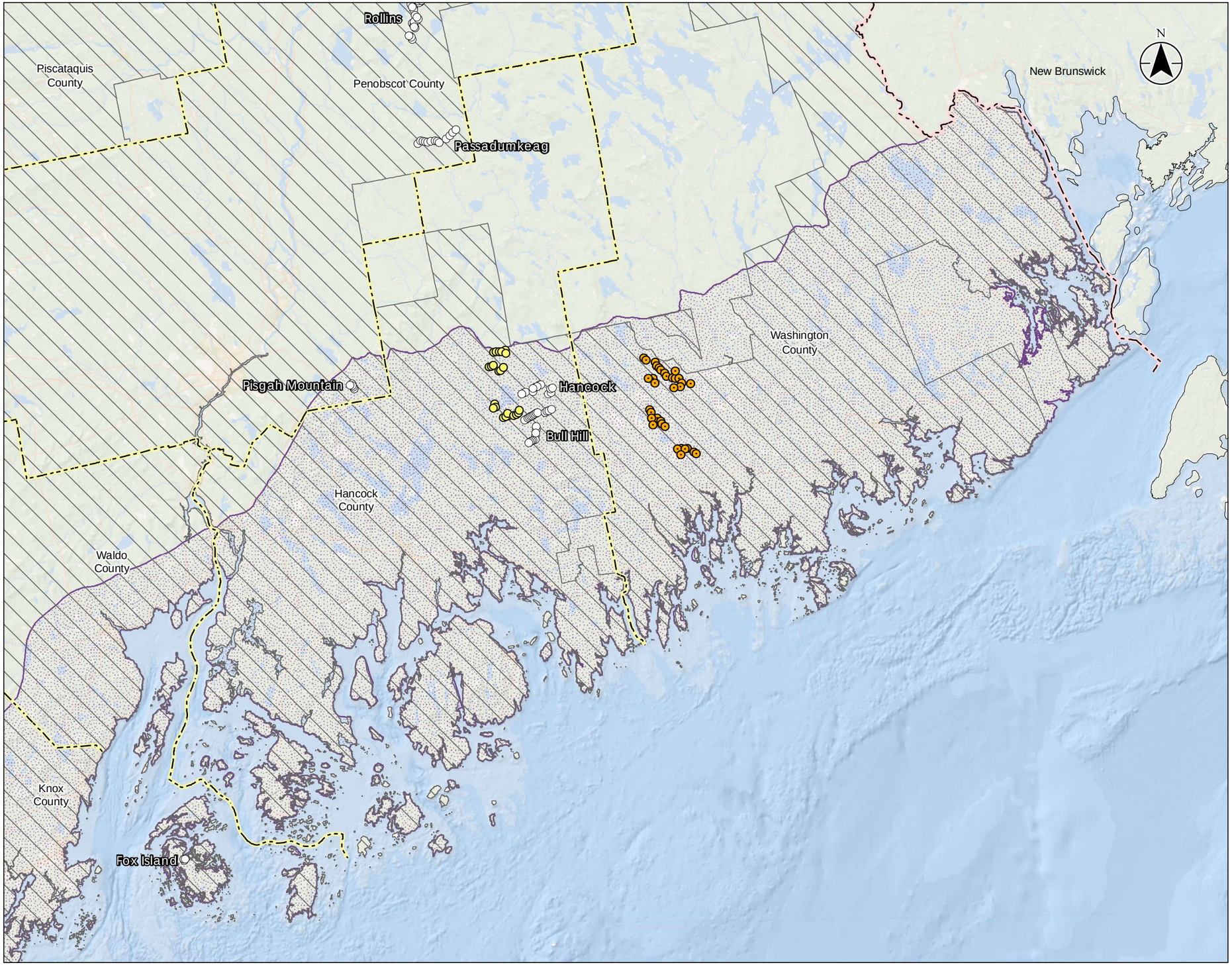
2.2.1 Comparison with Nearby Projects

In addition to statewide data, three wind projects near the Project were used for comparison to help inform use and potential risk at the Project: Bull Hill Wind Project (Bull Hill), Hancock Wind Project (Hancock), and Weaver Wind Project (Weaver). Bull Hill and Weaver provide pre-construction data for nocturnal migrating songbirds and bats in MDIFW's identified coastal plain region, and both Bull Hill and Hancock have 2 years of post-construction bird and bat fatality data.

Bull Hill is a 19-turbine facility capable of generating 34 MW located in Hancock County, Maine. Bull Hill, which went in service in 2012, is approximately 11.1 miles west of the proposed Project site and located within the coastal plain region (see Figure 1).

Hancock is a 17-turbine facility with a generating capacity of 51 MW located in Hancock County, Maine. Hancock, which is directly adjacent to Bull Hill and approximately 9.6 miles west of the proposed Project site, went in service in December 2016. As with Bull Hill, Hancock is located in Maine's coastal plain region (see Figure 1).

Weaver is a 22-turbine facility proposed in Hancock County, Maine with an installed capacity of approximately 73 MW that went in service in December 2020. Weaver is located approximately 13.7 miles west of the proposed Project site. As with Bull Hill and Hancock, Weaver is also located in Maine's coastal plain region (see Figure 1).

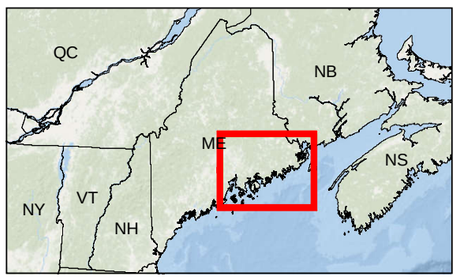


Stantec

Legend
- Proposed Downeast Wind Project Location
- Weaver Wind Project Location
- Operational Wind Project - Turbine Location
- Expedited Wind Permitting Area
- Coastal Plain (Maine IF&W)
- County Boundary
- State Boundary

0 10 20 Miles
1:633,600 (At original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 UTM Zone 19N
2. Maine coastal plain defined by Maine IF&W from EPA ecoregions.
3. Expedited wind permitting area defined by MDEP and LUPC.
4. Turbine locations mapped from U.S. Wind Turbine Database.
5. Base map: ESRI World Oceans base map



Project Location
Washington County, Maine

195601654

Prepared by GC on 2020-03-04
Technical Review by AP on 2020-03-04
Independent Review by AG on 2020-03-04

Client/Project
Downeast Wind Project

Figure No.
1

Title
Maine Coastal Plain in Downeast Maine

3.0 CONSULTATION HISTORY

- October 16, 2015: Initial Project information requests to state agencies, including MDIFW, MDEP, Maine Natural Areas Program (MNAP), and Maine Historic Preservation Commission (MHPC).
- February 23, 2016: Meeting with MDIFW to discuss wildlife surveys and study plans for the Project.
- March 3, 2016: Meeting with U.S. Fish and Wildlife Service (USFWS) to discuss potential Project impacts to federally listed species.
- January 19, 2017: Meeting with MDIFW to provide a Project update and review bird and bat studies.
- Based on feedback received during 2016 consultations, Downeast reduced the Project area by eliminating a large portion of land surrounding Montegail Pond. Much of the area eliminated consisted of blueberry barrens, where upland sandpipers are known to occur.
- March 2, 2017: Meeting with MDIFW to provide another Project update, review 2015-2016 survey results, and discuss 2017 study plans.
- May 31, 2017: Meeting with MDIFW to provide a Project update, review study results for bats and upland sandpipers, and discuss potential incidental take permitting.
- January 18, 2019: Interagency meeting with MDIFW and MDEP to provide a Project update and review completed studies and upcoming planned studies.
- February 20, 2019: Interagency meeting with MDIFW and USFWS to discuss potential Project impacts to upland sandpipers and whimbrels.
- April 26, 2019: Meeting with MDIFW to discuss results of field surveys for upland sandpipers and whimbrels, as well as research on these species from other sites in North America.
- November 19, 2019: Pre-Application Meeting with MDIFW, MDEP, MNAP, MHPC, and Maine Land Use Planning Commission.

4.0 UPLAND SANDPIPERS

The Project site contains suitable habitat for upland sandpiper during the species' breeding and staging seasons and is also within the migratory range of the species. In Maine, upland sandpiper, a state-listed threatened species, primarily breed in grassland-barrens recently managed for commercial blueberry production and, which are mainly seasonally maintained through mowing and burning (Vickery et al. 1994). Other areas known to support breeding upland sandpipers in Maine include grassy portions of airports and large areas of peatlands (Vickery et al. 1994; Weik 2006). The primary concerns for upland sandpipers are direct collision with turbines, habitat loss, and indirect effects of potential habitat displacement due to construction and operations.



4.1 SURVEYS

Spring grassland bird surveys were developed in consultation with MDIFW and conducted in and around the Project site from May 9 to June 23, 2016, and from April 24 to June 16, 2017 (Stantec 2018b). Summer/fall grassland bird surveys were performed from July 24 to September 9, 2016, and from August 7 to October 5, 2017. In total, grassland bird surveys were conducted at a total of 44 sites within MDIFW-mapped suitable upland sandpiper habitat. In 2016, a total of 40 sites were selected, including 16 sites within the Project area at the time. During 2017, grassland bird surveys were repeated at these same 16 sites within the Project area, at 9 sites previously surveyed in 2016 but outside of the Project area, and at an additional 4 new sites associated with recently installed MET towers. During the 2016 and 2017 surveys, upland sandpipers were detected at 32 (73%) of the 44 surveyed sites from May 3 to June 16, with no occurrences documented in fields less than approximately 35 hectares (90 acres) in size. Thirteen (81.3%) of the original 16 sites from these surveys remain within the most recent Project area. An additional three sites from the 2017 surveys associated with MET towers remain within the most recent Project area. Of these sites, upland sandpipers were detected at 10 (62.5%) of the 16 locations in 2016 and/or 2017. Twenty-nine (78%) of the total 37 upland sandpiper individuals from these sites were documented in May and June. Based on these survey results and a Project area of 7,100 hectares, the density estimate of upland sandpiper is approximately 0.005 per hectare. This estimate is lower than other survey estimates from 90 grassland-barrens sites in Maine (Vickery et al. 1994)

During the breeding season, courtship displays by upland sandpipers result in mated pairs (or individual males) rising from the ground to heights of around 30 meters (m) with a maximum height of 400 m, followed by a nearly vertical descent to the ground (Houston et al. 2011). During these displays, individual birds may fly at typical rotor sweep heights, leading to a heightened risk of collision. Outside of courtship displays, upland sandpipers fly slowly and at low elevations (Houston et al. 2011), presumably below the typical sweep of turbine blades. During grassland bird surveys at the Project site in 2016 and 2017, 13 of the total 16 (81%) observed upland sandpiper courtship displays were during mean wind speeds between 1.7 and 3.3 m per second (m/s) (Stantec 2018b). Only two courtship displays were observed when mean wind speeds were greater than 5.0 m/s. During these surveys, only two (12.5%) courtship displays reached anticipated rotor-sweep heights, estimated at 130 to 180 m above ground level.

4.2 LITERATURE SUMMARY ON WIND ENERGY EFFECTS

4.2.1 Collision

There are no records of upland sandpiper mortality at wind projects in Maine or the Northeast between 2006 and 2011 and there have been no reported mortalities from the nearby Bull Hill and Hancock wind projects. The Weaver Wind Project became operational in 2020 and is not required to completed post-construction monitoring by the agencies. In addition, Stantec maintains, and reviewed, an internal database containing 21 years of publicly available post-construction mortality (PCM) data (1997–2018), for wind projects in the U.S. and Canada, including 67 projects within the upland sandpiper's range. These projects have documented 7 upland sandpiper mortalities in 21 years, all of which occurred in Ontario, Canada and the midwestern U.S. Four of the mortalities occurred at facilities in Ontario, three at the Wolfe Island Wind



Plant (86 turbines; Stantec 2010, Stantec 2011a), and one at the Kruger Energy projects[1] (88 turbines; Stantec 2012). The remaining three mortalities occurred in the Great Plains: two at Tatanka Wind Farm (120 turbines; Graff et al. 2016) in North Dakota and South Dakota, and one at Ainsworth Wind Farm (36 turbines; Derby et al. 2007) in Nebraska.

Howe et al. (2002) spent more than 1,200 field hours investigating bat and bird mortality at 31 wind turbines in northeastern Wisconsin between 1998 and 2001. Upland sandpipers were observed a total of 297 times during diurnal point counts of the turbine sites and a reference site with regular observations in the vicinity of turbines. However, no upland sandpipers were recovered as fatalities during the study. In Canada, PCM studies of 65 wind facilities documented that upland sandpipers represent 0.27% of all mortalities recorded (Bird Studies Canada 2016). None of these studies implemented any operational controls for avoiding collision risk. The American Wind and Wildlife's Institute's (AWWI) bird fatality technical report (2019) examined 193 PCM studies at 130 wind energy projects throughout the U.S. from 2002 to 2017. Note that AWWI's reporting period overlaps with, but is different from, the reporting period reviewed by Stantec in the preceding paragraph. While there is likely overlap between the two reviews, this difference, in addition to AWWI's access to non-public data, results in different mortality results. This included 70 studies from 56 wind energy projects or phases in the Prairie avifaunal biome where upland sandpiper populations are greatest. Only six upland sandpiper mortalities from a total of four studies were noted, representing less than 0.1% of recorded mortalities (AWWI 2019). All mortalities occurred within the Central Mixed Grass Prairie and Shortgrass Prairie Bird Conservation Regions, where habitat for upland sandpiper is more abundant and populations are greater.

The Northern Great Plains contains much of North America's remaining temperate grasslands, providing important habitat for birds, including many species of grassland-dependent birds such as upland sandpiper. This region also contains more than 2,200 operating wind turbines (Graff et al. 2016), including the 120-turbine Tatanka Wind Farm and the 41-turbine Edgeley-Kulm Wind Farm. The Tatanka Wind Farm, commissioned in 2008, is sited on approximately 14,080 acres in North and South Dakota. Over 90% of turbines at the Tatanka Wind Farm were located in grassland or pasture when the project was constructed (Graff et al. 2016). The Edgeley-Kulm Wind Farm in North Dakota was commissioned in 2003, and all turbines, except for one, were sited in row-crop (e.g., corn, soybean) agricultural fields. Two consecutive years of PCM surveys were performed at each of these two facilities, totaling 2,398 carcass searches around operational turbines. The PCM sampling period coincided with spring migration, as well as the initial nesting period for most grassland nesting birds (March-June). A total of 92 mortalities were documented, 2 (2%) of which were determined to be upland sandpiper, both documented at Tatanka Wind Farm.

4.2.2 Displacement and Use

Studies have also been performed to determine if wind facilities placed in native mixed-grass prairies displace breeding grassland birds. One study evaluated three wind facilities in North and South Dakota using a before-after-control-impact (BACI) assessment (Shaffer and Buhl 2016). The three study sites included Tatanka Wind Farm, Oliver Wind Energy Center in North Dakota, and South Dakota Wind Energy Center. These facilities were situated within expanses of native grassland within a larger landscape

[1] Kruger Energy projects includes Kruger Energy Chatham and Kruger Energy Port Alma.

characterized by rolling plains interspersed with wetlands, mixed-grass prairie pastures, and few planted grasslands, hayfields, or cropland.

Results of the BACI assessment indicated no change in upland sandpiper nesting density following construction at the Tatanka Wind Farm (Shaffer and Buhl 2016). At the other two wind facilities, displacement behavior of upland sandpipers was observed following construction. At the Oliver Wind Energy Center, displacement behavior within 1 year was documented but only within 100 m of turbines, and with no effect beyond 100 m. After the first year, displacement behavior was observed at both the Oliver Wind Energy Center and the South Dakota Wind Energy Center. However, displacement behavior was similar to the first year of displacement and only occurred within 100 m of turbines at the Oliver Wind Energy Center. At the South Dakota Wind Energy Center, overall habitat displacement was observed, as well as some habitat displacement beyond 300 m. Pearce-Higgins et al. (2009) and as cited in Gove et al. (2013), referenced by MDIFW, noted habitat displacement by Eurasian curlew (*Numenius arquata*) up to 800 m away from turbines at wind facilities in the United Kingdom. The applicability of this study to understanding habitat displacement for upland sandpiper at the Project, however, is uncertain because these data were collected on a different species and outside North America. The previously described Shaffer and Buhl (2016) study was purposely designed to examine upland sandpiper habitat response to wind facilities and also occurred within the core geographic range of the species.

As is evident in the Shaffer and Buhl (2016) study results, displacement can vary by facility based on undetermined variables. It is important to consider the substantial distinctions between the surveyed facilities and the proposed Project, such as location and facility size. All of these projects occur in the Great Plains where native short grass prairie grassland habitat conditions are more abundant for upland sandpiper and where the upland sandpiper population is drastically greater than Maine (Cornell University 2017; Hodgman 2006; MDIFW 2011). Additionally, there are more than 2,200 operating wind turbines in the Great Plains Region (Graff et al. 2016), compared to the 58 operating wind turbines in the coastal plain region of Maine.

The Buffalo Ridge wind development area comprises three different facilities on Buffalo Ridge, Minnesota. The first facility was constructed in 1994 and consisted of 73 turbines (25 MW). In 1998, another 143 turbines capable of generating approximately 107 MW were added to Buffalo Ridge. The third Buffalo Ridge facility, capable of generating approximately 104 MW, was completed in 1999. The Buffalo Ridge study area consists of a 62-mile segment of the Bemis Moraine in southwest Minnesota. Vegetation types in the study area are primarily composed of agricultural crops (including corn, soybeans, small grains, and hay), pasture, and United States Department of Agriculture Conservation Reserve Program grasslands.

A BACI analysis was performed to determine potential wind power development area effects on 22 species of breeding grassland birds in the Buffalo Ridge area (Johnson et al. 2000). Trends in use for grassland breeding species recorded during point count surveys conducted over the four-year study period varied by year and study area. In 1999, 2 years after construction of the second Buffalo Ridge facility, use of turbine plots was lower than expected for all grassland breeding species combined. However, data specific to upland sandpiper use showed no significant difference following construction. A BACI analysis was also used to examine potential large-scale wind development effects at roadside plots; no significant effects were detected for upland sandpiper. Overall, Johnson et al. (200) found 7 of the 22 species of grassland



breeding birds showed reduced use near turbines, with the area of reduced use primarily occurring within 100 m of turbines. The authors concluded that at the regional scale, reduced use by birds associated with wind power development appears to be relatively minor and would not likely have any population consequences on a regional level. In conclusion, both comprehensive studies showed that displacement of upland sandpipers was not significant at most wind facilities and would likely not have a population effect at the regional level. Based on the results of these two studies, purposely designed to examine avian (including upland sandpiper) habitat use in response to wind facility development, and the small amount of marginal habitat that a few turbines intersect based on the current project layout, 100 m is a recommended distance for considering potential habitat effects to upland sandpiper from the Project.

4.2.3 Density

Bird and bat PCM surveys were conducted at the Wolfe Island Wind Plant, which is a 197.8-MW wind facility composed of 86 turbines on approximately 16,800 acres in the Township of Frontenac Islands, Ontario. BirdLife International, in cooperation with Bird Studies Canada and Nature Canada, has identified Wolfe Island as an Important Bird Area due to the presence of globally and continentally significant numbers of waterfowl species that congregate offshore during spring migration (BirdLife International 2020). Additionally, high quality grassland habitat on Wolfe Island supports an abundance of diverse grassland breeding bird species of conservation priority and also attracts wintering raptors.

Recognizing the Important Bird Area designation for waterfowl and the importance of the area to breeding grassland birds and wintering raptors, extensive pre-construction data were collected through multi-year bird and bat baseline studies on Wolfe Island (Stantec 2014b). These data were augmented with data from published and unpublished sources to generate a robust dataset from which to assess the potential effects of the project during operations. Specific to grassland birds, pre-construction point count surveys were conducted in 2006 and 2007, with post-construction point count surveys in 2010 through 2012. Paired point count surveys and area searches for grassland breeding birds were also performed. Results of the paired point count surveys did not detect a noticeable change in density within 0 to 100 m from turbines or 100 to 200 m from turbines. Of additional note, an upland sandpiper nest was found within 35 m of a turbine. In conclusion, the survey data indicated that upland sandpiper nesting density was not affected by the wind facility.

4.3 POTENTIAL IMPACTS

The Project has the potential to result in direct and indirect impacts to upland sandpipers. Potential direct impacts may include minor habitat loss and incidental take of upland sandpiper due to collision, and potential indirect impacts may include displacement due to construction of vertical structures in potentially suitable habitats. However, through consultation with MDIFW and implemented avoidance and minimization measures, both direct and indirect impacts have been significantly minimized due to reduction in the overall number of turbines within suitable habitat.

4.3.1 Collision

Upland sandpiper populations in areas where collision mortalities have been documented are substantially higher than the estimated population size in Maine. Upland sandpiper populations are highest in the native prairie lands of the Great Plains (Cornell University 2017). Specifically, in North Dakota, population estimates for upland sandpiper are approximately 198,000, as reported in 1993 (Igl and Johnson 1997 as cited in Vickery et al. 2010). Population estimates for upland sandpiper in Canada are approximately 10,000 (Morrison et al. 2001 as cited in Vickery et al. 2010), with the breeding distribution of upland sandpipers primarily concentrated in four provinces: Ontario, Manitoba, Saskatchewan, and Alberta. In Maine, the upland sandpiper population in the 1990s was estimated to be in excess of 320 (Hodgman 2006), with more recent estimates at approximately 200 pairs (MDIFW 2016).

Based on publicly available data reviewed by Stantec, in 2016 there were approximately 2,200 operating wind turbines and three documented upland sandpiper collision mortalities in the Great Plains. Relative to the Great Plains, the northeastern U.S. supports a small proportion of North America's breeding upland sandpipers (Weik 2006). Given that documented collision mortality is extremely low in areas with high populations of upland sandpipers and at projects without curtailment, it is reasonable to estimate that the collision mortality risk to upland sandpipers in Maine, where the population is small, would be even lower. Lastly, collision risk is expected to be further limited to only the courtship period when individuals may reach rotor sweep heights.

4.3.2 Habitat and Displacement

To determine potential upland sandpiper impacts from the Project as currently designed, habitat impacts were evaluated based on the following (Table 1):

1. Permanent impacts from the physical location of access roads and turbines in upland sandpiper habitat;
2. Temporary impacts[2] due to construction; and
3. Displacement effects from turbines using 100 m as supported by available literature.

Estimated Permanent Habitat Impacts

As the Project is currently designed, approximately 4.56 acres of permanent habitat impacts will occur as a result of Project access roads (4.25 acres) and turbine pads (0.31 acres). Based on habitat mapping by the MDIFW, approximately 11,005 acres of available upland sandpiper habitat is located immediately adjacent to the Project footprint (Figure 2). This area includes fields that are within or intersected by the project but extend well outside of the project boundary. Turbine impacts are associated with one turbine (T30) that clips the edge of potentially suitable upland sandpiper habitat (0.31 acres). The 4.56 acres of

[2] Areas of temporary impacts will be revegetated following Project construction.

estimated permanent habitat impacts from improvements to existing roads represent 0.04% of the 11,005 acres of upland sandpiper habitat adjacent to the Project footprint.

Turbines and Meteorological Towers

To calculate the amount of land from which upland sandpipers may be potentially displaced from turbines, Stantec applied the peer-reviewed average habitat displacement estimate of 100 m (Shaffer and Buhl 2016). Direct habitat impacts associated with turbines will only occur from one turbine, T30. Turbine T30 is located within 50 m of forest edge and provides marginal habitat since upland sandpipers do not generally occur within approximately 50 m of the forest edge. The impact calculation for this turbine considered only the portion of area in the northeastern portion of the turbine pad and excluded the area within 50 m of the forest edge (Figure 2) The habitat impacted from T30, while mapped as upland sandpiper habitat, is conservatively included in the impact calculations although currently is inactive blueberry barren with early successional tree regeneration. It is important to note that areas converting to forest with increasing woody stems are less suitable for upland sandpipers. However, due to known plans for this area to be potentially re-established as future commercial blueberry barrens, the 0.31 acres has been included in the impact calculations for turbines.

Three turbines (Turbine 22, 30, and 31 A) could potentially result in displacement impacts. In addition to turbines, potential displacement effects were also calculated from one MET tower north of T30. The displacement estimates for turbines and MET tower is 7.72 acres (Figure 3). This calculation excludes marginal habitat within 50 m of tree lines but includes habitat loss along existing road corridors that are unlikely to be suitable nesting habitat for upland sandpipers due to proximity to the road. At T22, a small portion (0.03 acres) of the area within 100 m provides potential upland sandpiper habitat. This area is adjacent to an existing road and greater than 50 m from the forest edge to the west and 50 m from a mature hedgerow to the east. Turbine 31a consists of 1.11 acres of upland sandpiper habitat displacement impact. This area is adjacent to forest edge and includes portions of an old private road. Turbine 30 includes a potential displacement area of 2.71 acres of mapped habitat but much of this habitat is currently inactive blueberry barren with patches of early successional tree species. The MET tower north of T30 has the potential to displace up to 3.86 acres of habitat but this area is currently marginal habitat, consisting of inactive blueberry barren with patches of early successional trees species and bordered to the north and east by a gravel road and to the west by a secondary two track road.

During upland sandpiper surveys in 2016 and 2017, no upland sandpipers were detected during either year from a point located approximately 150 ft northeast of the proposed T30 location. Similarly, no upland sandpipers were detected in 2016, and two were observed in 2017, at a survey point located approximately 1,300 ft east of the T22 location in a blueberry barren containing hedgerows. As noted above, Turbine 31a is located adjacent to a blueberry barren with hedgerows and approximately 4,200 ft north of two survey points. During 2016 and 2017, a total of five upland sandpipers were observed from these two locations.



Project: Downeast Wind

- Proposed Turbine Layout
- Proposed MET

Proposed Limits of Disturbance Impacts

- Permanent Impact
- Temporary Disturbance
- No Impact (Unsuitable/Disturbed Habitat)
- MDIFW Upland Sandpiper Habitat > 50m from forest edge
- MDIFW Upland Sandpiper Habitat
- Town Border

Total Permanent Impact
7.59 Acres or 3.07 Hectares

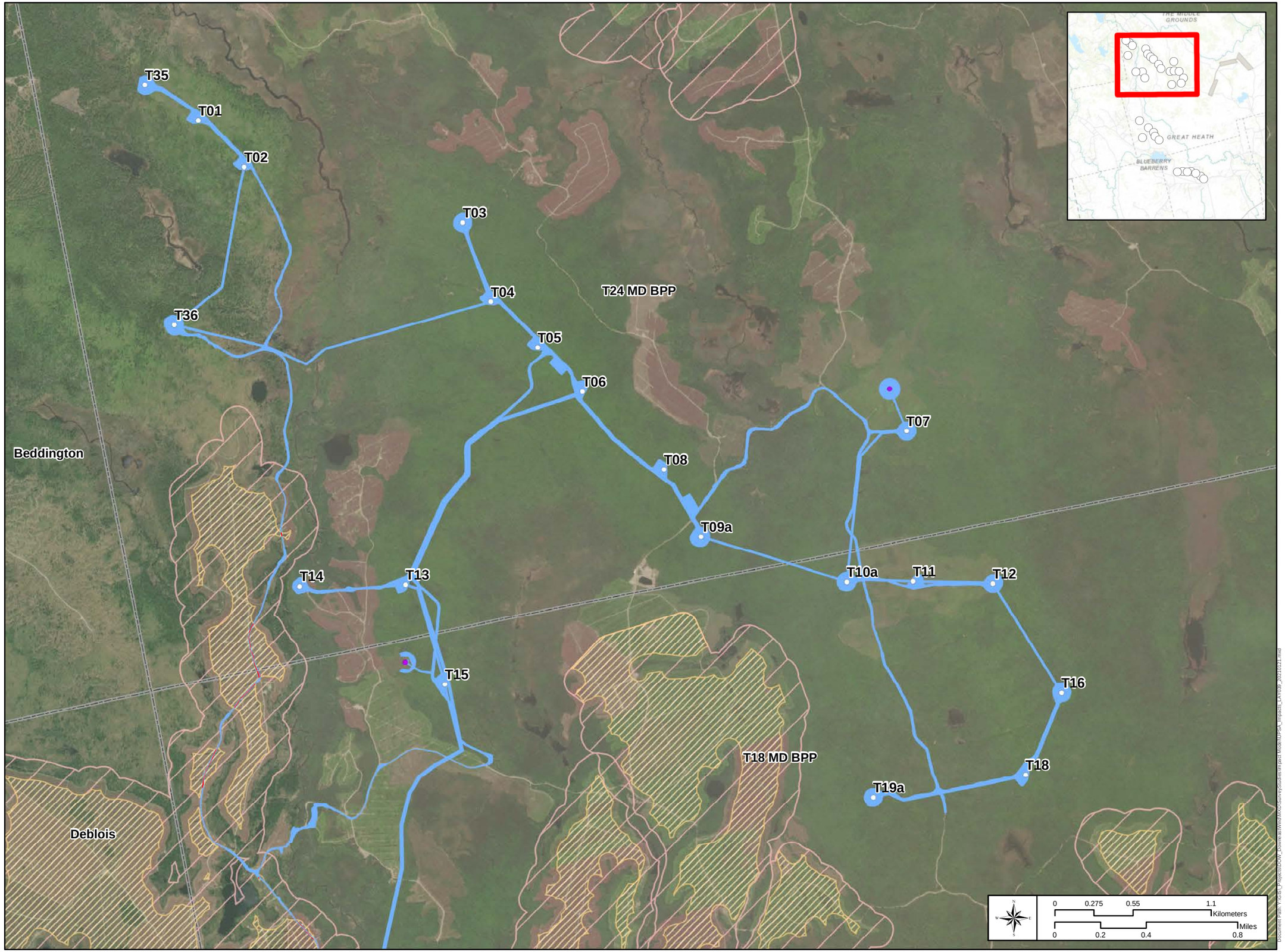
Total Temporary Disturbance
14.34 Acres or 5.80 Hectares

Figure 2. Habitat Impacts
Sheet 1 of 3

Date: 2/2/2021 Author: GIS *CONFIDENTIAL*

Coordinate System: NAD 1983 HARN StatePlane Maine East FIPS 1801 Feet
Projection: Transverse Mercator
Datum: North American 1983 HARN
Units: Foot US

APEX CLEAN ENERGY



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Project: Downeast Wind

- Proposed Turbine Layout
- Proposed MET

Proposed Limits of Disturbance Impacts

- Permanent Impact
- Temporary Disturbance
- No Impact (Unsuitable/Disturbed Habitat)
- MDIFW Upland Sandpiper Habitat > 50m from forest edge
- MDIFW Upland Sandpiper Habitat
- Town Border

Total Permanent Impact
7.59 Acres or 3.07 Hectares

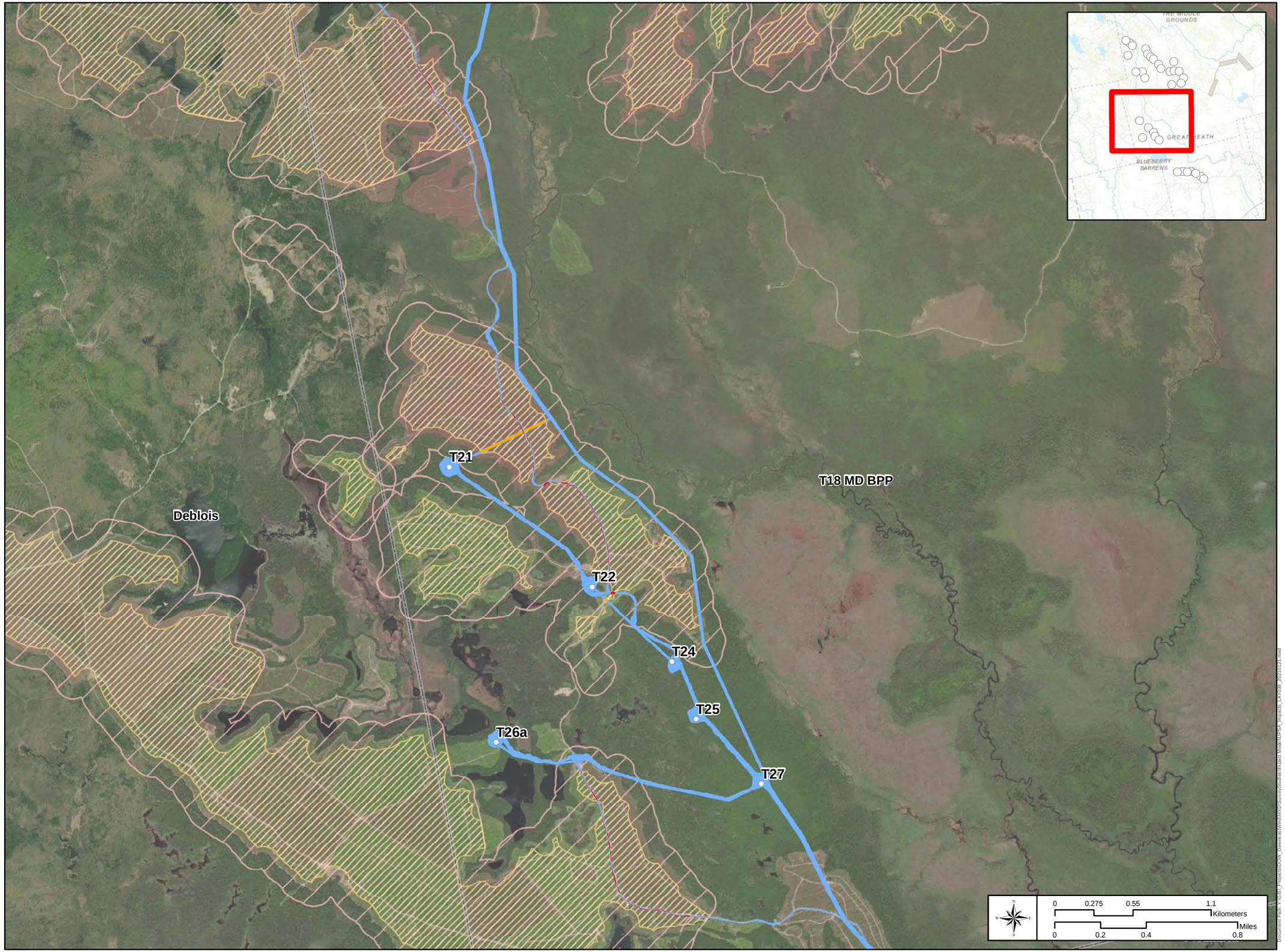
Total Temporary Disturbance
14.34 Acres or 5.80 Hectares

Figure 2. Habitat Impacts
Sheet 2 of 3

Date: 2/2/2021 Author: GIS *CONFIDENTIAL*

Coordinate System: NAD 1983 HARN StatePlane Maine East FIPS 1801 Feet
Projection: Transverse Mercator
Datum: North American 1983 HARN
Units: Foot US

APEX CLEAN ENERGY



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Project: Downeast Wind

- Proposed Turbine Layout
- Proposed MET

Proposed Limits of Disturbance Impacts

- Permanent Impact
- Temporary Disturbance
- No Impact (Unsuitable/Disturbed Habitat)
- MDIFW Upland Sandpiper Habitat > 50m from forest edge
- MDIFW Upland Sandpiper Habitat
- Town Border

Total Permanent Impact
7.59 Acres or 3.07 Hectares

Total Temporary Disturbance
14.34 Acres or 5.80 Hectares

Figure 2. Habitat Impacts
Sheet 3 of 3

Date: 2/2/2021 Author: GIS *CONFIDENTIAL*

Coordinate System: NAD 1983 HARN StatePlane Maine East FIPS 1801 Feet
Projection: Transverse Mercator
Datum: North American 1983 HARN
Units: Foot US

APEX CLEAN ENERGY



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Project: Downeast Wind

- Proposed Turbine
- Proposed MET
- Potential UPSA Displacement
- Proposed Design
- MDIFW Upland Sandpiper Habitat > 50m from forest edge
- MDIFW Upland Sandpiper Habitat
- Town Border

Total Displacement Area
7.72 Acres or 3.12 Hectares

Figure 3. Habitat Displacement Impacts
Sheet 1 of 4

Date: 2/17/2021 Author: GIS *CONFIDENTIAL*

Coordinate System: NAD 1983 HARN StatePlane Maine East FIPS 1801 Feet
Projection: Transverse Mercator
Datum: North American 1983 HARN
Units: Foot US

APEX CLEAN ENERGY



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Project: Downeast Wind

- Proposed Turbine
- Proposed MET
- Potential UPSA Displacement
- Proposed Design
- MDIFW Upland Sandpiper Habitat > 50m from forest edge
- MDIFW Upland Sandpiper Habitat
- Town Border

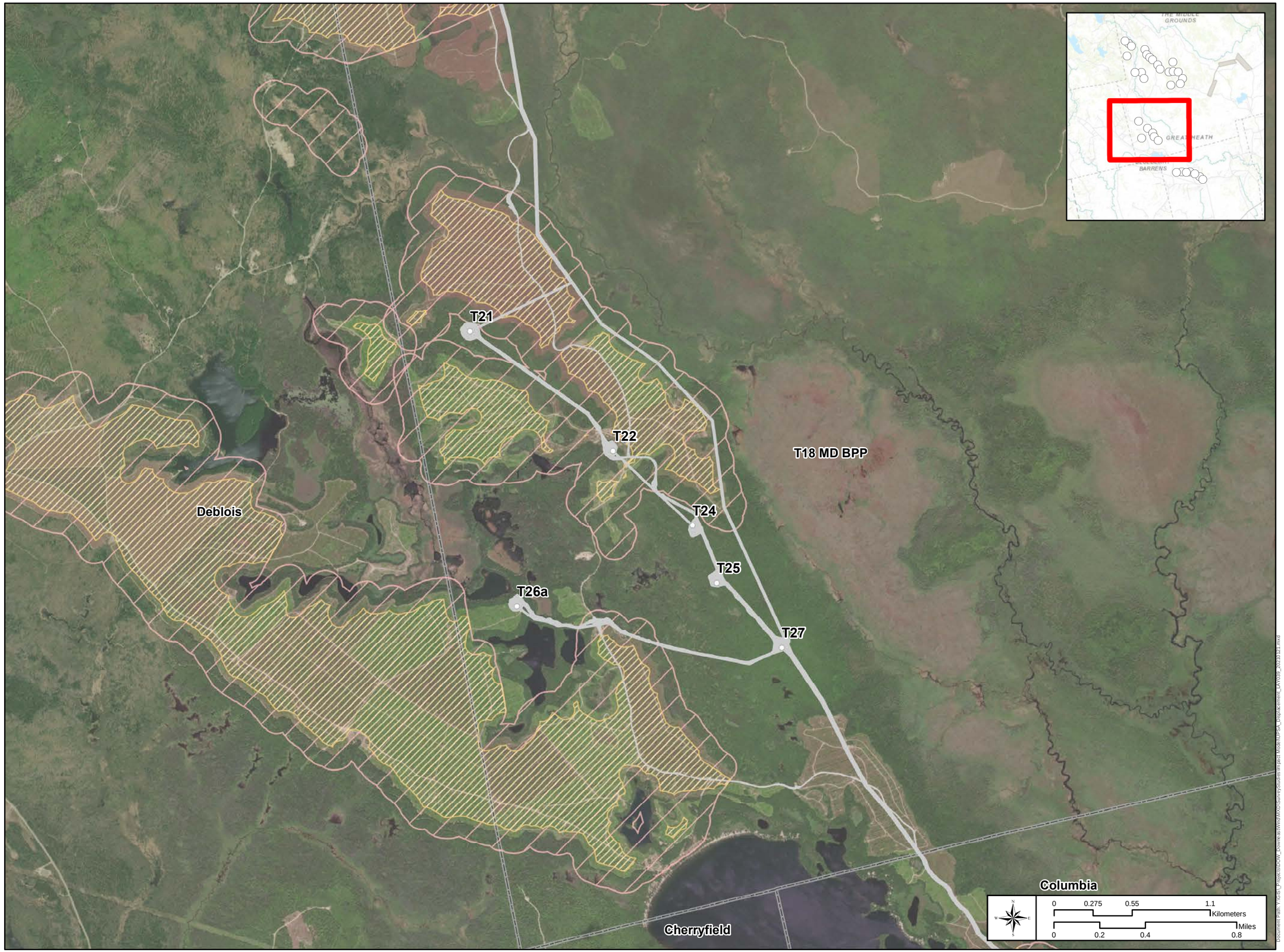
Total Displacement Area
7.72 Acres or 3.12 Hectares

Figure 3. Habitat Displacement Impacts
Sheet 2 of 4

Date: 2/17/2021 Author: GIS *CONFIDENTIAL*

Coordinate System: NAD 1983 HARN StatePlane Maine East FIPS 1801 Feet
Projection: Transverse Mercator
Datum: North American 1983 HARN
Units: Foot US

APEX CLEAN ENERGY



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Project: Downeast Wind

- Proposed Turbine
- Proposed MET
- Potential UPSA Displacement
- Proposed Design
- MDIFW Upland Sandpiper Habitat > 50m from forest edge
- MDIFW Upland Sandpiper Habitat
- Town Border

Total Displacement Area
7.72 Acres or 3.12 Hectares

Figure 3. Habitat Displacement Impacts
Sheet 3 of 4

Date: 2/17/2021 Author: GIS *CONFIDENTIAL*

Coordinate System: NAD 1983 HARN StatePlane Maine East FIPS 1801 Feet
Projection: Transverse Mercator
Datum: North American 1983 HARN
Units: Foot US

APEX CLEAN ENERGY



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Project: Downeast Wind

- Proposed Turbine
- Proposed MET
- Potential UPSA Displacement
- Proposed Design
- MDIFW Upland Sandpiper Habitat > 50m from forest edge
- MDIFW Upland Sandpiper Habitat
- Town Border

Total Displacement Area
7.72 Acres or 3.12 Hectares

Figure 3. Habitat Displacement Impacts
Sheet 4 of 4

Date: 2/17/2021 Author: GIS *CONFIDENTIAL*

Coordinate System: NAD 1983 HARN StatePlane Maine East FIPS 1801 Feet
Projection: Transverse Mercator
Datum: North American 1983 HARN
Units: Foot US

APEX CLEAN ENERGY



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Access Roads

No new roads will be constructed in upland sandpiper habitat and habitat impacts are limited to existing road widening and upgrades along the edges of existing road.

Estimated Temporary Habitat Impacts

Temporary impacts due to construction are largely associated with the underground collection system, which will be trenched during construction but immediately re-laid and allowed to revegetate following construction. A total of 14.32 acres of temporary impacts will occur for the underground collection system during construction. The majority of these impacts are collection lines will be co-located of within existing roads.

Table 1. Upland Sandpiper Habitat Impacts

Design Feature	Impact Type	Impact Acres
Access Road / Crane Path / Grading Limits	PERM	7.27
Turbine Pad (T30)	PERM	0.31
Total Impacts	**PERM**	**7.59**
Design Feature	**Impact Type**	**Displacement Acres**
Turbine T22	100-m Displacement	0.03
Turbine T30	100-m Displacement	2.71
Turbine T31a	100-m Displacement	1.11
MET Tower	100-m Displacement	3.86
Assumed Impact for Mitigation	**Total Displacement**	7.72
	Total PERM	7.59
	Total	**15.31**

As calculated in accordance with the above, the Project currently results in a total of 15.31 acres of upland sandpiper habitat impacts when considering direct habitat loss and potential habitat displacement, which represents only 0.13% of suitable upland sandpiper habitat adjacent to the Project footprint.

4.4 IMPLEMENTED AVOIDANCE AND MINIMIZATION MEASURES

The Project has undergone numerous design iterations to avoid upland sandpiper habitat to the greatest extent possible. In winter 2016, 25 turbines were proposed in upland sandpiper habitat. Subsequently, numerous design revisions have resulted in only one turbine being located in upland sandpiper habitat and displacement impacts associated with two additional turbines and a MET tower. As a result of these Project revisions, direct habitat impacts from turbines only have been reduced from a total of approximately 6.25[3] acres to 0.31 acres from a single turbine (T30). Further, these turbine locations and MET tower have been

[3] Earlier project layouts did not include civil design. Therefore, an assumed turbine pad area of 0.25 acre was selected.

microsited within 50 m of forest edge to further minimize potential habitat displacement effects. As noted previously, upland sandpipers are expected to avoid open areas closer than 50 m to mature vegetation. Project access roads and collection lines have also been sited away from suitable upland sandpiper habitat to the extent practicable, and the length of roads and collector lines within suitable habitat has been minimized. While some existing roads will be upgraded, there are no new roads proposed within upland sandpiper habitat. As designed, the Project does not fragment available upland sandpiper habitat which consists of large open fields, preferably greater than 125 to 150 acres (Vickery et al. 1994; MDIFW 2011). The Project layout considered potential habitat effects to areas near this threshold by co-locating project infrastructure to avoid fragmenting habitat or reducing the size of remaining available habitat that could lead to complete avoidance of the area, regardless of habitat quality. While habitat impacts have been limited to the edge of sandpiper habitat near one turbine or limited to upgrades at existing roads, the Project will work with MDIFW, if necessary, to consider measures to avoid potential impacts during construction.

The Project does not anticipate impacts to upland sandpiper from direct take via collision because turbines have been micro sited towards the edge of open habitat and within 50 m of the forest edge. This is based on the assumption that upland sandpipers will generally avoid these areas of marginal habitat and not be exposed to turbine activity.



5.0 WHIMBRELS

The Project site is within the migratory range of whimbrel, a Species of Special Concern in Maine. During fall migration, whimbrels concentrate at inland feeding sites where they forage in blueberry barrens and fields during the day and congregate at communal roosts at night (Ferns et al. 1979). In the Project area, whimbrels are known to move between coastal mudflats in nearby towns and blueberry barrens during daily roosting and foraging activities (MDIFW 2018c). Survey data collected in the 1980s and early 1990s suggest this region supported an estimated 600 whimbrels using blueberry barrens and intertidal habitats (Tudor 2017). The blueberry barrens in the Downeast Region are estimated to annually support approximately 100–200 whimbrels (Tudor 2017).

Whimbrels may stopover along Maine's coastal plain and use blueberry barrens between roughly July 15 and September 15, based on MDIFW survey results (MDIFW 2018c), but residence times for individual birds are unknown. Observations of whimbrels in Maine on eBird (n = 2,297) are concentrated along the coast between July and September, consistent with MDIFW observations (eBird 2020). Fall migratory routes of whimbrels and level of passage overland through Maine are not well understood; however, satellite tracking of fall routes by The Center for Conservation Biology and Canadian Wildlife Service showed a direct west to east overland passage of three whimbrels from Eastern Canada through the Maritimes (well north of the Project area), before beginning a direct open-ocean flight to South America (CCB 2012). Mean travel length (or days) of satellite tracked birds during fall migration from their breeding grounds in Canada to their Caribbean/South American wintering sites was 45.3 ± 2.2 days (Watts et al. 2019). Preliminary data from Virginia's coast indicated fall migrating whimbrels staged for 23 to 36 days before continuing their flight south (Smith et al. 2010). Individuals arriving later in the fall season appeared to stage for a longer period than those arriving earlier in the season. The primary concerns for whimbrel include potential collision with wind turbines and potential displacement.

5.1 SURVEYS

As previously described, grassland bird surveys were developed in consultation with MDIFW and were conducted at the Project in 2016 and 2017. No whimbrels were observed in the Project area during these survey periods (Stantec 2018b). Additionally, no incidental observations of whimbrels occurred while biologists were in the Project area performing other avian use surveys for the Project (e.g., breeding bird surveys, raptor migration surveys).

5.1.1 Whimbrel Observations

Whimbrels have been documented outside but adjacent to the Project area incidentally during avian use and grassland bird survey efforts (Stantec 2018b). A flock of approximately 50 whimbrels was observed on July 24, 2017, in a large, open area several miles west of the Project area in Deblois. During a site visit with MDIFW, approximately 108 whimbrels were observed northwest of the Project site near Schoodic Lake on July 27, 2019. As noted in their June 28, 2019 letter, MDIFW documented whimbrels at blueberry barrens near Schoodic Lake (Deblois, Cherryfield, Columbia), less than 1 mile west of turbine areas, during surveys in July and August 2016 and 2017. It is recognized that whimbrel foraging use of blueberry barrens is



dependent on active blueberry production and areas of use may change depending on areas that are in production. MIDFW observations in 2016 and 2017 were in expansive areas consisting of dense blueberry and lacking windrows.

5.2 LITERATURE SUMMARY ON WIND ENERGY EFFECTS

The Atlantic Canada region (particularly New Brunswick, Prince Edward Island, Nova Scotia, and Newfoundland) has been identified as a staging area for whimbrels during fall migration. Also, within the Atlantic Canada region, blueberry production is extensive, with approximately 11,000 to 13,000 hectares of blueberry barrens in New Brunswick alone (Smith and Watts 2015). To better understand population size and habitat use of whimbrels on the Acadian Peninsula of New Brunswick, aerial and ground surveys during fall migration were performed on the Acadian Peninsula, including approximately 1,448 hectares of blueberry barrens. Survey results indicate that the Acadian Peninsula appears to support a significant portion of the total whimbrel population that uses Atlantic Canada during fall migration. Additionally, over 99% of all whimbrels detected originated from blueberry barrens, suggesting that tidal influences on behavior are negligible.

The Wind Energy Bird and Bat Mortality Monitoring Database includes mortality data for five wind facilities (92 total turbines) in the Atlantic Canada region. Despite high whimbrel use in this area during fall migration, no whimbrel mortalities have been documented at any of these facilities (Bird Studies Canada 2016). One of these facilities is in Lingan, Nova Scotia, and consists of seven turbines that began operating in 2007. The Lingan Wind Farm is located along the northeastern coast of Nova Scotia, immediately adjacent to the Atlantic Ocean, and occurs within the Atlantic Flyway.

Post-construction bird monitoring was conducted at this facility to document bird use around the turbines and bird mortality due to the turbines and to evaluate which species were most at risk of collision due to their behavior (McCorquodale 2009). Point count surveys were performed from June 2008 to May 2009 to document bird use of areas around the turbines. Carcass searches were conducted to document bird mortality resulting from the facility. To determine species potentially at risk of colliding with the turbines, observational surveys were performed to count the number of birds flying between turbines, with attention to those at the height of the turbine blades.

The same species that commonly nested at the site in 2005 were also the most common nesting birds observed in 2008 (McCorquodale 2009). Additionally, the assemblage of birds that foraged and roosted around the wind turbines from 2008 through 2009 was similar to those observed during pre-construction surveys performed in 2005. Point count surveys conducted at the facility from June to August 2008 identified whimbrel as one of the 25 most frequent summer species observed; however, no whimbrel fatalities were recorded. Whimbrels observed during the study occurred within 50 to 100 m of turbines, with the number of whimbrels recorded at turbine sites and control sites remaining consistent indicating no potential displacement.



5.3 POTENTIAL IMPACTS

The Project anticipates a low risk to whimbrels from either collision or indirect habitat impacts. The Project layout has been modified to microsite turbine locations outside of blueberry barrens to minimize impacts to known foraging habitat. Lastly, despite this species' generally low flight heights, turbine locations have also been re-sited to avoid potential flight paths (and potential collision risk) during whimbrels' travel between coastal foraging areas and the blueberry barrens where MDIFW documented whimbrels during July and August 2016 and 2017 surveys.

5.3.1 Collision

PCM surveys of bird fatalities from the Bull Hill and Hancock have documented no whimbrel mortalities. Though suitable stopover habitat does not exist at these projects, they are located within the coastal plain and potentially within the migratory route. Stantec conducted a search of documented fatalities at existing wind energy facilities through PCM studies. AWWI's bird fatality technical report examined 193 PCM studies at 130 wind energy projects throughout the U.S. from 2002 to 2017 and documented no whimbrel mortalities (AWWI 2019). In Canada, PCM studies of 65 wind facilities also documented no whimbrel mortalities (Bird Studies Canada 2016). There are currently no reported mortalities resulting from 195 wind projects in the U.S. and Canada, including sites with known whimbrel use. In addition, other than during courtship displays on breeding grounds in Alaska and Canada, whimbrel flight patterns when traveling over water or between roosting sites are often low and in long lines (Bent 1929 in Skeel and Mallory 1996). Skeel and Mallory (1996) also report that flight height over land during migration is high, but without reference to specific distances above ground.

While the Project believes collision risk for whimbrels is low based on the reports available, the further micro siting of turbines in or near the edge of blueberry barrens and closer to forest edges is proposed as an additional avoidance measure. MDIFW's concern is that whimbrels may be exposed to turbine collision during their flights between coastal mud flats to the south and blueberry barrens. As a result of micrositing, whimbrels traveling directly between the coast and blueberry barrens within the Project area will encounter no turbines in their flight path. MIDFW notes from their 2016 and 2017 surveys that whimbrels feeding on the mud flats 2 hours on either side of low tide were observed leaving in a northerly direction presumably toward the blueberry barrens. During a falling tide MDIFW observed whimbrels flying in a southerly direction presumably back to the mud flats. Whimbrel roosting areas are suspected to be offshore.

As a result, due to this species' general preference for low flight heights when traveling between foraging areas, their short seasonal presence in the area, turbines being sited outside of their presumed flight path, and the absence of detected carcasses during PCM surveys at other wind facilities within the species' range, Downeast believes the Project poses a very low collision risk, and whimbrel mortality is not anticipated.

5.3.2 Habitat and Displacement

Based on the current Project design, permanent and temporary impacts during construction to foraging habitat (i.e., blueberry barrens) for whimbrels match the values provided for upland sandpiper in Section

4.3.2 (Figure 2), recognizing that whimbrel use of the area will change based on blueberry production. Habitat displacement from the Project is not expected, as research conducted by McCorquodale 2009 did not indicate any habitat displacement effects on whimbrels from turbines or any staging habitat limitations resulting from wind facilities. In addition, available habitat in the form of blueberry barrens is available and more plentiful outside the Project area. Since the scientific literature provides no examples of individuals being displaced from suitable habitat around turbine sites at operational wind facilities and because whimbrels are known to change foraging locations based on blueberry production, habitat displacement effects are not anticipated.

5.4 IMPLEMENTED AVOIDANCE AND MINIMIZATION MEASURES

While Downeast does not anticipate any Project impacts to whimbrel from direct take, the Project has undergone numerous design iterations to avoid blueberry barrens to the greatest extent possible to minimize potential impacts to whimbrel.

- In winter 2016, 25 turbines were proposed in blueberry barrens.
    - Numerous design revisions have resulted in removal of all proposed turbines from the middle of blueberry barrens with only one turbine, T30, at the edge of a blueberry barren. Additionally, T30 is located between two forest stands connected to a blueberry baren fragment by hedgerows. As of 2019, this location is not actively managed for blueberry production, which further reduces habitat suitability for whimbrels.
- Project access roads and collector lines have been sited away from blueberry barrens to the extent practicable, and the length of roads and collector lines within blueberry barrens has been minimized.
- Eleven turbines sited within the flight path from Harrington Bay to the blueberry barrens near Schoodic Lake (where MDIFW has documented whimbrel use) were removed and relocated outside this flight path. No turbines in the current layout are within the presumed flight paths for whimbrel traveling from coastal areas to the south.

6.0 NOCTURNAL MIGRANTS

The coastal plain is an important region for millions of migrating birds during both the spring and fall migration periods and is an area of significant concern to the MDIFW (MDIFW 2018a). In their June 28, 2019, letter, MDIFW indicated that the concentration of migratory birds in the coastal plain “is greater than in other areas of Maine, and the seasonal and daily movement patterns are unique for represented guilds.” Additionally, the MDIFW maintains that records from nocturnal radar monitoring surveys in Maine to date have indicated that Maine’s coastal plain is subject to some of the highest passage rates recorded in New England.

6.1 SURVEYS

Nocturnal migration radar surveys were conducted in fall 2015, spring 2016, and fall 2016 to document passage rates for migrating birds in the Project area. Surveys were performed for 20 nights per season, for a total of 60 survey nights. The mean passage rate in fall 2015 was 920 (±52) targets/kilometer/hour (t/km/hr) (Stantec 2017b). In 2016, the mean passage rate was 469 (±39) t/km/hr in the spring and 486 (±30) t/km/hr in the fall. The overall mean passage rate for the Project was 529 t/km/hr. The seasonal mean flight height was 428 (±1) m in fall 2015, 384 (±2) m in spring 2016, and 465 (±1) m in fall 2016. Seasonal mean flight heights in all seasons were > 200 m, which is above the maximum blade-tip height (200 m) of the proposed Project turbines.

The passage rates documented for the Project are consistent with the results from other radar surveys completed in the coastal plain (Figure 4). While some seasonal results in the coastal plain are among the highest in the state, other seasons are consistent with radar surveys results across Maine with similar seasonal high radar passage rates observed at inland sites.

6.1.1 Other Radar Studies from Coastal Plain

Bull Hill Wind Project

Prior to construction of Bull Hill, Stantec conducted nocturnal radar surveys of migratory songbirds in fall 2009, spring 2010, spring 2011, and fall 2011 (Stantec 2011b,c). Passage rates ranged between 387 (±21) t/km/hr in spring 2010 and 614 (±32) t/km/hr in fall 2009 (see Figure 4). Flight heights ranged from 217 (±8) m in spring 2010 to 371 (±3) m in spring 2011. Average flight heights were greater than 200 m or general tip height of proposed turbines.

Weaver Wind Project

Stantec conducted pre-construction nocturnal radar surveys of migratory songbirds in spring 2014, fall 2014, and fall 2016 at Weaver (Stantec 2014a; see Figure 4). Passage rates ranged between 543 (±28) t/km/hr in fall 2016 and 806 (±56) t/km/hr in spring 2014. Flight heights ranged from 365 (±2) m in spring 2014 to 479 (±1) m during fall 2016. Average flight heights were greater than 200 m or general tip height of proposed turbines.

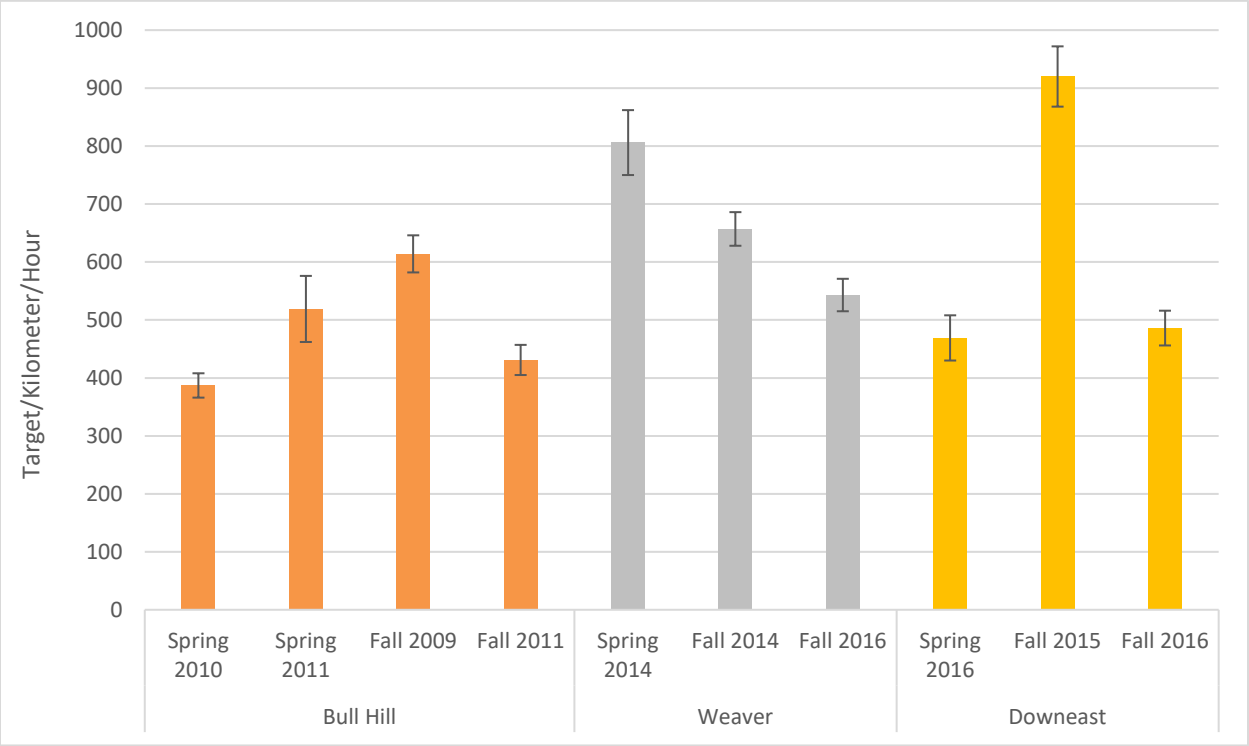


Figure 4. Nocturnal Migrant Passage Rates at Bull Hill, Weaver, and Downeast

6.1.2 Other State, Regional, and National Projects

Stantec reviewed publicly available nocturnal radar results from other Maine, regional, and national wind projects to further compare the results of their 2015 and 2016 nocturnal radar surveys of the Project area. The Project area's overall average passage rate of 529 t/km/hr falls within the upper third of documented mean passage rates from 14 total Maine wind projects from across the state, including Bull Hill and Weaver (Figure 5; Stantec 2018a; Attachment A). Note that the overall passage rate was heavily skewed by particularly high rates on two nights in fall 2015; rates during other sampling periods were in the range of 400 t/km/hr. Additionally, the Bingham and Highland Wind Projects, which recorded some of the highest passage rates, are located outside of the coastal plain region.

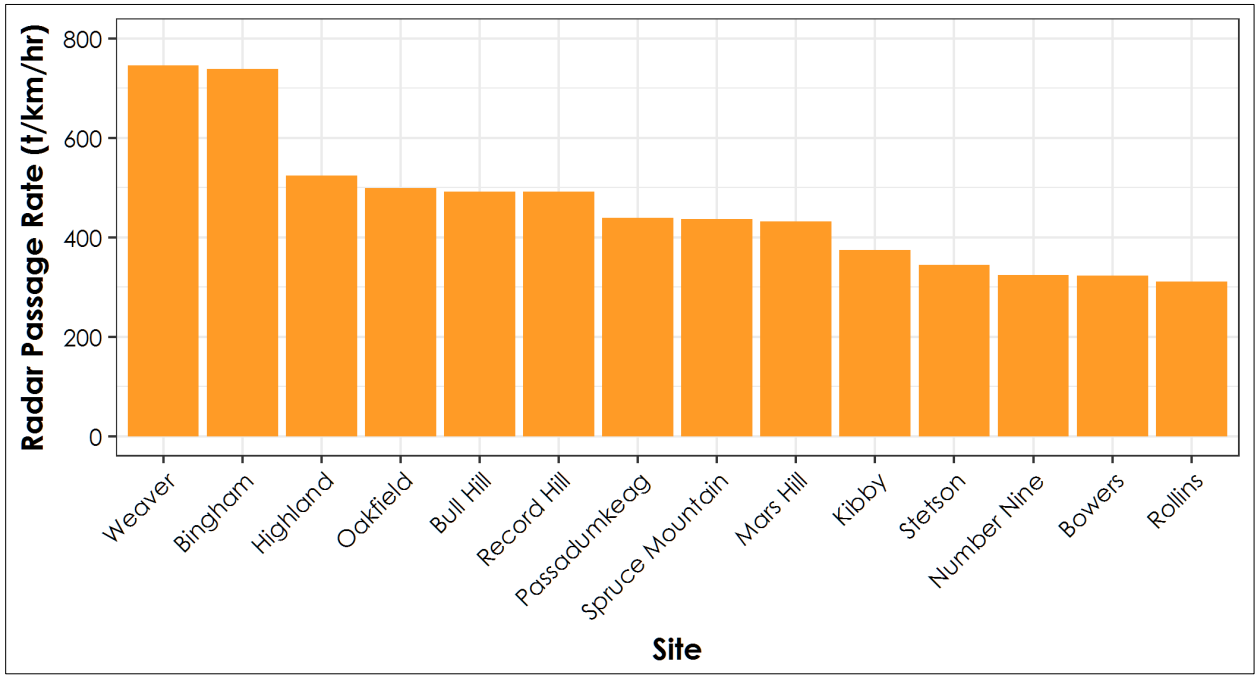


Figure 5. Mean Radar Passage Rates from Pre-Construction Surveys at Maine Wind Projects

Stantec maintains a database of avian passage rates from previous monitoring reports for wind facilities. Stantec examined fall passage rates from monitoring reports for 67 wind projects, mostly in the Northeast between 2004 and 2017. Fall passage rates averaged 408 (±26 SE) t/km/hr with mean flight heights of 401 (±10 SE) m (Stantec, unpublished data). Similarly, spring passage rates for 54 wind projects available out of the 67 wind projects, mostly in the Northeast between 2005 and 2017, averaged 367 (±24 SE) t/km/hr with mean flight heights of 372 (±11 SE) m (Stantec, unpublished data. Between 2007 and 2010, Walsh et al. (2017) examined bird migration (14,000,000 targets over 16,360 hours of radar operation) using marine radar at two sites along the gulf coast of Texas. Mean autumn passage rate was 1,186 t/km/hr and was 46% higher than spring passage rates. These rates are higher than the passage rates documented in Maine, yet passerine mortality rates in the gulf coast of Texas have not been significantly higher. This again indicates that nocturnal passerine migration passage rates are not indicative of passerine mortality at a site. This may be because passerines are flying well above rotor swept areas for turbines. In addition, most projects reduce lighting to the greatest extent practicable to avoid attracting and causing potential collision of nocturnal migrants.

6.2 LITERATURE SUMMARY ON WIND ENERGY EFFECTS

Significant wind facility development occurs within important migratory concentration areas. One such example is Gulf Wind, which is a 283-MW facility comprised of 118 turbines on the Gulf Coast of Texas that began commercial operation in 2009. The facility is close to the Gulf Coast and near several National Wildlife Refuges specifically designated for concentrated avian staging and wintering habitat. Additionally, the facility occurs in an area where birds from the Central and Mississippi Flyways converge, resulting in significant concentrations of migrating and wintering birds. PCM surveys were conducted for Gulf Wind in

2009–2010 and 2010–2011. Results of PCM surveys indicated that mortality rates at the Gulf Wind site were near national averages and risk to migrating songbirds was low despite high passage rates detected during radar surveys (AWWI 2017).

Research by Kerlinger et al. (2010) examined avian mortality data from studies at 30 wind facilities across North America to estimate how many nocturnal migrants collide with turbines. Results of the avian mortality data demonstrate that mortality rates of nocturnal migrants at wind facilities is low, ranging from one to seven mortalities per turbine per year. Similarly, Erickson et al. (2014) compiled data from 116 PCM studies at wind facilities in the U.S. and Canada to estimate the annual rate of small-passerine mortality. The 116 studies analyzed represented 15% of current operating capacity for all wind facilities in the U.S. and Canada, and most of these studies were conducted in the northern third of the contiguous U.S. For all wind facilities in operation at the time of the analysis, Erickson et al. (2014) estimated that wind turbines cause 2.10 to 3.35 small-passerines/MW of installed capacity. Using the most conservative estimates, this analysis determined that less than one-tenth of one percent of the continent-wide population for each species is estimated to be killed annually by collisions with wind turbines.

In a recent study by the American Wind and Wildlife Institute small passerines were the dominant bird group (85.4% of total fatalities) noted by 17 monitoring events at wind facilitates in the Northern Forest region (AWWI 2019). This region includes portions of Minnesota, Wisconsin, Michigan, New York, New Hampshire, Vermont, and Maine. Within the small passerines group, forest dwelling species were the most commonly noted fatalities (as a percentage of all observations) with red-eyed vireo (*Vireo olivaceus*), golden-crowned kinglet (*Regulus satrapa*), magnolia warbler (*Dendroica magnolia*), common yellowthroat (*Geothlypis trichas*), black and white warbler (*Mniotilta varia*), ovenbird (*Seiurus aurocapillus*), northern parula (*Parula americana*), ruby-crowned kinglet (*Regulus calendula*), ruffed grouse (*Bonasa umbellus*), and bay-breasted warbler (*Dendroica castanea*) as the top 10 species (AWWI 2019).

Stantec (2018c) examined the relationship between pre-construction avian surveys (i.e., passage rates) with recorded post-construction bird fatalities across 11 operational wind facilities in Maine. Results showed no strong or consistent relationship between the measured level of pre-construction bird activity and calculated mortality rates from PCM surveys after wind operations began. The lack of any pattern in Maine wind facilities matches with similar studies across North America, supporting the conclusion that measures of bird activity alone are not meaningful predictors of actual observed avian mortality. Post construction monitoring studies from nearby wind projects are likely better indicators of bird fatality rates.

6.3 POTENTIAL IMPACTS

The Project has the potential to result in direct impacts to nocturnal migrants, composed primarily of small forest passerines, due to collision mortality as demonstrated by other studies (Erickson et al. 2014). Conservative estimates indicate that mortality will be low and will not have population-level impacts on passerines, as is the case for other wind farms located in higher passage rate areas (Erickson et al. 2014).

6.3.1 Collision

MDIFW has indicated their concern that the coastal plain presents unique challenges in evaluating Project-related risks to migratory birds due to documented high passage rates and weather conditions that may force birds to fly at lower heights, potentially increasing collision risk (MDIFW 2018c). As previously discussed in Section 6.2, high passage rates do not correspond to an increased risk based on national (Erickson et al. 2014) or Maine-specific studies (Stantec 2018a).

Gulf Wind, in the same general area where Walsh et al. (2017) reported the high mean passage rates previously presented in Section 6.2, averaged a bird fatality rate of 4.91 birds/MW/year during 1,449 surveys at 8-day intervals and 3,000 daily searches (AWWI 2017).

Bull Hill PCM surveys were conducted in Year 1 (2013) and Year 2 (2014) of operation. Based on these surveys, mortality estimates were 12.13 birds/turbine/study period (6.73 birds/MW) and 6.28 birds/turbine/study period (3.48 birds/MW) in 2013 and 2014, respectively (Stantec 2015a; Stantec 2015b). Bird mortality estimates for Years 1 and 2 at Bull Hill were on the upper end of the range of estimates reported from other wind facilities in New England.

Hancock PCM surveys were also conducted in Year 1 (2017) and Year 2 (2018) of operation. The mortality estimates were 4.56 birds/turbine/study period (1.38 birds/MW) and 2.35 birds/turbine/study (0.71 birds/MW) in 2017 and 2018, respectively (TRC 2017a; TRC 2018). Bird mortality rates during Years 1 and 2 at Hancock were on the low end of the range of estimates reported from other wind projects in New England and were also much lower than those observed at Bull Hill, even though these facilities are directly adjacent to one another. Finally, mean annual bird fatality estimates from 22 PCM events at Maine wind projects across the state are provided in Figure 6 and show fatality rates in the Coastal Plain were highly variable suggesting there is no pattern in the relationship between the Project's location and calculated annual bird mortality.



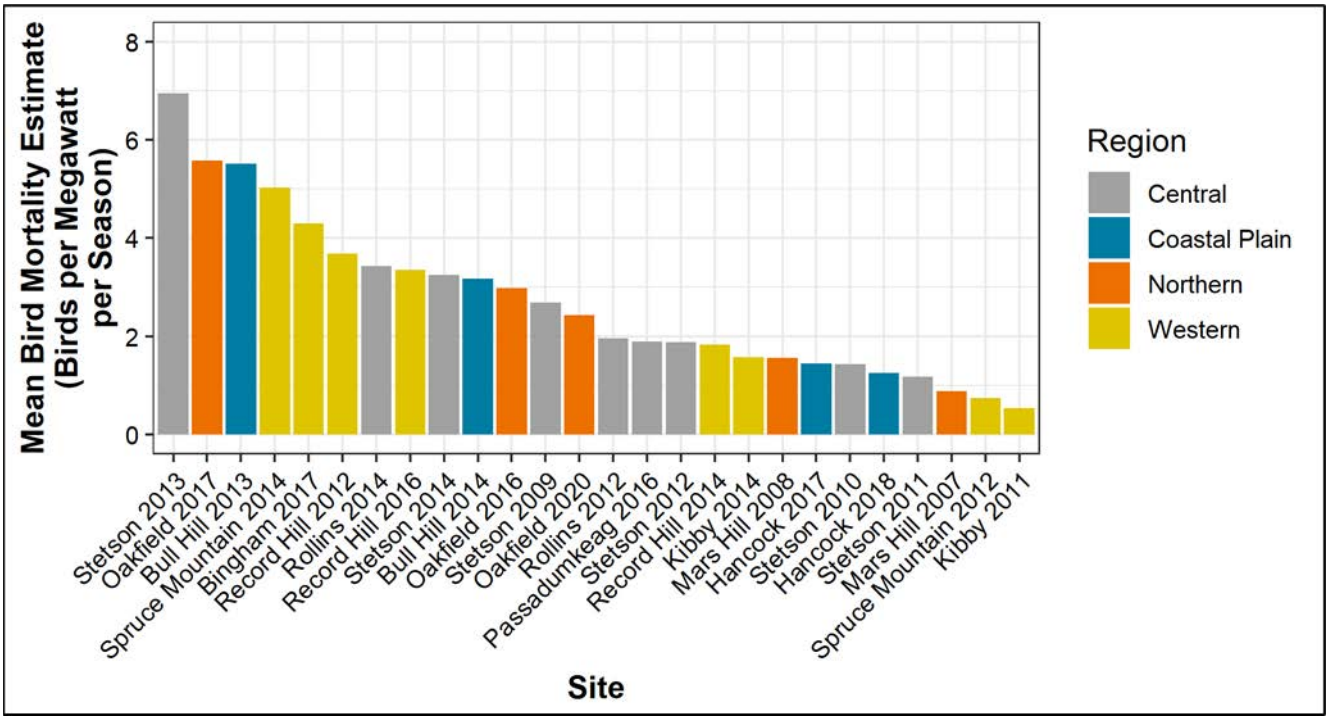


Figure 6. Mean Bird Fatality Estimates by Year from Maine Wind Projects (from Stantec 2018a)

These results demonstrate that mortality rates vary widely among years and sites and do not necessarily correlate with high passage rates or regional location. As suggested in Erickson et al. (2014), and given past local and regional PCM studies, Project impacts are expected to be in the range of the reported mortality rates found at other projects. Additionally, impacts are not expected to be significant and will not adversely affect overall population sizes. Fatality estimates from Downeast are expected to fall within the range of these reported values but will be confirmed through PCM studies once operational. To offset any direct impacts (i.e., collision) to bird species, the Project will protect forest and open habitat through deed restrictions. See Section 8.2.3.

6.4 IMPLEMENTED AVOIDANCE AND MINIMIZATION MEASURES

As scientific literature (Kerlinger et al. 2010; Longcore et al. 2012) suggests, steady burning bright lights pose a collision risk for nocturnal migrating birds. The Project will minimize lighting to the extent practicable and will use Federal Aviation Administration (FAA)-approved flashing lighting on turbines. Additionally, nighttime lighting will not be used on nacelles or on tower doors. Motion activated lighting will likely be installed on tower doors, the substation, and the operations and maintenance facility. Although research does not indicate a statistical correlation between FAA-lighting and collision risk (Kerlinger et al. 2010), the Project will utilize an Aircraft Detection Lighting System, thereby minimizing the period of time the turbines will be lit. In addition, the Project will mitigate any potential impacts, even if low, by implementation of tract deed restrictions (see Section 8). This mitigation will provide a net conservation benefit to passerine species. Maine Audubon co-authored a study in 2013 suggesting that roughly 1/3 of Maine's native plant and animal species are increasingly vulnerable to the effects of climate change (Whitman et al. 2013). For

birds specifically, migratory species may be affected by climate change during their migratory periods as well as during periods spent on breeding and wintering grounds. In addition, climate change is affecting the phenology of bird migration with documented changes in arrival dates to breeding grounds. This can lead to earlier egg hatching during periods of time when natural food supplies are less abundant, with corresponding effects to population recruitment. MDIFW's Wildlife Action Plan also recognizes climate change vulnerability for many wildlife species as an area needing further recognition (MDIFW 2016). Renewable energy production is an important part of the solution for transitioning away from traditional power sources that produce greenhouse gas emissions and contribute to these potential effects.

7.0 BATS

Eight species of bats occur in Maine. Little brown bats (*Myotis lucifugus*) and northern long-eared bats (*M. septentrionalis*) are state-endangered, eastern small-footed bats (*M. leibii*) are state-threatened, and the remaining five species are considered Species of Special Concern in Maine. White-nose syndrome has caused dramatic declines in Maine bat populations since it was detected in the state in 2011.

7.1 SURVEYS

Acoustic bat surveys were conducted in fall 2015, spring/summer 2016, and fall 2016. Survey data for the Project indicate that bat activity is concentrated during a relatively limited time of year (mid/late summer) and during warm, low-wind conditions with 95% of activity recorded in July, August, and September. This pattern is similar to other wind projects in state and has been observed at other projects throughout North America. Observed bat activity levels at the Project were very low outside of this mid/ate summer period. In addition, nearly all bat activity (96%) was documented when temperatures were ≥ 50ºF, and most activity (70%) occurred at wind speeds of less than 6 m/s (Stantec 2017a). This is consistent with other studies and USFWS recommendations, which do not recommend conducting bat surveys when temperatures are below 50ºF because bat activity is low to nonexistent at these lower temperatures. Potential calls of state-listed endangered or threatened *Myotis* bat species (eastern small-footed bat, little brown bat, and northern long-eared bat) were detected on 2.7% (n = 13) out of a total 473 detector nights. Of these 13 *Myotis* detections, 12 (92%) occurred between July and September and 1 was detected in April.

7.2 LITERATURE SUMMARY ON WIND ENERGY EFFECTS

Bats are most active in the rotor zone of wind turbines during relatively calm, warm conditions, as demonstrated through nightly analyses comparing mortality records with weather conditions (e.g., Arnett et al. 2008). These patterns have also been shown through extensive acoustic monitoring at nacelle height conducted at operating wind projects in the mid-Atlantic and through acoustic monitoring on nacelle towers at Oakfield in Maine (Stantec 2016; TRC 2017b). Based on more than 6 years of monitoring at two wind farms in West Virginia, where baseline mortality rates are substantially higher than in Maine, 75% of bat passes recorded at nacelle height occurred at wind speeds less than 5 m/s and 94% occurred when temperatures were above 50ºF (Stantec, under peer review). At both projects, seasonal peak activity



occurred from July to September. Similar patterns have also been observed at nearby projects, as discussed below.

7.2.1 Studies at Nearby Projects

Bull Hill Wind Project

Stantec performed pre-construction acoustic bat surveys during summer/fall 2009 and spring/summer 2010 to characterize bat migration at Bull Hill. During summer/fall 2009 and spring/summer 2010, six detectors were deployed in the project area, two of which were on MET towers (which are more representative of turbine locations) and four of which were in trees adjacent to suitable bat habitat. In 2009, the overall detection rate was 0.2 bat call sequences per detector-night for the MET tower detectors and 10.8 bat call sequences per detector-night for the tree detectors (Stantec 2009). Of the 1,564 *Myotis* calls recorded in 2009, 1,554 (99%) were recorded between July and September. In 2010, the overall detection rate was 0.4 bat call sequences per detector-night for the MET tower detectors and 8.6 bat call sequences per detector-night for the tree detectors (Stantec 2010). Of the 1,108 *Myotis* calls recorded in 2010, 507 (46%) were recorded between July and September. Please note that this data was collected before the detection of white-nose syndrome in Maine and when myotis bat populations were more abundant.

Post-construction bat acoustic monitoring was performed from mid-July to mid-October 2013 and from June to October 2014 (Stantec 2014a; Stantec 2014b). The overall detection rate was 4.9 bat call sequences per detector-night in 2013 and 0.9 bat call sequences per detector-night in 2014. In 2013, there were a total of 2,036 detections at five detectors, with 2,020 (99%) detections occurring between July and September. Of the 1,315 identifiable calls, 1,211 (92%) were of *Myotis* species and 1,210 occurred between July and September. In 2014, there were a total of 631 detections at 7 detectors, with the majority (97%) occurring between July and September. Of the 381 identifiable calls, 20 (5%) were of *Myotis* species and all occurred between July and September.

Weaver Wind Project

Stantec also performed pre-construction acoustic bat surveys during spring, summer, and fall 2014 at Weaver. The overall detection rate was 0.5 bat call sequences per detector-night between April and October, with acoustic activity rates peaking in August at a rate of 1.4 call sequences per detector-night (Stantec 2014a). The majority (88%) of the 334 total detections occurred between July and September. A small percentage (3.6%) of identified calls were of the genus *Myotis*, which include the species listed as threatened or endangered in Maine. Of the 12 *Myotis* detections, nine (75%) occurred between July and September. Approximately 96% of bat call sequences were recorded during nights with average temperatures ≥ 50ºF, and 87% of call sequences were recorded when average nightly wind speeds were ≤ 6 m/s. These results show a positive correlation between bat activity and nightly mean temperatures and a negative correlation with average nightly wind speeds.

7.3 POTENTIAL IMPACTS

The forested habitat in the project area could support foraging and roosting bats; however, the Project lacks any known maternity roosts, and there are no known hibernacula (including talus slopes, large rock piles,



or rock ledges) within the Project. area. However, consistent with studies at operational projects in the U.S., bat collision has been documented at wind projects in Maine, predominantly during the fall migration; therefore, the Project has the potential to result in direct impacts to bats due to collision mortality. To minimize impacts to bats from operation, the Project will operate under a curtailment schedule to reduce and minimize impacts to the greatest extent practicable (see Sections 7.4 and 8.2.4).

7.3.1 Collision

Annual bat mortality estimates in Maine range from 0.12 to 2.95 bats/MW/year, with a mean of 0.76 bats/MW/year and a median of 0.43 bats/MW/year. Bat mortality rates in Maine are lower than the Northeast and other regions in the U.S. AWWI's technical report on bat fatality examined 137 wind energy projects throughout the U.S. and 202 fatality estimate studies, most of which occurred from 2005 through 2012 (AWWI 2018). The median fatality estimate for all studies evaluated was 2.66 bats/MW/year. In examining fatality estimates by region, the Northeast Region[4] included 52 studies, resulting in a range of 0.1 to 49.7 bats/MW/year and a median of 3.5 bats/MW/year. Maine's median of 0.4 bats/MW/year is less than the lowest regional median calculated for the entire U.S., indicating that bat collision mortality in Maine is not of any greater concern than in other regions of the U.S. Furthermore, several Maine wind projects contributing PCM data are not operating under a curtailment program, indicating that bat mortality in Maine is already low even without curtailment. Although the data demonstrates a low bat mortality rate in Maine compared to other regions of the U.S., MDIFW's minimum curtailment recommendations are more rigorous than those recommended by other state agencies.

In recognition of MDIFW's concern regarding potential impacts to bats, bat mortality rates at the two closest operational wind projects (Bull Hill and Hancock) were evaluated. Bull Hill PCM surveys were conducted in Year 1 (2013) and Year 2 (2014) of operation. Based on these surveys, mortality estimates were 1.41 bats/MW.study period) and 0.24 bats/MW/study period) in 2013 and 2014, respectively (Stantec 2015a; Stantec 2015b). Curtailment measures at Bull Hill have varied since the project began operating. In 2016, the Land Use Planning Commission directed curtailment of all 19 turbines at 6 m/s from 30 minutes before sunset to 30 minutes after sunrise from June 1 to September 30. Currently and for the life of the project, Bull Hill is curtailing all 19 turbines at 5 m/s from 30 minutes before sunset to 30 minutes after sunrise from July 1 to September 30.

Hancock PCM surveys were conducted in Year 1 (2017) and Year 2 (2018) of operation. The mortality estimates were 0.27 bats/MW/study period and 0.37 bats/MW/study period in 2017 and 2018, respectively (TRC 2017a; TRC 2018). Hancock operates under a seasonal curtailment regime of 6 m/s 30 minutes before sunset to 30 minutes after sunrise from April 20 to October 15.

[4] The Northeast Region used in this report is the U.S. Fish and Wildlife Service Northeast Region, which includes 13 states from Maine to Virginia.

[5] Equation used to estimate annual bat mortality = average of 1.49 bats/turbine/study period x 19 turbines. Equation used to estimate bat mortality for the life of the project = 1.49 bats/turbine/study period x 19 turbines x 30 years. Conversion to bats/MW/study period was obtained by dividing this value by the respective turbine size (i.e., 1.8 MW).



Finally, most carcasses recovered during fatality searches at operational wind facilitates in Maine and throughout U.S. are from three migratory tree bat species: hoary bat (*Lasiurus cinereus*), eastern red bat (*L. borealis*), and silver-haired bat (*Lasionycteris noctivagans*) (Arnett et al. 2008). These three species are state Species of Special Concern in Maine.

7.3.2 Habitat and Displacement

Anticipated Project impacts to blueberry barrens are not considered bat habitat and, therefore, will not negatively affect habitat for state-listed bats potentially using the Project area. In addition, there are no known roost trees in the Project area. Tree removal (≥ 4 inches diameter at breast height) will be consistent with 5 MRSA §8057-A and will occur outside of the pup-rearing season for bats in Maine (June 1–July 31) to further reduce direct habitat loss or indirect displacement from Project activities. Lastly, while the tree clearing for the Project is not anticipated to have an adverse effect to bats, the Project under its mitigation land for songbirds will have a benefit to bats by protecting forested lands adjacent to large wetlands and riparian areas (see Section 8).

7.4 IMPLEMENTED AVOIDANCE AND MINIMIZATION MEASURES

MDIFW recommends siting wind projects away from key habitats where bats congregate (MDIFW 2018b). Accordingly, no key habitats known to host bats (e.g., hibernacula, talus slopes, or rocky outcrops) occur within the vicinity of the Project. MDIFW has also recommended seasonal operational curtailment measures. Specifically, MDIFW's minimum turbine curtailment recommendations include operating at cut-in speeds exceeding 6 m/s from at least 30 minutes before sunset to at least 30 minutes after sunrise between April 15 and September 30 when ambient air temperature is ≥ 32ºF, measured both at ground level and nacelle hub height (MDIFW 2018b).

Downeast proposes to implement MDIFW's minimum turbine curtailment recommendations during the first year of operations, in combination with conducting a site-specific "smart" curtailment study during Year 2 or subsequent years as an additional part of an adaptive management strategy to determine the most effective and efficient avoidance and minimization strategy for bats at the Project.

Bat Minimization Strategy Proposal

Stantec has previously and successfully developed site-specific "smart" curtailment plans for other northeastern wind facilities that predict the effectiveness of various curtailment regimes by predicting weather conditions when bats are most at risk using nacelle height acoustic data. Using this strategy, curtailment plans can be tailored to the conditions and bat activity patterns at a particular site. This approach works because past studies support the assumptions that: 1) fatality risk is closely related to bat exposure; 2) patterns in bat activity are consistent among years and turbines; and 3) most bat activity occurs below 5.0 m/s and temperatures greater than 50ºF. The "smart" curtailment approach can be used to improve the efficacy of curtailment, while also improving energy production.

Using the acoustic data from the 2015–2016 surveys described in Section 7.0 as a proxy, Stantec modeled various curtailment options for Downeast, including MDIFW's minimum recommendations of operating at cut-in speeds exceeding 6 m/s from at least 30 minutes before sunset to at least 30 minutes after sunrise



between April 15 and September 30 when ambient air temperature is ≥ 32ºF. Other curtailment scenarios included using various blanket cut-in speeds and temperatures, as well as the use of scenarios where cut-in speeds are applied at 0.5 m/s increments from sunrise to sunset from April to October and when temperatures exceed 50ºF. While acoustic data from 2015–2016 surveys was not collected at nacelle heights, this modeling effort resulted in the avoidance of 66% of observed bat passes under MDIFW minimum curtailment guidelines. Under a curtailment plan more tailored to when bat passes were detected in the Project area, modeling resulted in an equal or greater percentage of avoided bat passes at 70%.

As a result of this analysis, Downeast is proposing to implement MDIFW-recommended bat curtailment guidelines during Year 1 along with funding a study evaluating the use of "smart" curtailment to optimize turbine restrictions during peak levels of bat activity at the Project. As previously noted, the majority of bat activity observed during acoustic surveys at the Project site and other Maine wind projects occurred between July and September. During the first year of facility operations, and with MDIFW coordination, acoustic bat detectors would be deployed at nacelle heights on 20 to 50% of turbines to directly measure bat activity and risk at actual collision risk heights, corresponding with MDIFW recommendations. Weather information, including data on wind speed and temperature, will also be recorded in concert with measured bat activity levels and turbine operations. Data from the first year would be used to establish a management goal for risk reduction and provide the matching benchmark for the alternative "smart" curtailment design. In the second year, Downeast would implement the "smart" curtailment design and MDIFW guidelines simultaneously at 50% of turbines to provide for a direct comparison. Bat fatality surveys and carcass searches, as currently required for most commercial wind facilities, will also occur during the first 2 years of operation. These first 2 years of monitoring would be used to evaluate the long-term implementation of a "smart" curtailment plan.

Downeast may also test the use of bat deterrent systems or other technology that may become available, as a further measure to avoid and minimize potential impacts to bats using the best-available science and adaptive management throughout life of the Project. The current bat deterrent systems emit ultrasonic noise in the same natural frequency range as bats, interfering with their ability to echolocate and discouraging them from the area. These systems have been shown to be effective in reducing bat fatalities and can be paired with curtailment for even further reductions (Romano et al. 2019). Depending on the outcome and success of deterrent testing, Downeast may consider future adjustments to curtailment cut-in speeds with the goal of implementing a minimization strategy for bats that will equal or exceed the reductions in bat exposure risk observed from the MDIFW recommended curtailment regime and reduce the lost generation of clean renewable energy.

Balancing the production of clean renewable energy and potential impacts to the environment is important but requires long term alternative thinking. As previously noted in Section 6,4, Maine Audubon issued a report suggesting many of Maine's native species are at risk from climate change. For bats in particular, climate change may affect the timing of emergence or reproduction and alter species' geographic ranges (Jones et al. 2009; Loeb and Winters 2013). Increasing droughts or variable weather conditions may influence the availability of water and insect prey leading to reproductive declines and reduced energy reserves heading into winter hibernation (Rodenhouse et al. 2009; Adams 2010). Renewable energy production is an important part of the solution for transitioning away from traditional power sources that produce greenhouse gas emissions and contribute to these potential effects.



8.0 PROPOSED PROJECT MITIGATION

8.1 PROPOSED MITIGATION STRATEGIES

In addition to the implemented avoidance and minimization measures that further reduce risk to birds and bats, Downeast has also identified potential mitigation strategies to offset potential Project risks to the species identified here. Mitigation strategies, such as land conservation, will result in a net conservation benefit to the species of concern. Nocturnal migrants, bats, and upland sandpipers will benefit from land protection via deed restrictions.

8.2 PROPOSED SPECIES MITIGATION FOR PROJECT RISKS

8.2.1 Upland Sandpipers

Downeast believes there will be minimal habitat effects to upland sandpipers from the Project given the large amount of available blueberry barrens and by siting turbines outside of blueberry barrens. However, to offset potential impacts as a result of direct habitat loss and displacement (15.31 acres) the land considered for songbird mitigation in Section 8.2.3 below includes one 90-acre field that will be maintained as an active blueberry barren. This field will provide comparable habitat that will offset the 15.31 acres of impact at a greater than 3:1 ratio.

8.2.2 Whimbrel

Downeast believes there will be negligible effects to whimbrel from the Project given the large amount of available blueberry barrens in the region, turbines sited outside of blueberry barren habitat, turbines sited out of the potential flight path from tidal mud flats, and low documented collision risk found during a literature review. As such, Downeast believes there is no need for additional mitigation to offset Project impacts to whimbrels, however mitigation for upland sandpipers can also provide beneficial habitat for whimbrel.

8.2.3 Nocturnal Migrants – Conservation via Land Deed Restrictions

In the June 28, 2019, letter, MDIFW expressed concern about the concentration of migratory birds in the coastal plain as “greater than in other areas of Maine and the seasonal and daily movement patterns are unique for represented guilds.” An additional focus was placed on the high rates of spring and fall passerine migration obtained from pre-construction nocturnal radar surveys conducted for the Project, as well as the nearby Bull Hill and Weaver projects. However, as previously discussed in Section 6.2, there is no correlation between avian passage rates or pre-construction surveys with post-construction mortality events for Maine wind projects (Stantec 2018a). This lack of correlation between passage rates and mortality rates at operational wind farms is mirrored from studies completed across the U.S., Canada, and Europe (Ferrer et al. 2012, AWWI 2017). Mortality from turbine collision does occur, but these events are far lower in population severity than interactions with communication towers and buildings. The conservative estimate of annual passerine mortalities resulting from wind turbines in the U.S. and Canada is 230,000 compared to 6.6 million annual passerine mortalities resulting from communication tower collisions in the U.S. and



Canada (Erickson et al. 2014) and 365 million to 988 million annual mortalities resulting from building collisions in the U.S. (Loss et al. 2014).

Stantec reviewed avian mortality monitoring data from Bull Hill and Hancock Wind projects (Table 1). From these data, there were a total of 93 fatalities to 4 years of monitoring combined. The five most commonly encountered species were red-eyed vireo (34), golden-crowned kinglet (9), black and white warbler (7), pine warbler (6), and northern parula (5), accounting for 66% of all fatalities. All documented fatalities involved passerine bird species. Regionally, this matches with results of other similar studies. Small passerines were the dominant bird group (85.4% of total fatalities) noted by 17 monitoring events at wind facilitates in the Northern Forest region (AWWI 2019). This region includes portions of Minnesota, Wisconsin, Michigan, New York, New Hampshire, Vermont, and Maine. Within the small passerines group, forest dwelling species were the most commonly noted fatalities (as a percentage of all observations) with red-eyed vireo, golden-crowned kinglet, magnolia warbler, common yellowthroat, black and white warbler, ovenbird, northern parula, ruby-crowned kinglet, ruffed grouse, and bay-breasted warbler as the top ten species (AWWI 2019).

Table 2. Passerine Mortalities from Wind Facilities in the Coastal Plain Region of Maine

Species	# Found in Downeast Coastal Plain[1]	Lower [2]	Upper [2]
American redstart*	2	7	13
bay-breasted warbler	2	7	13
black-and-white warbler*	7	25	45
blackburnian warbler	1	4	6
blackpoll warbler	1	4	6
black-throated blue warbler	1	4	6
black-throated green warbler	2	7	13
blue-headed vireo	1	4	6
cedar waxwing	1	4	6
chestnut-sided warbler*	1	4	6
common yellowthroat	3	11	19
eastern phoebe	1	4	6
golden-crowned kinglet	9	32	58
magnolia warbler	3	11	19
northern parula	5	18	32
northern waterthrush	2	7	13
ovenbird	1	4	6
palm warbler	1	4	6
pine siskin	1	4	6
pine warbler	6	21	39
red-breasted nuthatch	1	4	6
red-eyed vireo	34	119	218
ruby-crowned kinglet	1	4	6
song sparrow	1	4	6
Swainson's thrush	1	4	6
Veery*	1	4	6
yellow-bellied flycatcher	1	4	6
yellow-rumped warbler	2	7	13

* Maine Species of Special Concern

[1] Includes Bull Hill Wind Project (2013 and 2014) and Hancock Wind Project (2017 and 2018).

[2] Lower and upper levels calculated following correction approaches for estimator bias as developed by Western EcoSystems Technology, Inc.

In its Department Order for Weaver, MDEP required deed restrictions for the protection of two parcels, totaling approximately 5,791 acres as mitigation for potential impacts to migratory birds (MDEP 2019). The scientific basis for conserving this amount of land to offset potential nocturnal migrant project mortality is unclear. Further, Downeast notes that Weaver is the only known wind facility in Maine that has been required to implement mitigation for migratory birds. Downeast proposes the following science-based approach to address potential Project risks to nocturnal migrants.

In determining appropriate mitigation for nocturnal migrants, MDIFW has previously referred to Goodale (2009), which suggests that large, contiguous habitats can produce more than two birds/acre/year. While a useful metric, it is also important to consider the species composition of mortalities caused by wind facilities, as well as the associated habitat requirements for those species. With this information, specific mitigation strategies may be developed to address Project-related effects. National and Maine-specific PCM data indicate small, forest passerines comprise most fatalities associated with wind facilities. This metric provides a scientific based method for evaluating the potential value of a mitigation action.

To offset direct impacts (i.e., collision) to nocturnal migrants, particularly small, forest passerines that represent the majority of wind-related fatalities, the Project will protect forestland through conservation deed restrictions in T18MD BPP. Downeast relies on bird mortality data collected for Bull Hill and Hancock to estimate bird mortality for the Project and determine an appropriate amount of habitat preservation for mitigation. Based on 4 years of PCM data at these two Maine projects, the average bird mortality in the coastal plain region is 6.33 birds/turbine/year or an annualized estimated take of up to 190 birds. Using Goodale's value of two birds/acre/year, it would require approximately 95 acres of habitat to offset this annual loss. The Project proposes to mitigate potential direct take of birds at the 10:1 mitigation ratio previously communicated by MDIFW by the conservation of approximately 977 acres of blueberry barren and forested land.

Downeast has identified a mitigation site near the proposed Project that will benefit birds and other species (Figure 7). The proposed site consists of approximately 977 acres and is located in T18MD BPP, set back approximately 1.4 miles from the nearest proposed Project turbine. Identified natural communities from a desktop review within the 977-acre mitigation area include blueberry barren, scrub-shrub/barren habitat, early successional forest, deciduous forest, coniferous forest, mixed deciduous-coniferous forest, emergent wetland, scrub-shrub wetland, and riparian habitat. At the regional scale, the site is located adjacent to the 7,000-acre Great Heath, the largest peatland complex in the Downeast Region. The project proposes placing a deed restriction on the mitigation parcel to ensure that it continues to provide appropriate habitat for nocturnal migrants.





Project: Downeast Wind

- Mitigation Area: 2/26/2021 (977acres)
- ME Dept of Conservation, Great Heath Unit
- Project Boundary
- Parcel Boundary

All Boundaries Are Approximated

Figure 7: Proposed Mitigation Parcel

Date: 2/26/2021 Author: OB *CONFIDENTIAL*

Coordinate System: NAD 1983 StatePlane Maine East FIPS 1801 Feet
Projection: Transverse Mercator
Datum: North American 1983
Units: Foot US

APEX CLEAN ENERGY

WA005011C
WA006014
WA005018
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WA005011C
WA005011B
WA006012.1
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29180_001-001-000
29120_013-008-000
29120_014
29120_015
29120_015-028

0 0.3 0.6 1.2 Kilometers
0 0.225 0.45 0.9 Miles

Document Path: K:\GIS_Projects\DOW_Downeast\WA\MXD\Projects\DOW_11x17_MitigationMap.mxd

Based on the composition of avian species (i.e., passerines) subject to potential collision mortality at the Project, the proposed mitigation area will provide appropriate habitat for these species, other species of concern, and provide support to local avian populations. All five of the most commonly encountered species fatalities from the Bull Hill and Hancock Wind projects generally occupy forested habitats. There are some specific differences in these associations; as an example, northern parula may be more closely associated with mature forests close to waterbodies. Pine warblers occupy pine or mixed pine-deciduous forests while black and white warbles, golden-crowned kinglets, and red-eyed vireos show more flexibility in their forest associations. For each of these birds, the diversity of specific forest communities and successional stages within the proposed 977 acres will ensure the region continues to provide suitable habitat. In addition to the five birds described, three additional species from Table 1 are Maine Species of Special Concern. Veery typically breed in dense and damp deciduous woods that often located near waterbodies. The American redstart prefers larger tracts of second-growth woodlands with a prominent shrub layer. Finally, chestnut-sided warblers are associated with early-successional woodlands where thickets of shrubs and smaller trees become established after logging, fire, or natural events create open conditions. Again, the varied natural communities of these 977 acres, along with the connectivity to the Great Heath, provide habitat that could provide a benefit to these species at potential risk.

8.2.4 Bats

Habitat Conservation via Deed Restrictions

The conservation via deed restrictions of approximately 977 acres in T18MD BPP for nocturnal migrants will provide further bat risk mitigation by conserving both suitable roosting and foraging habitat. The forested condition of this site offers potential roosting habitat, while the assemblage of wetlands and streams provides foraging habitat. While current scientific knowledge suggests that Maine's bats are not habitat-limited, the known protection of potential bat roosting and foraging habitat on this parcel provides additional capacity for the persistence and growth of local bat populations over the life of the Project if habitat-related concerns arise.

9.0 SUMMARY AND CONCLUSION

In summary, Downeast has reconfigured the proposed Project in response to concerns identified by MDIFW to avoid and minimize potential impacts to upland sandpipers and whimbrels, removing all but one turbine from blueberry barrens in the process. Downeast also plans to implement MDIFW's curtailment recommendations for a trial period followed by a study of its efficacy in bat risk reduction,The Project believes that taking such a "smart" approach to curtailment will protect bat populations while maximizing clean energy production that in the long run will benefit all species.

Downeast also aims to provide a net benefit to species of concern by proposing additional mitigation. For upland sandpiper, Downeast will mitigate loss of grassland habitat for upland sandpiper through a deed restriction as part of the songbird mitigation parcel which contains blueberry barren habitat that will be maintained at a compensation ratio exceeding 3:1.For nocturnal migrants, although impacts are not anticipated to be unique relative to other projects in the state, Downeast has proposed a science-based



mitigation plan that protects land containing a diversity of valuable breeding and stopover habitat for songbirds at a compensation ratio of 10:1. Downeast appreciates the feedback provided by MDIFW, which has helped create the current Project layout. Downeast recognizes the importance of Maine's coastal plain region for resident and migratory shorebirds and migratory songbirds. As such, Downeast believes the avoidance and minimization measures in concert with the mitigation actions proposed in this report will address Project effects and result in a conservation benefit to the MDIFW identified species of concern.

In summary, Downeast reiterates that:

- A review of data from wind energy projects in similar habitats (including blueberry barrens) and species' biology and behavior combined with implementation of Project avoidance and minimization measures indicates the Project will have low to no direct take of upland sandpipers or whimbrels. Nonetheless, Downeast will mitigate loss of grassland habitat for upland sandpiper through a conservation via deed restriction as part of the songbird mitigation parcel which contains blueberry barren habitat that will be maintained at a compensation ratio exceeding 3:1.

- A review of data from wind energy projects in Maine and across North America indicates the Project will not cause adverse population-level impacts to nocturnal migrants (i.e., passerines). Nonetheless, Downeast will mitigate Project effects to these species through protection of 977 acres of nearby forested and open habitat via conservation deed restrictions.

- The Project plans to minimize the take of bats by employing an adaptive conservation management strategy of baseline curtailment combined with a robust study to evaluate potential use of "smart" curtailment and other available technology to meet or exceed the results of current recommendations by MDIFW. Finally, land protection of 977 acres of nearby forested, riparian, and open field habitat will provide additional foraging and roosting areas for Maine's bat species.



10.0 REFERENCES

Adams, R. A. 2010. Bat Reproduction Declines When Conditions Mimic Climate Change Projections for Western North America. Ecology 91(8): 2437-2445.

Arnett, E. B., W. K. Brown, W. P. Erickson, J. K. Fiedler, B. L. Hamilton, T. H. Henry, A. Jain, G. D. Johnson, J. Kerns, R. R. Koford, C. P. Nicholson, T. J. O'Connell, J. D. Piorkowski, and R. D. Tankersley Jr. 2008. Patterns of Bat Fatalities at Wind Energy Facilities in North America. The Journal of Wildlife Management 72(1): 61-78.

American Wind Wildlife Institute (AWWI). 2017. Proceedings of the Wind-Wildlife Research Meeting XI. PNWWRM XI.Broomfield, CO, November 30 – December 2, 2016. Prepared for the National Wind Coordinating Collaborative by the American Wind Wildlife Institute, Washington, DC, Susan Savitt Schwartz, ed. 164 pp.

AWWI. 2018. AWWI Technical Report: A Summary of Bat Fatality Data in a Nationwide Database. Available online at: https://awwi.org/wp-content/uploads/2019/02/AWWI-Bat-Technical-Report_07_25_18_FINAL.pdf. Accessed October 31, 2019.

AWWI. 2019. AWWI Technical Report: A Summary of Bird Fatality Data in a Nationwide Database. Washington, DC. Available online at: https://awwi.org/resources/awwic-bird-technical-report/. Accessed September 20, 2019.

BirdLife International. 2020. Important Bird Areas factsheet: Wolfe Island. Available online at: http://www.birdlife.org. Accessed March 3, 2020.

Bird Studies Canada. 2016. Wind Energy Bird and Bat Monitoring Database Summary of the Findings from Post-Construction Monitoring Reports. Bird Studies Canada, Canadian Wind Energy Association, Environment Canada and Ontario Ministry of Natural Resources. Available online at: https://docs.wind-watch.org/Bird-Studies-CAN-Jul2016_Wind.pdf. Accessed September 20, 2019.

Center for Conservation Biology, College of William and Mary – Virginia Commonwealth University (CCB). 2012. News Advisory – Brassy Whimbrels Fly More Than 2,500 Miles Out to Sea and Through the Heart of the Atlantic Ocean Completing a Nonstop Flight of 6 days. Available online at: https://ccbbirds.org/wp-content/uploads/2012/08/ccbpr_12_02.pdf. Accessed March 3, 2020.

Cornell University. 2017. All About Birds – Upland Sandpiper. Available online at: https://www.allaboutbirds.org/guide/Upland_Sandpiper/lifehistory. Accessed November 1, 2019.

Derby, C., A. Dahl, W. Erickson, K. Bay, and J. Hoban. 2007. Post-Construction Monitoring Report for Avian and Bat Mortality at the NPPD Ainsworth Wind Farm. Prepared for Nebraska Public Power District. February 27, 2007.

eBird. 2020. Whimbrel Observations in Maine. Available online at: https://ebird.org/species/whimbr/US-ME. Accessed February 5, 2020.



Erickson, W. P., M. M. Wolfe, K. J. Bay, D. H. Johnson, and J. L. Gehring. 2014. A Comprehensive Analysis of Small-Passerine Fatalities from Collision with Turbines at Wind Energy Facilities. PLoS ONE 9(9): e107491.

Ferns, P. N., G. H. Green, and P. D. Round. 1979. Significance of the Somerset and Gwent levels in Britain as Feeding Areas for Migrant Whimbrels (*Numenius phaeopus*). Biological Conservation. 0006-3207/79/0016-0007.

Ferrer, M., M. de Lucas, G. F. E. Janss, E. Casado, A. R. Muñoz, M. J. Bechard, and C. P. Calabuig. 2012. Weak Relationship Between Risk Assessment Studies and Recorded Mortality in Wind Farms. Journal of Applied Ecology 49(1):38 – 46.

Gawler, S., and A. Cutko. 2010. Natural Landscapes of Maine: a Guide to Natural Communities and Ecosystems. Maine Natural Areas Program, Maine Department of Conservation, Augusta, Maine.

Goodale, M. 2009. Distribution of Birds at Witherle Woods. Biodiversity Research Institute report (BRI ID # 2009-29). Gorham, Maine, pp 22.

Gove, B., R. H. W.Langston, A. McCluskie, J. D. Pullan, and I. Scrase. 2013. Wind Farms and Birds: an Updated Analysis of the Effects of Wind Farms on Birds, and Best Practice Guidance on Integrated Planning and Impact Assessment. *RSPB/BirdLife in the UK. Technical document T-PVS/Inf*, *15*.

Graff, B. J., J. A. Jenks, J. D. Stafford, K. C. Jensen, and T. W. Grovenburg. 2016. Assessing Spring Direct Mortality to Avifauna from Wind Energy Facilities in the Dakotas. The Journal of Wildlife Management 80(4): 736-745.

Hodgman, T. P. 2006. Upland Sandpiper Assessment. Maine Department of Inland Fisheries and Wildlife, 284 State Street, State House Station 41, Augusta, Maine 04333. 39 pp.

Houston, C. S., C. Jackson, and D. E. Bowen Jr. 2011. Upland Sandpiper (*Bartramia longicauda*), version 2.0. In The Birds of North America (A. F. Poole, ed). Cornell Lab of Ornithology, Ithaca, NY, USA. Available online at: https://doi.org/10.2173/bna.580. Accessed January 28, 2020.

Howe, R., W. Evans, and A. Wolf. 2002. Effects of Wind Turbines on Birds and Bats in Northeastern Wisconsin. Report by University of Wisconsin. 112pp. Available online at: https://tethys.pnnl.gov/ sites/default/files/publications/Howe-2002.pdf. Accessed January 28, 2020.

Johnson, G. D., W. P. Erickson, M. D. Strickland, M. F. Shepherd, and D. A. Shepherd. 2000. Avian Monitoring Studies at the Buffalo Ridge, Minnesota Wind Resource Area: results of a 4-year study. Prepared for Northern States Power Company.

Jones, G., D. S. Jacobs, T. H. Kunz, and P. A. Racey. 2009. Carpe noctem: The importance of bats as bioindicators. Endangered Species Research 8(1): 93-115.



Kerlinger, P., J. L. Gehring, W. P. Erickson, R. Curry, A. Jain, and J. Guarnaccia. 2010. Night Migrant Fatalities and Obstruction Lighting at Wind Turbines in North America. The Wilson Journal of Ornithology 122(4): 744-754.

Loeb, S. C., and E. A. Winters. 2013. Indiana Bat Summer Maternity Distribution: Effects of Current and Future Climates. Ecology and Evolution 3(1): 103-114.

Longcore, T., C. Rich, P. Mineau, B. MacDonald, D. G. Bert, L. M. Sullivan, E. Mutrie, S. A. Gauthreaux Jr., M. L. Avery, R. L. Crawford, A. M. Manville II, E. R. Travis, and D. Drake. 2012. An Estimate of Avian Mortality at Communication Towers in the United States and Canada. PLoS ONE 7(4): e34025.

Loss, S. R., T. Will, S. S. Loss, and P. P. Marra. 2014. Bird-building Collisions in the United States: Estimates of Annual Mortality and Species Vulnerability. The Condor 116(1): 8-23.

Maine Department of Environmental Protection (MDEP). 2019. Department Order. Weaver Wind, LLC. Site Location of Development Act, Natural Resources Protection Act, Freshwater Wetland Alteration, Adjacent Activity, Significant Wildlife Habitat, Water Quality Certification, Findings of Fact and Order. 52pp.

Maine Department of Inland Fisheries and Wildlife (MDIFW). 2011. Upland sandpiper (*Bartramia longicauda*). Available online at: Https://www.maine.gov/ifw/docs/UplandSandpiper_44_45_2011.pdf. Accessed August 23, 2019.

MDIFW. 2016. Maine 2015 Wildlife Action Plan – *Bartramia longicauda* (upland sandpiper). Available online at: https://www.maine.gov/ifw/wildlife/reports/pdfs/SGCN_Reports/SGCN/Upland%20Sandpiper__Bartramia%20longicauda.pdf. Accessed October 31, 2019.

MDIFW. 2018a. Avian Resources in Maine's Coastal Plain.

MDIFW. 2018b. Maine Wind Power Preconstruction Recommendations and Turbine Curtailment Recommendations to Avoid/Minimize Bat Mortality.

MDIFW. 2018c. Proposed Downeast Wind Project – Columbia, T18MD, T19MD, T24MD BPP. Received by Paul Williamson (Downeast). June 28, 2019.

McCorquodale, D. B. 2009. Post-Construction Bird Monitoring at Wind Turbines Near Lingan, NS: June 2008 through May 2009.

Pearce-Higgins, J. W., L. Stephen, R. H. W. Langston, I. P. Bainbridge, and R. Bullman. 2009. The Distribution of Breeding Birds around Upland Wind Farms. Journal of Applied Ecology 46: 1323-1331.

Rodenhouse, N. L., L. M. Christenson, D. Parry, and L. E. Green. 2009. Climate Change Effects on Native Fauna of Northeastern Forests. Canadian Journal of Forest Research 39(2): 249-263.

Romano, W. B., J. R. Skalski, R. L. Townsend, K. W. Kinzie, K. D. Coppinger, and M. F. Miller. 2019. Evaluation of an Acoustic Deterrent to Reduce Bat Mortalities at an Illinois Wind Farm. Wildlife Society Bulletin 43(4): 608-618. Available online at: https://doi.org/10.1002/wsb.1025. Accessed March 9, 2020.

Shaffer, J. A., and D. A. Buhl. 2016. Effects of Wind-Energy Facilities on Breeding Grassland Bird Distributions. Conservation Biology 30 (1): 59-71.

Skeel, M. A., and E. P. Mallory. 1996. Whimbrel (*Numenius phaeopus*), version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, eds). Cornell Lab of Ornithology, Ithaca, NY, USA. Available online at: https://doi.org/10.2173/bna.219. Accessed March 9, 2020.

Smith, F. M., and B. D. Watts. 2015. Surveys and Habitat Use of the Whimbrel (*Numenius phaeopus*) During Fall Migration Along the Acadian Peninsula of New Brunswick, Canada, 2014. Center for Conservation Biology Technical Report Series CCBTR-15-02. College of William and Mary/Virginia Commonwealth University, Williamsburg, VA. 21 pp.

Smith, F. M., B. D. Watts, and A. E. Duerr. 2010. Stop-over and Migration Ecology of the Whimbrel: Fall 2009 Season Report. Center for Conservation Biology Technical Report Series, CCBTR-10-01. College of William and Mary & Virginia Commonwealth University, Williamsburg, VA. 18 pp.

Stantec Consulting Services Inc. (Stantec). 2009. Summer and Fall 2009 Avian and Bat Survey Report for the Bull Hill Wind Project in T16 MD, Maine. Prepared for Blue Sky East Wind, LLC.

Stantec. 2010. Spring 2010 Avian and Bat Survey Report for the Bull Hill Wind Project in T16 MD, Maine. Prepared for Blue Sky East Wind, LLC.

Stantec. 2011a. Wolfe Island Wind Plant Post-Construction Follow-up Plan, Bird and Bat Resources, Monitoring Report No. 3, January – June 2010. Prepared for TransAlta Corporation's wholly owned subsidiary Canadian Renewable Energy Corporation. January 2011.

Stantec. 2011b. Fall 2011 Radar Survey Results and Comparison to Fall 2009 Radar Results, Bull Hill Wind Project, Eastbrook, Maine. Memo from Stantec to Blue Sky East, LLC.

Stantec. 2011c. Spring 2011 Radar Survey Results and Comparison to Spring 2010 Results, Bull Hill, Eastbrook, Maine. Memo from Stantec to First Wind.

Stantec. 2012. Port Alma and Chatham Wind Power Projects Post-Construction Bird and Bat Monitoring Report: 2011. Prepared for Kruger Energy Port Alma Limited Partnership. February 2012.

Stantec. 2014a. 2014 Pre-Construction Avian and Bat Surveys – Weaver Wind Project. Prepared for First Wind, LLC.

Stantec. 2014b. Wolf Island Wind Plant Post-Construction Follow-Up Plan Bird and Bat Resources: Monitoring Report No. 7, January – June 2012. Prepared for Canadian Renewable Energy Corporation.



Stantec. 2015a. Bull Hill Wind Project Year 2 Post-Construction Wildlife Monitoring Report, 2014. Prepared for Blue Sky East, LLC, and First Wind.

Stantec. 2015b. Revised Bull Hill 2013 and 2014 Fatality Estimates. Memo from Stantec to SunEdison.

Stantec. 2016. Oakfield Wind Project year 1 Post-Construction Bird and Bat Fatality Monitoring Report, 2016.

Stantec. 2017a. Acoustic Bat Study Report, Downeast Wind Project – September 2015 to October 2016.

Stantec. 2017b. Nocturnal Migration Radar Report, Downeast Wind Project – September 2015 to October 2016.

Stantec. 2018a. Comparison of Pre-Construction Bird/Bat Activity and Post-Construction Mortality at Commercial Wind Projects in Maine.

Stantec. 2018b. Grassland Bird Surveys Downeast Wind Project - 2016 and 2017.

Stantec. 2018c. Weaver Wind Project Pre-Construction Nocturnal Radar Migration Surveys, fall 2016. Prepared for Weaver Wind LLC.

TRC. 2017a. Hancock Wind Project Post-Construction Bird and Bat Fatality Monitoring Report, Year 1 (2017). Prepared for Novatus Energy, LLC.

TRC. 2017b. Oakfield Wind Project Post-Construction Bird and Bat Fatality Monitoring Report, Year 2 (2017). Prepared for Novatus Energy, LLC.

TRC. 2018. Hancock Wind Project Post-Construction Bird and Bat Fatality Monitoring Report, Year 2 (2018). Prepared for Novatus Energy, LLC.

Tudor, L. 2017. Preliminary Investigation on Use of Maine Blueberry Barrens and intertidal Habitats by Migratory Whimbrel (*Numenius phaeopus*) and Post Breeding Upland Sandpiper (*Bartramia longicauda*) during 2015-2017.

Vickery, P. D., D. E. Blanco, and B. López-Lanús. 2010. Conservation Plan for the Upland Sandpiper (*Bartramia longicauda*). Version 1.1. Manomet Center for Conservation Sciences, Manomet, Massachusetts.

Vickery, P. D., M. L. Hunter, Jr., and S. M. Melvin. 1994. Effects of Habitat Area on the Distribution of Grassland Birds in Maine. Conservation Biology 8:1087-1097.

Walsh, S. C., B. Ballard, D. B. Wester, W. P. Kuvlesky, Jr., L. A. Brennan, M. L. Morrison, and K. Boydston. 2017. High Passage Rates and Different Seasonal Migration Strategies of Birds Along the Lower Texas Coast. International Journal of Biodiversity and Conservation 9(6): 183-199.

Watts, B. D., F. M. Smith, D. J. Hamilton, T. Keyes, J. Paquet, L. Pirie-Dominix, J. Rausch, B. Truitt, B. Winn, and P. Woodard. 2019. Seasonal Variation in Mortality Rates for Whimbrels (*Numenius phaeopus*) using the Western Atlantic Flyway. The Condor: Ornithological Applications 121:1-13.



Weik, A. P. 2006. Upland Sandpiper Assessment. Maine Department of Inland Fisheries and Wildlife, Wildlife Division, Wildlife Resource Assessment Section, Bird Group.

Whitman, A., A. Cutko, P. deMaynadier, S. Walker, B. Vickery, S. Stockwell, and R. Houston. 2013. Climate Change and Biodiversity in Maine: Vulnerability of Habitats and Priority Species. Manomet Center for Conservation Sciences (in Collaboration with Maine Beginning with Habitat Climate Change Working Group) Report SEI-2013-03. 96 pp. Brunswick, Maine.



ATTACHMENTS

Attachment A MAINE WIND PROJECTS MORTALITY REPORT

Comparison of Pre-construction Bird/Bat Activity and Post-construction Mortality at Commercial Wind Projects in Maine



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Stantec Consulting Services Inc.
Principal Author: Trevor Peterson

March 2017 rev September 2018

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Executive Summary

Wind developers are required to conduct pre-construction assessments of bird and bat activity at proposed wind farms. Directly measuring the distribution, abundance, and activity levels of birds and bats through pre-construction surveys is presumed to provide a basis for evaluating the mortality risk of a site. However, for pre-construction bird and bat activity to be a useful predictor of post-construction bird and bat mortality, there must be a strong and consistent relationship between the two. Stantec tested the relationship between pre-construction bird and bat survey results and post-construction mortality estimates from commercial wind farms in Maine, specifically evaluating whether variation in estimated bird and bat mortality rates was correlated with variation in corresponding pre-construction survey results. Our results showed no strong or consistent relationship between bird and bat activity measured prior to construction and post-construction mortality rates. The results in Maine are similar to others conducted at broader regional scales, challenging the assumption that pre-construction surveys are a meaningful predictor of risk. Wind projects have been operating in Maine since 2006. Stantec compiled all publicly available pre-construction and post-construction bird and bat survey results for proposed and operating wind projects in the state. Pre-construction data included 682 nights of radar surveys at 14 proposed sites, 442 raptor survey days at 13 proposed sites, and 10,644 detector-nights of acoustic bat surveys at 12 proposed sites. Post-construction bird and bat mortality estimates were available from 11 sites, 10 of which also had corresponding pre-construction data. Where both pre- and post-construction data are available, we assessed relationships between pre-construction bird and bat activity and post-construction mortality rates at the site level (overall and yearly), evaluating radar, bat acoustic, and raptor data separately.

Pre-construction bird, bat, and raptor activity levels and bird and bat mortality rates varied among sites, suggesting differing levels of risk. However, based on evaluation of multiple pairings of variables there is no consistent relationship between pre-construction activity levels and annual mortality estimates at the sites. Of all available pairings of pre-construction and post-construction results we compared, only one showed a statistically significant positive correlation. As such, existing data representing most operating wind projects in Maine fail to support the assumption that pre-construction bird and bat activity provides a reliable indicator of mortality rates during operation.

Similar attempts to compare pre-construction activity versus post-construction mortality rates in other states and on a national level have also failed to support this assumption. Despite some overall seasonal trends, which have been consistently demonstrated in pre-construction and post-construction surveys throughout North America, variation in overall pre-construction bird and bat activity appears to have no consistent relationship with mortality. Our understanding of other factors (e.g., weather, lighting) influencing mortality at wind projects and other projects (e.g., buildings, communication towers) suggest that risk to birds and bats is anything but static, and is instead influenced by a variety of seasonal, behavioral, and conditions-based factors.



This report was initially drafted in 2017 and updated in August 2018 to include results of post-construction studies conducted at 3 sites (Hancock, Bingham, and Oakfield) in 2017. We have updated all analyses and figures to reflect these updates and modified text to account for any changes in the results of statistical tests. Overall, the inclusion of data from sites monitored in 2017 did not change the results or Stantec's conclusions based on our analysis.

1.0 INTRODUCTION

The reality that commercial wind turbines can kill birds and bats has prompted a substantial effort to identify factors that predict the magnitude of risk for proposed project sites and explain why bird and bat mortality rates are higher at some wind farms than others. Pre-construction bird and bat surveys have been used in and outside of Maine to document distribution, abundance, species composition, and temporal/seasonal activity patterns of birds and bats at proposed wind power sites, and the results of such surveys have been used to evaluate the risks that development of such a site might present. However, for pre-construction bird and bat activity to be a meaningful predictor of risk at wind projects in Maine, the relationship between activity and post-construction mortality rates should be relatively strong and consistent.

Stantec analyzed the relationship between publicly available pre-construction bird and bat survey results and post-construction mortality estimates from commercial wind farms in Maine. We tested whether variation in estimated bird and bat mortality rates was correlated with variation in corresponding pre-construction survey results using straightforward linear regressions at the site level. This report summarizes the methods and results of our analyses, compares our results to similar efforts conducted in other states, and provides a regional context for the variation in mortality rates documented at wind projects in Maine. The results showed inconsistent relationships between bird and bat activity measured prior to construction and post-construction mortality rates. The results in Maine are aligned with those of similar analyses based on projects outside of Maine and challenge the assumption that pre-construction surveys are a meaningful predictor of risk.

2.0 METHODS

2.1 PRE-CONSTRUCTION AND POST-CONSTRUCTION DATA SUMMARY AND ANALYSIS

Stantec first compiled publicly available pre-construction bird, raptor, and bat survey results for commercial wind projects in Maine. These included results from projects that have gone through permitting and pre-construction survey results are therefore part of the public record. Because the level of effort and survey methods varied among sites[1], we derived a set of standardized metrics for each survey type based on the raw daily/nightly data to improve comparability of data among sites (Table 1).

We next obtained post-construction mortality estimates from all publicly available survey reports, tracking the survey interval, mortality estimator used, turbine characteristics, and operational parameters. To improve comparability of mortality estimates among sites, we converted per-

[1] For example, in collecting pre-construction data, 13 of the projects analyzed used an X-band radar system and 1 used the MERLIN™ radar system.

turbine bird and bat fatality estimates to per-megawatt (MW) estimates. To account for varying survey lengths among studies, we also adjusted each estimate based on the ratio of the survey period compared to the mean survey period of all projects in Maine. When present, we combined separate seasonal estimates (e.g., spring, summer, fall) and size-specific estimates for birds (e.g., small bird, medium bird, large bird) to generate annual[2] bird and bat mortality estimates. In cases where multiple mortality estimates existed for a given site/year (e.g., based on different search intervals), we calculated a mean mortality estimate for each year. We also generated a per-site overall average for birds and bats for sites with more than 1 year of post-construction monitoring (Table 1). The intent of calculating these summary statistics was to improve comparability of results among projects.

We plotted post-construction mortality versus pre-construction bird and bat activity rates at the site level and used linear regression to determine whether there were correlations between mortality estimates and pre-construction results. We used separate linear regressions for each pairing of pre-construction and post-construction data, analyzing annual mortality estimates and site-level mean mortality estimates separately. We conducted separate analyses of bat mortality datasets with and without 3 Maine projects (Bull Hill, Oakfield, and Passadumkeag) operating under curtailment; curtailment reduces bat mortality rates and could therefore affect results. Finally, to provide a regional context for bird and bat mortality documented at Maine wind projects, we compared magnitude of bird and bat mortality estimates from Maine projects to those from nearby states. We implemented all data summary, graphing, and analysis using statistical software and reported adjusted R^2 values for all regressions (R Core Team 2014).

[2] Mortality surveys in Maine typically occur between April/May and October and, therefore, do not necessarily reflect the full year, although they cover much of the period during which bats and songbirds are active and are generally presented as annual estimates in the reports.

Table 1. Description of raw data and derived metrics from typical pre- and post-construction bird and bat surveys conducted at wind projects in Maine.

Survey Type	Raw Data	Calculated Metric(s)
Acoustic bat survey	• Nightly passes per detector-night, grouped by detector and species/species guild	• Mean/median passes per detector-night, grouped by detector type • Percent of surveyed nights with bat activity • Overall species composition by detector type
Nocturnal radar survey	• Nightly passage rate • Nightly flight height • Percent targets below turbine height • Flight path direction	• Mean/median passage rate • Mean/median flight height • Mean/median percent targets below turbine height
Raptor migration surveys	• Raptors observed per species per day • Flight height and behavior • Flight path direction	• Mean raptors observed per day
Post-construction mortality surveys	• Estimated bird/bat carcasses per turbine per season • Bird/bat carcasses (by species) found per turbine search	• Estimated bird/bat carcasses per MW, adjusted for length of survey period (annual and overall per site) • Mean monthly bird/bat carcasses found per search

2.2 REGIONAL CONTEXT

To put the Maine results in context, we also compiled data from publicly available post-construction mortality monitoring reports for wind projects in 6 northeastern states (Maine, New Hampshire, Vermont, New York, Pennsylvania, and West Virginia). For the regional comparison, we excluded mortality estimates from sites implementing curtailment to minimize variation due to factors other than siting. We did not have access to original raw data used to calculate bias estimates and correction factors in all cases. In order to compare similarly reported projects, our regional analyses only include reported estimates that incorporated bias and correction factors such as searcher efficiency and carcass removal. In most cases, estimates had also been adjusted to account for areas not surveyed. We combined separate seasonal and size-class estimates into overall annual bird and bat estimates, as described above. We converted per-turbine estimates to per-MW estimates and incorporated the same scaling factor mentioned above to account for variable survey lengths. If multiple estimates were reported for a site during a year, based on different search intervals or calculation methods, we calculated the mean bird and bat mortality rates for that year to ensure each site/year combination was represented only once in the dataset.



3.0 RESULTS

Stantec obtained pre-construction and/or post-construction survey results from 15 proposed or operating wind projects in Maine including nocturnal radar data (14 sites), raptor migration data (13 sites), bat acoustic data (12 sites), and post-construction bird and bat mortality data (11 sites) (Appendix A Table 1). Ten of those sites had both pre-construction and post-construction data readily available. Because analysis focused on site-level relationships, we considered data from multiphase projects (e.g., Stetson I and II) as representative of one site.

3.1 PRE-CONSTRUCTION BIRD AND BAT ACTIVITY SURVEYS

3.1.1 Radar Surveys

Radar surveys and analytical approaches used in Maine have followed consistent methods since the mid-2000s[3]. All except one radar survey we analyzed were conducted using the same radar technology (x-band 12 kilowatt marine radar operated in horizontal and vertical modes) and using the same analysis methods (randomly selected subsamples of data analyzed by hand to quantify passage rates, flight directions, and flight height). One other survey was conducted using the MERLIN™ radar system, which uses horizontal and vertical radars simultaneously to automatically and continuously record bird and bat activity. The pre-construction radar survey dataset consisted of 682 nights of radar surveys from 14 sites (Appendix B).

We report radar survey results in terms of "passage rates", which represent the number of "targets" flying through the airspace sampled by the radar in horizontal mode, and the "percent of targets below turbine height" based on vertical operation. "Below turbine height" includes targets at or below the maximum height of the turbines. Among the 14 Maine projects with nocturnal radar data, mean passage rates ranged from 310.5 – 746.2 targets/kilometer/hour, with an overall mean of 438.0 (Figure 3-1). The mean percent of targets below turbine height ranged from 11% to 33% with an overall mean of 23% (Figure 3-2).

[3] The first nocturnal radar surveys in Maine occurred in the mid-1990s and used 25 kilowatt marine radars.

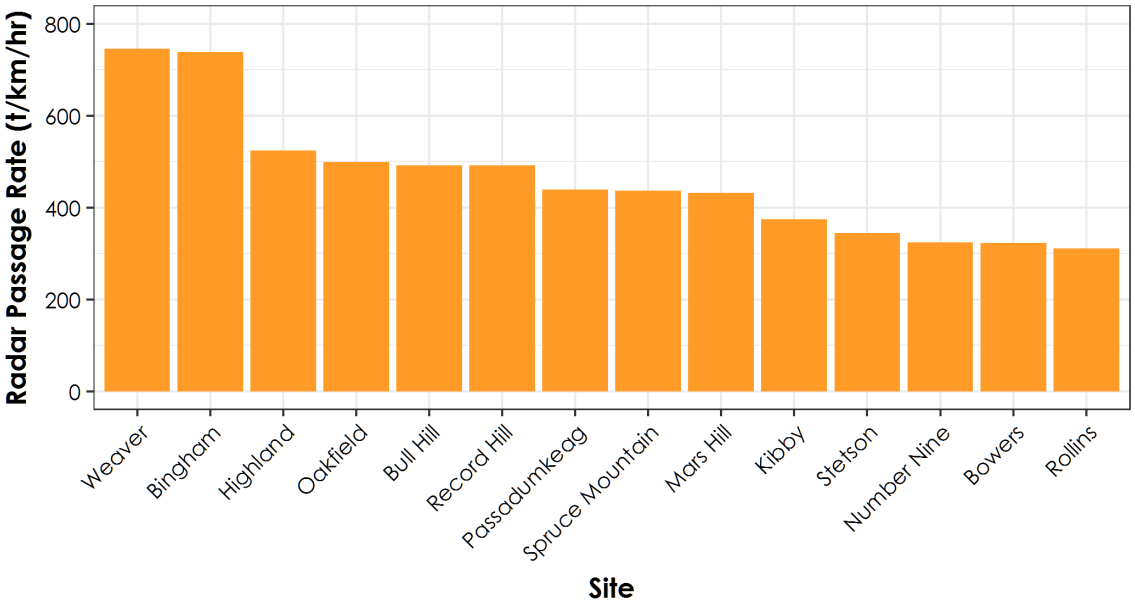


Figure 3-1. Mean radar passage rates from pre-construction surveys at Maine wind projects (proposed and existing).

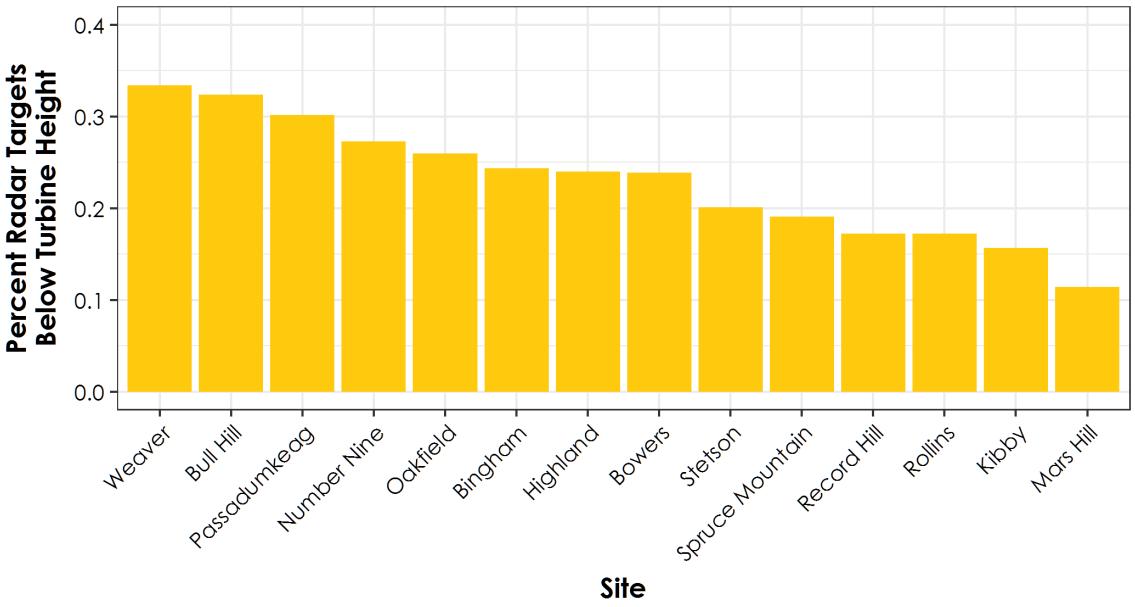


Figure 3-2. Mean percent of radar targets below turbine height from pre-construction surveys at Maine wind projects (proposed and existing).

3.1.2 Raptor Surveys

Raptor surveys followed consistent methods among sites, based on visual surveys conducted by a single observer equipped with binoculars and spotting scope. Pre-construction raptor survey results were available for 442 survey days from 13 sites, observing more than 4,053 raptors during the project area surveys. The mean number of raptors observed per survey day ranged from 5.1 to 18.7 raptors/day among sites (mean = 10.3; Figure 3-3).

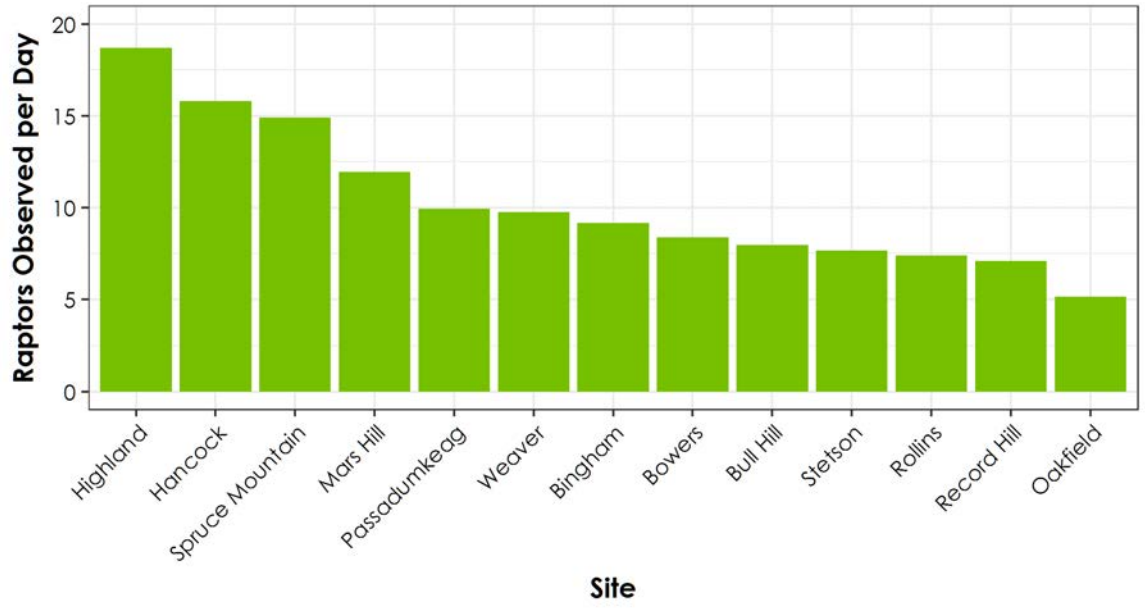


Figure 3-3. Mean number of raptors observed per survey day from pre-construction surveys at Maine wind projects (proposed and existing).

3.1.3 Acoustic Bat Surveys

Acoustic bat surveys can vary widely in scope and methods, although most pre-construction surveys in Maine have involved deploying "Met High" (>20 m above ground level [agl] in meteorological [met] towers), "Met Low" (~10 – 20 m agl in met towers), or "Tree" detectors (~2 m agl) in trees. Because multiple detectors may be at different heights each night, the results are tracked as "detector nights" (DN), rather than just nights (i.e., 3 detectors during 1 calendar night equals 3 DN per night). We analyzed nightly pre-construction bat acoustic data to Tree detectors (n = 5,346 DN), Met High detectors (n = 2,676 DN), and Met Low detectors (n = 2,622 DN), resulting in a dataset representing 10,644 detector nights from 121 sites over 9 years (2006–2014). In cases where multiple detectors were deployed, we calculated mean nightly activity levels for each detector type (hereafter referring to position as Met High, Met Low, or Tree).

Because mean rate of passes per DN calculated per site varied significantly among detector types ($R^2 = 0.53$, $p < 0.001$, $F(2,26) = 16.66$), we plotted and analyzed results separately for each detector type. Mean bat passes per night ranged from 0.10 to 1.96 at Met High detectors (mean = 0.67), from 0.25 to 3.60 at Met Low detectors (mean = 1.12), and from 4.3 to 68.45 (mean = 29.48) for Tree detectors (Figure 3-4).

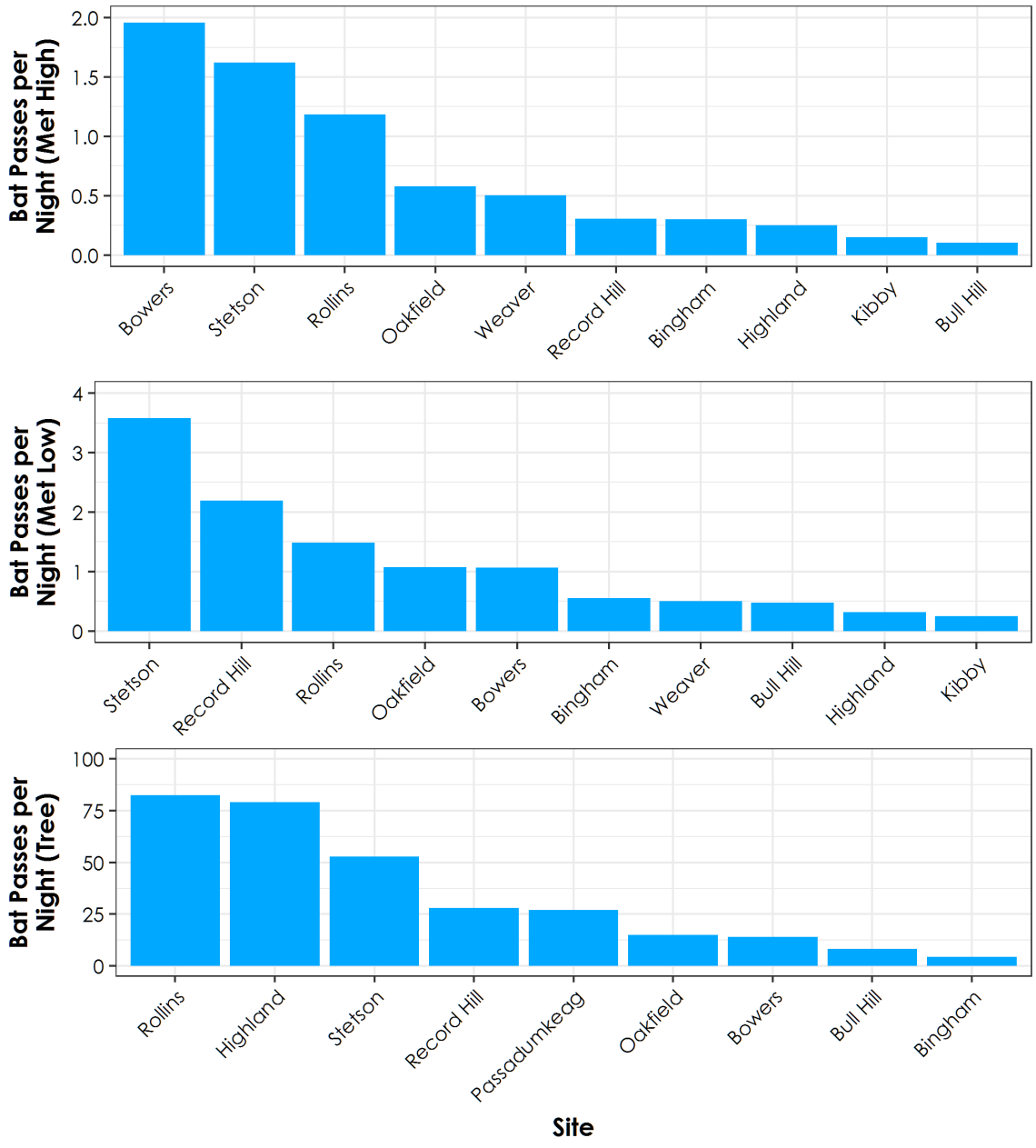


Figure 3-4. Mean number of bat passes per detector night by detector type from pre-construction surveys at Maine wind projects (proposed and existing). Note the varying y-axis scale for each detector type and the differing detector heights among the 12 sites.

3.2 POST-CONSTRUCTION MORTALITY ESTIMATES

Bird and bat mortality estimates are based on standardized counts of carcasses found by trained observers walking regularly spaced transects within the cleared turbine pad. Because the number of days between turbine searches (search interval), the size of searchable area, the ability of searchers to see carcasses (searcher efficiency), and the rate at which carcasses are removed by scavengers (scavenging rate) vary among sites and years, the total number of carcasses is adjusted upwards by correction factors to generate a cumulative, per-turbine estimate representing the entire survey period (usually encompassing spring, summer, and fall).

Several methods exist to adjust estimates based on search interval, searcher efficiency, carcass removal, and search area. The most commonly applied methods in Maine have been the "Huso" estimator (Huso 2010, Huso et al. 2012), the "Jain" estimator (Jain et al. 2009), and the "Shoenfeld" estimator (Shoenfeld 2004). Each of these estimators results in an annual per-turbine estimate (separate for birds and bats) and associated confidence intervals, although the methods have different biases and would not yield the same results if used on the same dataset. Although this introduces a source of variation when comparing mortality rates, we did not have access to the raw data necessary to recalculate mortality estimates using a common estimator. Our analyses are, therefore, based on reported estimates. In cases where multiple estimates exist, based on different search intervals or estimators, we calculated mean estimated values.

Bird and bat mortality rates have been estimated for 11 operating wind projects in Maine. Estimates of bat and bird mortality rates and associated confidence intervals varied widely among sites and among years for individual sites. Mean annual bat mortality estimates ranged from 0.12 to 2.95 bats/MW (mean = 0.76;

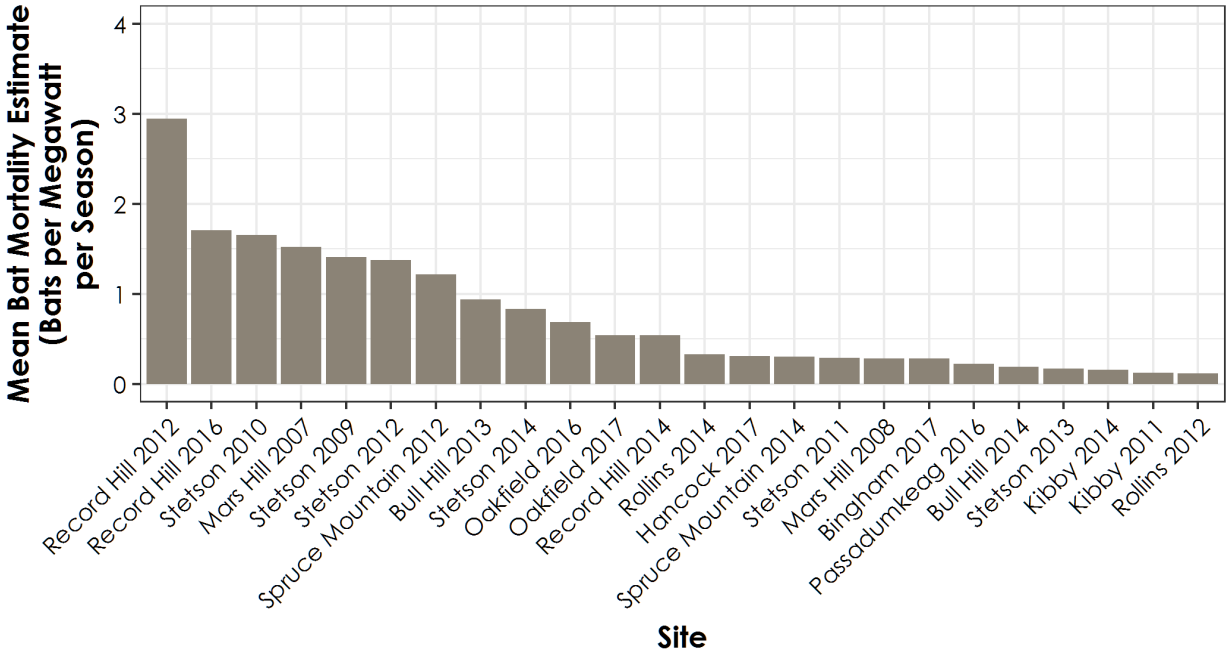


Figure 3-5) and estimated annual bird mortality ranged from 0.54 to 6.95 birds/MW (mean = 2.78; Figure 3-6) per site. Of the 11 sites from which mortality estimates were available, 5 sites (Bingham, Bull Hill, Hancock, Oakfield, and Passadumkeag) were implementing feathering below an increased cut-in speeds ranging from 5.0 to 6.0 m/s during certain times of year and the remaining 6 sites were operating turbines according to manufactured standard cut-in speed. Appendix C contains site-level post-construction bird and bat estimates on which the plotted mean values were based.

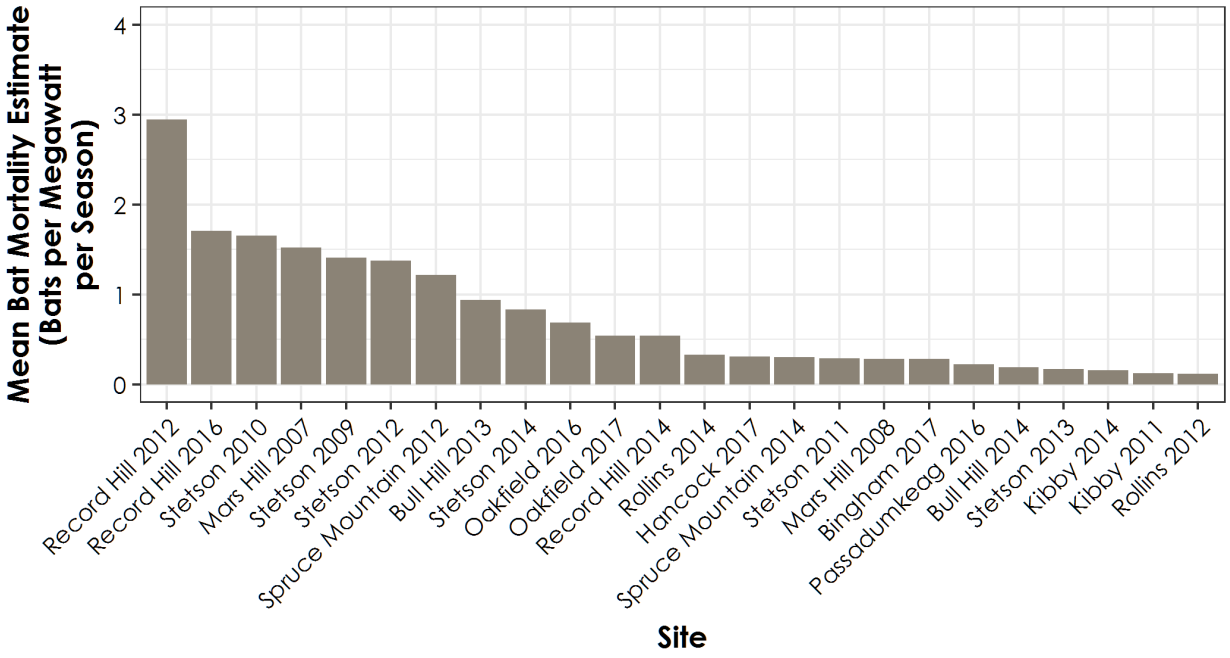


Figure 3-5. Mean bat mortality estimates by year from Maine wind projects by year.

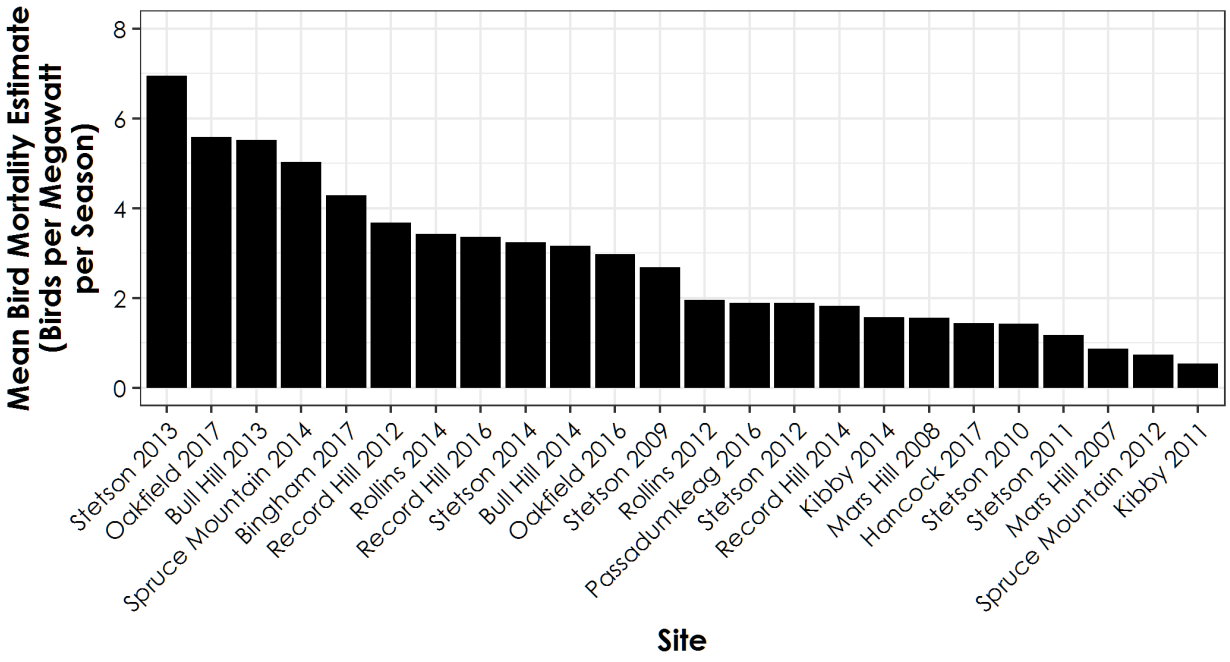


Figure 3-6. Mean bird mortality estimates by year from Maine wind projects.

3.3 COMPARING PRE-CONSTRUCTION AND POST-CONSTRUCTION RESULTS

Paired pre-construction survey results and post-construction mortality estimates were available for 10 sites in Maine.

3.3.1 Radar Surveys

Estimated bat mortality rates (adjusted to account for variable survey periods) showed no apparent trends with pre-construction radar passage rates (Figure 3-7) or the percent of radar targets below turbine height (Figure 3-8)). Linear models comparing estimated bat mortality versus pre-construction radar data indicated that no significant relationships existed between these variables at the site level whether analyses were done using overall averages or annual mortality data (Appendix D Figures 1 and 2). Shown are figures that include 5 sites using curtailment (Bingham, Bull Hill, Hancock, Oakfield, and Passadumkeag); excluding these sites did not affect the results of the analysis. Some of the highest radar passage rates were associated with the lowest estimated mortality rates, contributing to a low correlation coefficient (R^2) and non-significant *P*-value (see equations inset in Appendix D figures).

Comparisons of radar passage rates with bird mortality at the site level using annual mortality estimates suggested a slight trend towards higher mortality rates at sites with higher passage

rates (Figure 3-9). Although linear regression suggested a slight positive correlation, this relationship was not statistically significant whether using annual or site-level average mortality estimates (Appendix D Figure 3). Sites with higher estimated rates of bird mortality appeared to also have higher percentages of radar targets below turbine height in pre-construction surveys (Figure 3-10), although linear regression indicated that this trend was marginally significant only when using site-level annual estimates (Appendix D Figure 4).

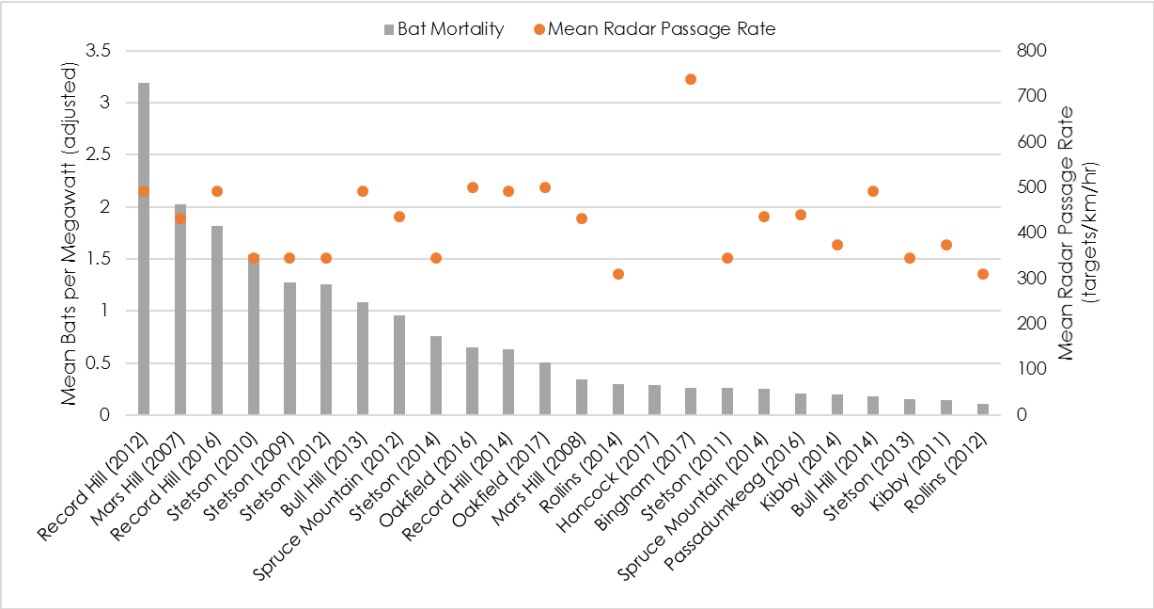


Figure 3-7. Mean adjusted annual bat mortality rates (gray columns) plotted with radar passage rate (orange dots) for commercial wind projects in Maine.

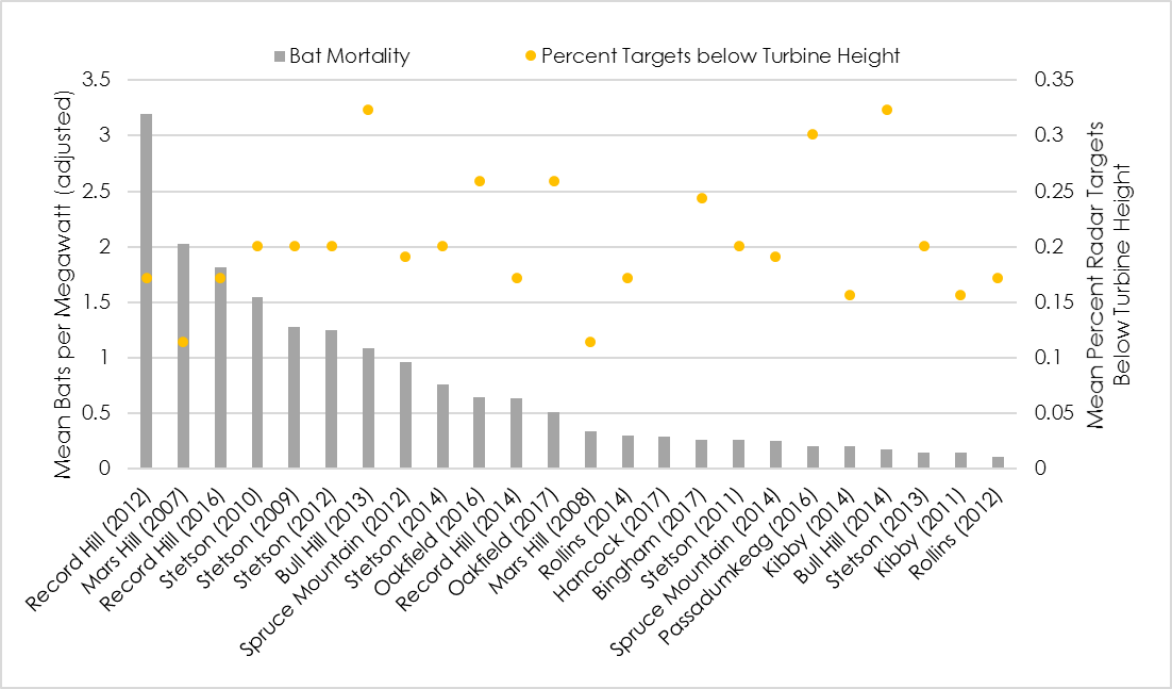


Figure 3-8. Mean adjusted annual bat mortality rates (gray columns) plotted with percent radar targets below turbine height (yellow dots) for commercial wind projects in Maine.

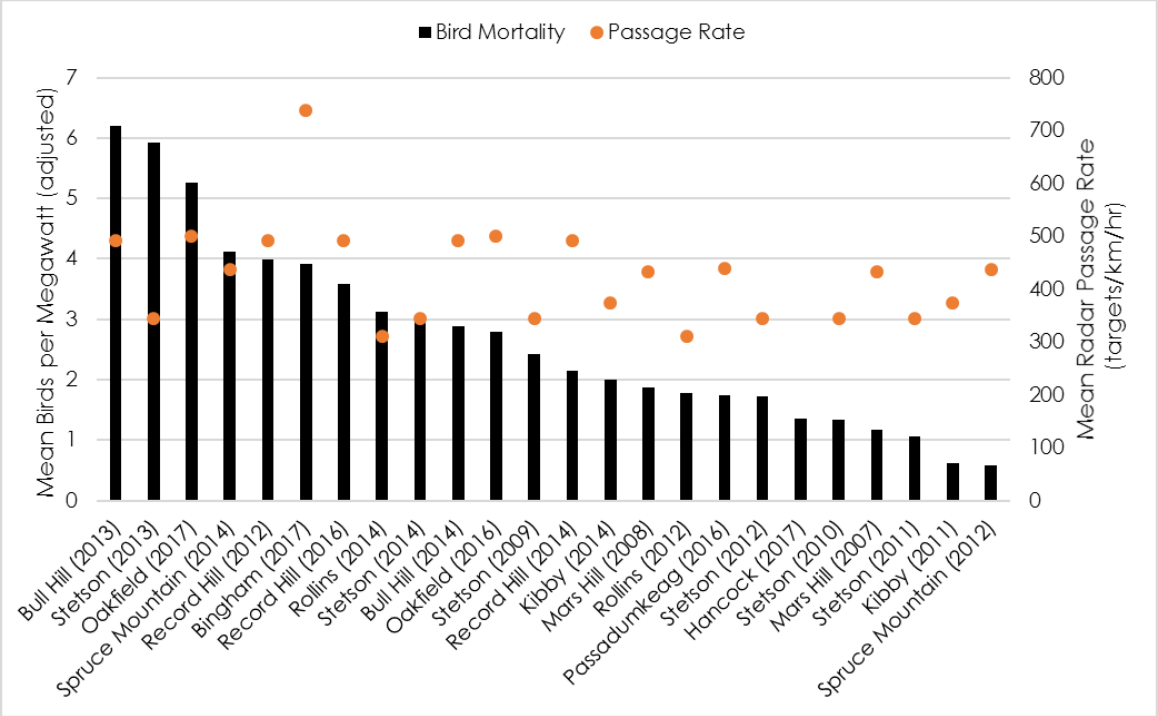


Figure 3-9. Mean adjusted annual bird mortality rates (black columns) plotted with radar passage rate (orange dots) for commercial wind projects in Maine.

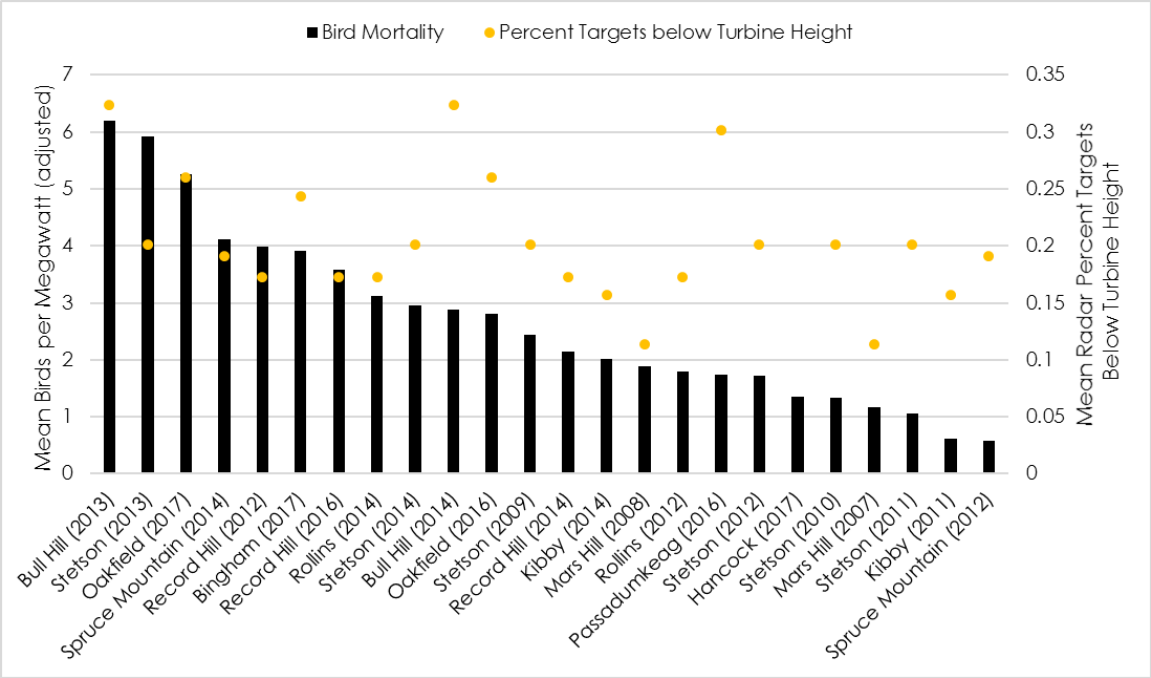


Figure 3-10. Mean adjusted annual bird mortality rates (black columns) plotted with percent radar targets below turbine height (yellow dots) for commercial wind projects in Maine.

3.3.2 Acoustic Surveys

Pre-construction bat acoustic activity rates, whether measured at Met High, Met Low, or Tree detectors, showed no discernable relationship with post-construction bat mortality estimates (Figure 3-11). Linear regression of bat mortality estimates as a function of pre-construction bat activity based on annual data (Appendix D Figure 5) or site-level averages (Appendix D Figure 6) also demonstrated no consistent or statistically significant relationships. As with radar data, the results were similar whether including or excluding the 5 sites implementing curtailment.



Figure 3-11. Mean adjusted annual bat mortality rates (gray columns) plotted with acoustic bat activity levels (blue dots) by detector type for commercial wind projects in Maine. Note different secondary y-axis scales for each detector type.

3.3.3 Raptor Surveys

Although raptors are abundant, raptor mortality at wind projects in Maine has been infrequent, preventing calculation of raptor mortality rates and a comparison to pre-construction raptor survey results.

In summary, only one pair of pre-construction and post-construction data had a statistically significant relationship (percent of radar targets below turbine height was positively correlated with estimated bird mortality rates), whether analyzed at the site level or using annual mortality estimates. Considered together, statistical analyses based on both bird and bat pre-construction surveys demonstrate weak relationships (dots in scatterplots do not fall close to a line) and inconsistent relationships (slopes of linear regressions were not all positive or negative). Although only 10 datapoints were available for site-level analyses after combining survey years, 10 points could sufficiently demonstrate a linear relationship where a strong relationship is present.

3.4 REGIONAL MORTALITY PATTERNS

To provide context for the Maine results, Stantec also compiled 132 empirical bat and bird mortality estimates from 46 wind projects in the Northeast to identify consistency or variation. After removing results from sites with curtailment, as explained above, the dataset included 75 mortality studies conducted at 37 total sites; including 17 studies at 6 sites in Maine, 6 studies at 3 sites in New Hampshire, 22 studies at 12 sites in New York, 24 studies at 12 sites in Pennsylvania, and 6 studies at 4 sites in West Virginia (Appendix E).

Mean adjusted bat mortality rates summarized at the state level increased steadily from a low in Maine (mean = 0.9 bats/MW) to a high in West Virginia (mean = 17.3 bats/MW). Bird mortality rates, on the other hand, were less variable among states, ranging from 1.4 birds/MW in Pennsylvania to 3.1 birds/MW in West Virginia (Figure 3-12).

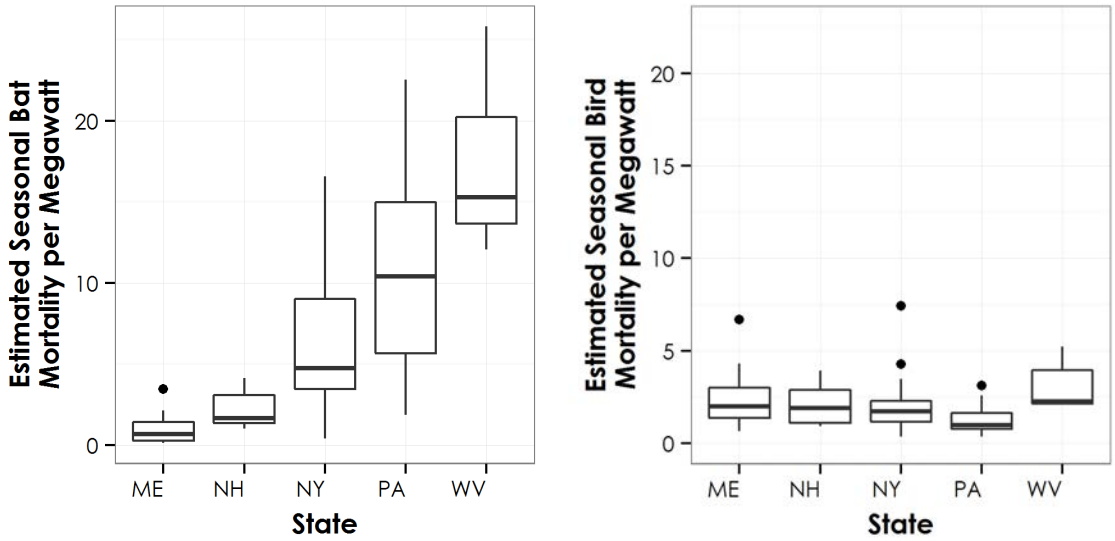


Figure 3-12. Bat (left) and bird (right) mortality estimates from publicly available post-construction studies at commercial wind farms operating without curtailment in the Northeast.

4.0 DISCUSSION

Predicting bird and bat mortality rates based on pre-construction bird and bat activity levels requires a strong link between presence/abundance of birds and bats with the magnitude of mortality. Overall, despite weak positive relationships between bird mortality rates and pre-construction radar survey results, the data from Maine fails to support such a link. Although only 10 paired pre-construction and post-construction datasets exist in Maine (corresponding to the 10 projects for which mortality estimates and pre-construction data are publicly available), the sample size would be sufficient where a strong and consistent relationship would exist between any paired variables. Because we tested each paired dataset using mortality estimates averaged at the site level (which reduces some of the scatter among years) and treating annual mortality estimates from each site as independent datapoints, our analysis was comprehensive yet straightforward. Of all relationships we tested, only the relationship between the percent of targets below turbine height was positively correlated with bird mortality rates when using annual data.

Overall, bird and bat mortality rates at Maine wind projects showed no consistent relationship to bird and bat activity levels measured before construction. Whether based on mean mortality estimates per site (averaged over multiple years at a site) or separate annual estimates, variation in pre-construction bird and bat activity explained little if any of the variation in mortality rates. The correlation coefficients for linear regressions (labeled as R^2 in figures in Appendix D), which indicates the strength of the relationship between two variables and typically ranges from 0 (indicating no relationship) to 1 (indicating a very strong relationship),

was less than or equal to 0.3 in all relationships we tested. This indicates that variation in pre-construction bird and bat activity explained less than 30% of the variation in mortality rates among sites. In other words, variation in mortality attributable to variation in pre-construction data could not be distinguished from random variation. The 4 raptor mortalities documented in 23 publicly available Maine post-construction studies involving more than 13,000 turbine searches indicates low magnitude of risk to raptors even at sites with higher pre-construction raptor activity levels.

The lack of strong correlations between pre-construction and post-construction surveys is not unique to Maine. A recently published study comparing rankings of perceived pre-construction risk to bats and post-construction mortality rates from 29 European wind projects documented a marginally significant relationship and concluded that the substantial effort and cost associated with pre-construction assessments was largely unjustified by their analyses (Lintott et al. 2016). Similarly, a study comparing pre-construction raptor abundance at 20 wind projects in Spain documented significant differences among sites in terms of predicted risk but found no relationship between pre-construction bird activity and post-construction mortality rates (Ferrer et al. 2012). Analysis of results from 12 North American wind projects with pre-construction and post-construction data documented a weak positive relationship between bat activity and bat mortality, although the relationship explained only a small portion of variation in mortality (Hein et al. 2013). The Pennsylvania Game Commission concluded that raptor abundance measured pre-construction at 12 wind farms in Pennsylvania showed no correlation with post-construction mortality rates and indicated that data from the same 12 wind farms with paired data were insufficient for establishing relationships between pre-construction bat activity and bat mortality rates (Taucher et al. 2012). This study further detected no correlation between raptor activity and mortality rates measured concurrently based on post-construction raptor activity surveys.

Several factors could explain the lack of correlation between pre-construction bird and bat activity and mortality rates at wind farms in Maine and elsewhere. Pre-construction metrics do not necessarily reflect the abundance of birds and bats in an area. For example, acoustic bat surveys cannot distinguish individual bats or determine whether individuals are detected more than once (Hayes 1997) and radar cannot reliably and consistently differentiate between individual species or even birds from bats. In addition to characteristics of the data themselves, numerous factors beyond the abundance of birds and bats may affect mortality rates observed at wind projects including turbine characteristics (e.g., height, size of rotor-swept area, lighting arrangements, algorithms controlling turbine operation and startup/shutdown conditions), site conditions (e.g., topography, elevation, habitat types), or behavioral processes (e.g., attraction, avoidance, migratory strategies, species-specific risk factors)(Marques et al. 2014; Cryan and Barclay 2009; Kunz et al. 2007). The presence of the turbines themselves may further manipulate the distribution and behavior of birds and bats, affecting the predictive power of pre-construction surveys.

Since current pre-construction measures of bird and bat activity are not strong predictors of risk, factors such as weather conditions (e.g., temperature and wind speed), the presence of



lighting, and details of turbine operation (which can be modified through curtailment) appear to have greater influence on mortality rates.

It is important to evaluate the data in the context of a broader region when evaluating whether the observed variation in mortality, both among Maine wind projects and in total, is ecologically significant. The difference between the highest and lowest bat mortality estimates in Maine was 3.3 bats/MW (based on site-level average adjusted mortality estimates for sites without curtailment). To put that in a regional context, the highest adjusted annual bat mortality rate documented at any Maine project was lower than the statewide average bat mortality rate for West Virginia, Pennsylvania, and New York. Statewide bat mortality estimates diminish steadily northward from West Virginia to Maine and is likely tied to regional abundance and extended periods of activity in more southern areas. Although this trend has been noted previously, there have been no clear associations between mortality rates and landscape or habitat features in the Northeast (Hein and Schirmacher 2016).

The same geographic trend was not apparent for birds. Mean bird mortality rates and ranges among projects in each state were similar in Northeast states. Comparing mortality rates among states compounds issues related to survey methods, as states often recommend varying levels of effort or use of different mortality estimators (Arnett et al. 2013). Nevertheless, the distinct trend observed for bat mortality estimates among 5 northeastern states is noteworthy, particularly because no such trend existed for bird mortality. Since bird and bat mortality estimates are almost always generated in pairs using the same search and analysis methods, the contrast between the trends is strengthened.

Despite the growing number of paired pre- and post-construction datasets across regions, efforts to link these datasets have not revealed strong relationships. The lack of a clear and consistent relationship between the pre-construction bird and bat activity and mortality rates in our results as well as those of other studies in the U.S. and abroad warrants a re-evaluation of how pre-construction survey data are used in project siting decisions.

Approaching project siting with the idea of differentiating “high” and “low” risk sites based on pre-construction bird and bat activity levels may fail to accomplish the stated goals of avoiding and reducing risk. Our understanding of the factors influencing mortality patterns suggest that risk to birds and bats is dynamic, and is influenced by a variety of seasonal, site-specific, behavioral, and conditions-based factors. Additionally, the relationship between activity and risk may vary dramatically between these two very different taxa and is likely governed by numerous interacting factors. If our current methods do not provide a meaningful tool for evaluating collision risk, more meaningful data may be collected through alternative methods.

Diverting resources away from pre-construction metrics that have shown little utility in predicting bird and bat mortality (e.g., raptor migration surveys, tree-level bat acoustic surveys, extensive radar surveys) and towards efforts to better identify high risk conditions or develop mitigation (e.g., nacelle-mounted acoustic surveys to document wind speed and temperature conditions during which bats are present in the rotor zone; correlate weather conditions with avian



mortality; clean up roadkill to reduce vehicle collisions with raptors and eagles; gate known hibernacula; provide research funding for MDIFW or others to mist net for bats and find maternity roosts) would help wind developers and resource agencies better predict and manage impacts. Comparing the extent of high-risk conditions among potential projects would be far more effective at reducing mortality than knowing that pre-construction bat activity was 50% higher at one site versus another. Accurate characterization of high-risk conditions would in turn enable predictions of how frequently such conditions occur and the cost and effectiveness of appropriate management actions.

Although typical pre-construction survey methods do not predict the magnitude of turbine-related impacts, methods could be revised to focus not only on habitat-related impacts but also determining the relative frequency of high-risk conditions linked to bird and bat mortality. This approach would provide a more comprehensive understanding of the types of impacts expected for a proposed project and could help project developers evaluate and design site-specific adaptive management measures (e.g., threshold wind speeds, temperatures, and seasons where curtailment would be most effective at reducing bat mortality while minimizing the cost of lost power generation). Traditional meteorological measurements and GIS-based landscape/habitat analyses could play a far greater role in such assessments, supplemented by field surveys to document rare species presence and/or sensitive habitats that could be affected by construction of the projects.

True adaptive management requires a better understanding of not only the relationship between risk and conditions but also the efficacy of varying levels of operational management, which could be achieved through simultaneous comparison of multiple management strategies. Ultimately, the cost of operational management actions could be reduced and effectiveness improved if such measures are focused on the demonstrated periods of highest risk.

5.0 REFERENCES

Arnett, E. B., W. K. Brown, W. P. Erickson, J. K. Fiedler, B. L. Hamilton, T. H. Henry, A. Jain, G. D. Johnson, J. Kerns, R. R. Koford, C. P. Nicholson, T. J. O'Connell, M. D. Piorkowski, and R. D. Tankersley, Jr. 2008. Patterns in bat fatalities at wind energy facilities in North America. The Journal of Wildlife Management 72(1): 61–78.

Arnett, E. B., G. D. Johnson, W. P. Erickson, and C.D. Hein. 2013. A synthesis of operational mitigation studies to reduce bat fatalities in North America. Report prepared for the National Renewable Energy Laboratory, Golden, CO.

Cryan, P. M., and R. M. R. Barclay. 2009. Causes of bat fatalities at wind turbines: hypotheses and predictions. Journal of Mammalogy 90(6): 1330 – 1340.



Ferrer, M., M. de Lucas, G. F. E. Janss, E. Casado, A. R. Muñoz, M. J. Bechard, and C. P. Calabuig. 2012. Weak relationship between risk assessment studies and recorded mortality in wind farms. Journal of Applied Ecology 49(1):38 – 46.

Hayes, J. P. 1997. Temporal variation in activity of bats and the design of echolocation-monitoring studies. Journal of Mammalogy 78:514-524.

Hein, C. D. and M. Schirmacher. 2016. Impact of wind energy on bats: a summary of our current knowledge. Human-Wildlife Interactions 10(1):19 – 27.

Hein, C. D., J. Gruver, and E. B. Arnett. 2013. Relating pre-construction bat activity and post-construction bat fatality to predict risk at wind energy facilities: a synthesis. A report submitted to the National Renewable Energy Laboratory. Bat Conservation International, Austin, TX, USA.

Huso, M. M. P. 2010. An Estimator of Wildlife Fatality from Observed Carcasses. Environmetrics. Wiley Blackwell. DOI:10.1002/env.1052

Huso, M., N. Som, and L. Ladd. 2012. Fatality estimator user's guide: U.S. Geological Survey Data Series 729, 22 p.

Jain, A., P. Kerlinger, R. Curry, L. Slobodnik, J. Quant, D. Pursell. 2009. Annual Report for the Noble Bliss Windpark, LLC. Postconstruction Bird and Bat Fatality Study – 2008. Prepared by Curry and Kerlinger, LLC.

Kunz, T. H., E. B. Arnett, B. M. Cooper, W. P. Erickson, R. P. Larkin, T. Mabee, M. L. Morrison, M. D. Strickland, and J. M. Szewczak. 2007. Assessing impacts of wind-energy development on nocturnally active birds and bats: A guidance document. Journal of Wildlife Management 71:2449-2486.

Lintott, P. R., S. M. Richardson, D. J. Hosken, S. A. Fensome, and F. Mathews. 2016. Ecological impact assessments fail to reduce risk of bat casualties at wind farms. Current Biology 26:R1135 – R1136.

Marques, A.T., H. Batalha, S. Rodrigues, H. Costa, M.J.R. Pereira, C. Fonseca, M. Mascarenhas, and J. Bernardino. 2014. Understanding bird collisions at wind farms: An updated review on the causes and possible mitigation strategies. Biological Conservation 179:40 – 52.

R Core Team. 2014. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org/.

Shoenfeld, P. 2004. Suggestions regarding avian mortality extrapolation. Technical memo provided to FPL Energy. Davis, WV, West Virginia Highlands Conservancy. 6 p.



Taucher, J., T. Librandi-Mumma, and W. Capouillez. 2012. Pennsylvania Game Commission Wind Energy Voluntary Cooperation Agreement Third Summary Report.

U.S. Fish and Wildlife Service. 2012. Land-Based Wind Energy Guidelines. U.S. Fish and Wildlife Service, Washington, DC.



APPENDICES



Appendix A INVENTORY OF PRE- AND POST-CONSTRUCTION DATA

Appendix A Table 1. Inventory of pre-construction and post-construction data compiled for proposed and existing commercial wind projects in Maine.

Site (Region) Bold=pre and post data	Megawatts (# Turbines)	Year	Data (sample size)	Reference
Bingham (Western)	250 (119)	2010	• Bat acoustic data from Tree (n = 602 DN), Met High (n = 390 DN) and Met Low detectors (n = 517 DN) • Nocturnal radar data (n = 40 nights) • Raptor migration data (n = 19 days)	Stantec Consulting Services Inc. 2012. Spring 2010 Avian and Bat Survey Report for the Bingham Wind Project. Prepared for Blue Sky East Wind, LLC. Stantec Consulting Services Inc. 2012. Fall 2010 Avian and Bat Survey Report for the Bingham Wind Project. Prepared for Blue Sky East Wind, LLC.
		2011	• Nocturnal radar data (n = 12 nights)	Stantec Consulting Services Inc. 2012. Fall 2011 Radar Survey Results and Comparison to Fall 2010 Results at the Bingham Wind Project. Memo to Blue Sky East Wind, LLC.
		2017	• Mortality monitoring (33 turbines, survey period = 184 days, interval = 3-day, Huso, Shoenfeld, and Smallwood estimators).	TRC. 2017. Bingham Wind Project Post-construction Bird and Bat Fatality Monitoring Report Year 1 (2017).
Bowers (Central)	Proposed	2009	• Bat acoustic data from Tree detectors (n = 342 DN) • Nocturnal radar data (n = 22 nights) • Raptor migration data (n = 15 days)	Stantec Consulting Services Inc. 2010. Fall 2009 Avian and Bat Surveys for the Bowers Wind Project. Prepared for Champlain Wind Energy, LLC.
		2010	• Bat acoustic data from Tree (n = 498 DN), Met High (n = 143 DN), and Met Low detectors (n = 143 DN) • Nocturnal radar data (n = 20 nights) • Raptor migration data (n = 12 days)	Stantec Consulting Services Inc. 2010. 2010 Spring Avian and Spring/Summer Bat Surveys for the Bowers Wind Project. Prepared for Champlain Wind Energy LLC.
Bull Hill (Coastal Plain)	34.2 (19)	2009	• Bat acoustic data from Tree (n = 426 DN), Met High (n = 94 DN), and Met Low detectors (n = 114 DN) • Nocturnal radar data (n = 20 nights) • Raptor migration data (n = 18 days)	Stantec Consulting Services Inc. 2010. Summer and Fall 2009 Avian and Bat Survey Report for the Bull Hill Project. Prepared for Blue Sky East Wind, LLC.
		2010	• Bat acoustic data from Tree (n = 307 DN), Met High (n = 81), and Met Low detectors (n = 79 DN) • Nocturnal radar data (n = 20 nights) • Raptor migration data (n = 25 days)	Stantec Consulting Services Inc. 2010. Spring 2010 Avian and Bat Survey Report for the Bull Hill Wind Project. Prepared for Blue Sky East Wind LLC.
		2011	• Nocturnal radar data (n = 20 nights)	Stantec Consulting Services Inc. 2011. Fall 2011 Radar Survey Results and Comparison to Fall 2009 Radar Results: Memo for the Bull Hill Wind Project. Prepared for Blue Sky East Wind, LLC.
		2013	• Bat acoustic data from turbine base detectors (n = 102 DN) • Mortality data (19 turbines, survey period = 130 days (daily) & 177 days (weekly), interval = daily/weekly by season, Huso estimator)	Stantec Consulting Services Inc. 2014. Bull Hill Year 1 Post-Construction Wildlife Monitoring Report, 2013. Prepared for First Wind, LLC.
		2014	• Bat acoustic data from Tree (n = 217 DN) and turbine base detectors (n = 500 DN) • Mortality data (19 turbines, survey period = 184 days, interval = daily/3-day by season, Huso estimator & Shoenfeld estimator)	Stantec Consulting Services Inc. 2015. Bull Hill Wind Project Year 2 Post-Construction Wildlife Monitoring Report, 2014. Prepared for First Wind, LLC.

COMPARISON OF PRE-CONSTRUCTION BIRD/BAT ACTIVITY AND POST-CONSTRUCTION MORTALITY AT COMMERCIAL WIND PROJECTS IN MAINE

Site (Region) Bold=pre and post data	Megawatts (# Turbines)	Year	Data (sample size)	Reference
Hancock (Coastal Plain)	51 (17)	2012	• Raptor migration data (n = 10 days)	Stantec Consulting Services Inc. 2012. Results of Fall 2012 Raptor Surveys: Memo for the Hancock Wind Project. Prepared for First Wind, LLC.
		2017	• Mortality data (17 turbines, survey period = 180 days, interval = 3.5 days (twice weekly), Huso, Shoenfeld, and Smallwood estimators)	TRC. 2017. Hancock Wind Project Post-construction Bird and Bat Fatality Monitoring Report Year 1 (2017).
Highland (Western)	Proposed	2008	• Bat acoustic data from Tree (n = 146, Met High (n = 144 DN) and Met Low detectors (n = 142 DN) • Nocturnal radar data (n = 20 nights) • Raptor migration data (n = 15 days)	Stantec Consulting Services. 2009. Fall 2008 Bird and Bat Migration Survey Report: Radar and Acoustic Avian and Bat Surveys for the Highland Wind Project Highland Plantation, Maine. Prepared for Highland Wind LLC.
		2009	• Bat acoustic data from Met High (n = 300 DN) and Met Low detectors (n = 254 DN) • Nocturnal radar data (n = 40 nights) • Raptor migration data (n = 15 days)	Stantec Consulting Services. 2009. Spring 2009 Ecological Surveys for the Highland Wind Project Highland Plantation, Maine. Prepared for Highland Wind LLC.
Kibby (Western)	132 (44)	2005	• Nocturnal radar data (n = 24 nights)	Woodlot Alternatives, Inc. 2006. A Fall 2005 Survey of Bird and Bat Migration at the Proposed Kibby Wind Power Project in Kibby and Skinner Townships, Maine. Prepared for TransCanada Maine.
		2006	• Bat acoustic data from Met High (n = 145 DN) and Met Low detectors (n = 126 DN) • Nocturnal radar data (n = 25 nights	Woodlot Alternatives, Inc. 2006. Summer/Fall 2006 Survey of Bat Activity at the Proposed Kibby Wind Power Project in Kibby and Skinner Townships, Maine. Prepared for TransCanada Maine Wind Development Inc.
		2011	• Mortality data (22 turbines, survey period = 146 days, interval ~5 days, Shoenfeld estimator)	Stantec Consulting Services Inc. 2011. 2011 Post-Construction Monitoring Report Kibby Wind Power Project, Franklin County, Maine. Prepared for TransCanada Hydro Northeast, Inc.
		2014	• Mortality data (10 turbines, survey period = 122 days, interval = daily [5 days/week], Huso estimator)	TRC. 2015. Post-Construction Avian and Bat Mortality Survey Report for the Kibby Wind Power Project. Prepared for TransCanada Energy Ltd.
Mars Hill (Northern)	42 (28)	2005	• Nocturnal radar data (n = 18 nights) • Raptor migration data (n = 8 days)	Woodlot Alternatives, Inc. 2005. A Fall 2005 Radar, Visual, and Acoustic Survey of Bird and Bat Migration at the Proposed Mars Hill Wind Project in Mars Hill, Maine. Prepared for UPC Wind Management, LLC.
		2006	• Nocturnal radar data (n = 15 nights) • Raptor migration data (n = 7 days)	Woodlot Alternatives, Inc. 2006. A Spring 2006 Radar, Visual, and Acoustic Survey of Bird Migration at the Mars Hill Wind Farm in Mars Hill, Maine. Prepared for Evergreen Windpower, LLC.
		2007	• Mortality data (28 turbines, survey period = 113 days, interval = 2 daily/26 weekly, Jain estimator)	Stantec Consulting Services Inc. 2008. Spring, Summer, and Fall Post-construction Bird and Bat Mortality Study at the Mars Hill Wind Farm, Maine. Unpublished report prepared for UPC Wind Management, LLC.
		2008	• Mortality data (28 turbines, survey period = 135 days, interval = weekly, Jain estimator)	Stantec Consulting Services Inc. 2009. Post-construction Monitoring at the Mars Hill Wind Farm, Maine – Year 2. Unpublished report prepared for First Wind Management, LLC.

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Site (Region) Bold=pre and post data	Megawatts (# Turbines)	Year	Data (sample size)	Reference
Number Nine (Northern)	Proposed	2014	• Nocturnal radar data (n = 40 nights)	Stantec Consulting Services Inc. 2015. 2014 Nocturnal Radar Survey Report. Prepared for Number Nine Wind Farm LLC.
Oakfield (Northern)	148 (48)	2007	• Bat acoustic data from Tree (n = 228 DN) and Met High detectors (n = 37 DN)	Stantec Consulting Services Inc. 2008. Fall 2007 Bat Migration Survey Report. Prepared for UPC Wind Management, LLC.
		2008	• Bat acoustic data from Tree (n = 278 DN), Met High (n = 148 DN), and Met Low detectors (n = 141 DN) • Nocturnal radar data (n = 40 nights) • Raptor migration data (n = 23 days)	Stantec Consulting Services Inc. 2009. Spring and Summer 2008 Bird and Bat Migration Survey Report: Visual, Radar, and Acoustic Bat Surveys for the Oakfield Wind Project in Oakfield, Maine. Prepared for First Wind Management, LLC.
		2016	• Mortality data (29 turbines, survey period = 179 days, interval = 3 days, Huso, Shoenfield, Smallwood estimators)	Stantec Consulting Services Inc. 2016. Year 1 Post Construction Bird and Bat Fatality Monitoring Report.
		2017	• Mortality data (29 turbines, survey period = 179 days, interval = 2 days, Huso, Shoenfeld, Smallwood estimators)	TRC. 2017. Oakfield Wind Project Post-construction Bird and Bat Fatality Monitoring Report Year 2 (2017)
Passadumkeag (Central)	40 (13)	2011	• Bat acoustic data from Tree detectors (n = 691 DN) • Nocturnal radar data (n = 40 nights) • Raptor migration data (n = 24 days)	Stantec Consulting Services Inc. 2011. Summer and Fall 2011 Avian and Bat Survey Report for the Passadumkeag Wind Project in Grand Falls Township, Maine. Prepared for Passadumkeag Windpark LLC.
Record Hill (Western)	50.6 (22)	2007	• Bat acoustic data from Tree (n = 43 DN), Met High (n = 90 DN), and Met Low detectors (n = 107 DN) • Nocturnal radar data (n = 40 nights) • Raptor migration data (n = 14 days)	Stantec Consulting Services Inc. 2007. Fall 2007 Migration Report: Visual, Acoustic and Radar Surveys of Bird and Bat Migration Conducted at the Proposed Record Hill Wind Project in Roxbury, Maine. Prepared for Independence Wind, LLC.
		2008	• Bat acoustic data from Tree (n = 41 DN), Met High (n = 90 DN), and Met Low detectors (n = 84 DN) • Raptor migration data (n = 15 days)	Stantec Consulting Services Inc. 2008. Spring 2009 Bird and Bat Migration Survey Report: Breeding Bird, Raptor, and Acoustic Bat Surveys for the Record Hill Wind Project, Roxbury, Maine. Prepared for Record Hill Wind, LLC.
		2012	• Bat acoustic data from Tree detectors (n = 639 DN) • Raptor migration data (n = 23 days) • Mortality data (22 turbines, survey period = 155 days, interval ~ 5 days, Huso estimator)	Stantec Consulting Services Inc. 2012. Record Hill Wind Project Post-Construction Monitoring Report, 2012. Prepared for Record Hill Wind, LLC.
		2014	• Raptor migration data (n = 35 days) • Mortality data (10 turbines, survey period = 139 days, interval = daily [5 days/week], Huso estimator)	Stantec Consulting Services Inc. 2015. Record Hill Wind Project Year 2 Post-Construction Wildlife Monitoring Report. Prepared for Record Hill Wind, LLC.
		2016	• Mortality data (10 turbines, survey period = 158 days, interval = daily [5 days/week], Huso estimator & Smallwood estimator)	Stantec Consulting Services Inc. 2017. Final Post-Construction Monitoring Report, Year 3, Record Hill Wind Project. Prepared for Record Hill Wind LLC and Wagner Forest Management, Ltd.
Rollins (Central)	60 (40)	2007	• Bat acoustic data from Tree (n = 274 DN), Met High (n = 95 DN), and Met Low detectors (n = 106 DN) • Nocturnal radar data (n = 21 nights) • Raptor migration data (n = 12 days)	Stantec Consulting Services Inc. 2007. Fall 2007 Bird and Bat Migration Survey Report: Visual, Radar and Acoustic Bat Surveys for the Rollins Wind Project. Prepared for First Wind Management, LLC.
		2008	• Bat acoustic data from Tree (n = 50 DN), Met High (n = 128 DN), and Met Low detectors (n = 99 DN) • Nocturnal radar data (n = 21 nights) • Raptor migration data (n = 15 days)	Stantec Consulting Services Inc. 2008. Spring 2008 Bird and Bat Migration Survey Report: Visual, Radar and Acoustic Bat Surveys for the Rollins Wind Project. Prepared for First Wind Management, LLC.

COMPARISON OF PRE-CONSTRUCTION BIRD/BAT ACTIVITY AND POST-CONSTRUCTION MORTALITY AT COMMERCIAL WIND PROJECTS IN MAINE

Site (Region) Bold=pre and post data	Megawatts (# Turbines)	Year	Data (sample size)	Reference
		2012	• Raptor migration data (n = 38 days) • Mortality data (20 turbines, survey period = 184 days, interval = weekly, Huso estimator)	Stantec Consulting Services Inc. 2012. Rollins Wind Project Post-Construction Monitoring Report, 2012. Prepared for First Wind, LLC.
		2013	• Raptor migration data (n = 25 days)	Stantec Consulting Services Inc. 2014. Rollins Wind Project Year 2 Post-Construction Eagle Monitoring Report. Prepared for First Wind, LLC.
		2014	• Mortality data (20 turbines, survey period = 184 days, interval = weekly, Huso estimator)	Stantec Consulting Services Inc. 2015. Rollins Wind Project Year 2 Post-Construction Wildlife Monitoring Report, 2014. Prepared for First Wind, LLC.
Spruce Mountain (Western)	20 (10)	2009	• Raptor migration data (n = 21 days) • Nocturnal radar data (n = 93 nights) • Bat acoustic data from Met High (n = 157 DN), Met Low (n = 157 DN), and Tree detectors (n = 157 DN)	TetraTech. 2009. Spring 2009 – Bird and Bat Biological Survey Report. Prepared for Patriot Renewables.
		2012	• Mortality data (10 turbines, survey period = 205 days, interval = weekly, Huso estimator)	TetraTech. 2013. Spruce Mountain Wind Project Post-construction Bird and Bat Fatality and Raptor Monitoring Year 1 Annual Report. Prepared for Patriot Renewables.
		2014	• Mortality data (10 turbines, survey period = 199 days, interval =2x/week, Huso estimator)	TetraTech. 2015. Spruce Mountain Wind Project Post-construction Bird and Bat Fatality and Raptor Monitoring 2014. Prepared for Patriot Renewables.
Stetson I & II (Central)	82.5 (55)	2006	• Bat acoustic data from Met High (n = 149 DN) and Met Low detectors (n = 212 DN) • Nocturnal radar data (n = 12 nights) • Raptor migration data (n = 6 days)	Woodlot Alternatives, Inc. 2007. A Fall 2006 Survey of Bird and Bat Migration at the Proposed Stetson Mountain Wind Power Project in Washington County, Maine. Prepared for Evergreen Wind V, LLC.
		2007	• Bat acoustic data from Met High detectors (n = 160 DN) • Nocturnal radar data (n = 21 nights) • Raptor migration data (n = 8 days)	Woodlot Alternatives, Inc. 2007. A Spring 2007 Survey of Bird and Bat Migration at the Stetson Wind Project, Washington County, Maine. Prepared for Evergreen Wind V, LLC.
		2009	• Bat acoustic data from Tree detectors (n = 407 DN) • Nocturnal radar data (n = 18 DN) • Raptor migration data (n = 12 days) • Mortality data (19 Stetson I turbines, survey period = 185 days, interval = weekly, Huso estimator)	Stantec Consulting Services Inc. 2010. Stetson I Mountain Wind Project, Year 1 Post-Construction Monitoring Report, 2009. Prepared for First Wind Management, LLC.
		2010	• Mortality data (17 Stetson II turbines, survey period = 180 days, interval = weekly, Jain estimator)	Normandeau Associates. 2010. Stetson Mountain II Wind Project Year 1 Post-Construction Avian and Bat Mortality Monitoring. Prepared for First Wind, LLC.
		2011	• Mortality data (19 Stetson I turbines, survey period = 187 days, interval = weekly, Huso estimator)	Normandeau Associates. 2010. Year 3 Post-construction avian and bat casualty monitoring at the Stetson I Wind Farm. Prepared for First Wind, LLC.
		2012	• Mortality data (17 Stetson II turbines, survey period = 184 days, interval = weekly, Huso estimator)	Stantec Consulting Services Inc. 2012. Stetson II Wind Project Post-Construction Monitoring Report, 2012. Prepared for First Wind, LLC.

Site (Region) Bold=pre and post data	Megawatts (# Turbines)	Year	Data (sample size)	Reference
		2013	• Mortality data (19 Stetson I turbines, survey period = 194 days, interval = weekly, Huso estimator)	Stantec Consulting Services Inc. 2014. Stetson I Wind Project 2013 Post-Construction Wildlife Monitoring Report, Year 5. Prepared for First Wind, LLC.
		2014	• Mortality data (17 Stetson II turbines, survey period = 184 days, interval = weekly, Huso estimator)	Stantec Consulting Services Inc. 2015. Stetson II Wind Project Year 3 Post-Construction Monitoring Report, 2014. Prepared for First Wind, LLC.
Weaver (Coastal Plain)	Proposed	2013	• Bat acoustic data from Met High (n = 325 DN) and Met Low detectors (n = 341 DN) • Raptor migration data (n = 8 days)	Stantec Consulting Services Inc. 2014. 2014 Pre-Construction Avian and Bat Surveys – Weaver Wind Project. Prepared for First Wind, LLC.
		2014	• Nocturnal radar data (n = 40 nights) • Raptor migration data (n = 19 days)	Stantec Consulting Services Inc. 2014. 2014 Pre-Construction Avian and Bat Surveys – Weaver Wind Project. Prepared for First Wind, LLC.

Appendix B PRE-CONSTRUCTION BIRD AND BAT ACTIVITY METRICS

Appendix B Table 1. Pre-construction bird and bat activity metrics derived from publicly available pre-construction survey data from Maine wind projects.

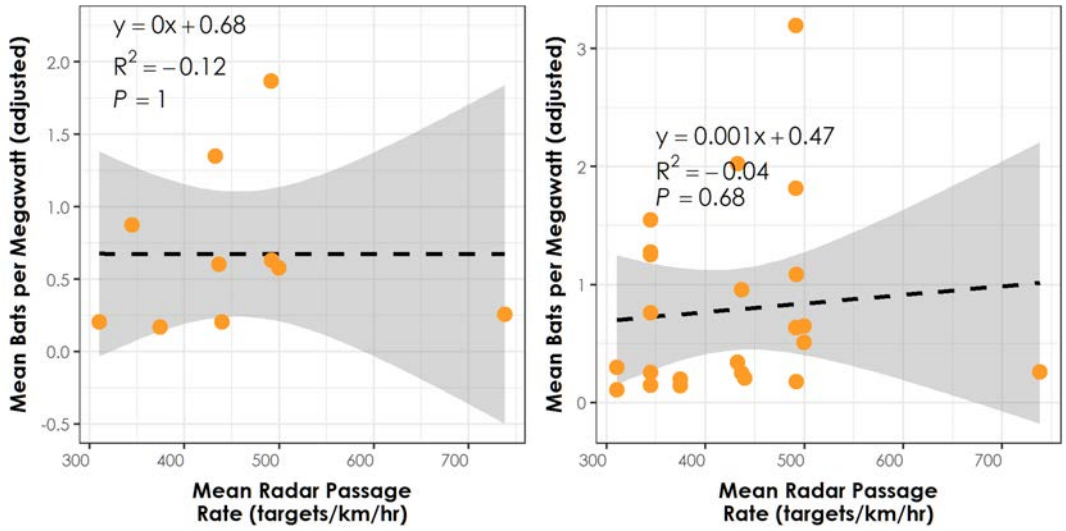
Site Name	Maine Region	Radar Passage Rate		Radar Passage Below Turbine Height		Acoustic Bat Activity						Raptor Passage Rate
						Met High		Met Low		Tree		
		Mean	SD	Mean	SD	Rate	SD	Rate	SD	Rate	SD	
Bingham	Western	738.3	488.6	0.24	0.14	0.32	0.62	0.54	0.75	4.31	7.76	9.2
Highland	Western	524.4	393.4	0.16	0.14	0.29	0.98	0.35	0.61	54.05	64.68	18.7
Kibby	Western	374.7	347.9	0.17	0.16	0.13	0.41	0.25	1.18	--		--
Record Hill	Western	491.4	301.0	0.17	0.12	0.27	0.74	2.01	6.48	28.02	41.53	7.1
Spruce Mountain	Western	436.4	421.7	0.19	0.09	0.20	--	0.94	--	2.04	--	
Bowers	Central	322.5	183.1	0.24	0.16	1.96	5.26	1.06	2.33	14.8		8.4
Passadumkeag	Central	439.6	450.9	0.30	0.19	--	--	--	--	27.37	51.73	9.9
Rollins	Central	310.5	225.4	0.17	0.10	1.04	4.07	1.33	5.42	68.45	176.37	7.4
Stetson	Central	344.7	316.5	0.20	0.22	1.68	4.09	3.60	5.47	45.77	91.57	7.7
Bull Hill	Coastal Plain	491.9	302.4	0.32	0.20	0.10	0.40	0.48	1.11	7.05	11.93	8.0
Weaver	Coastal Plain	746.2	440.5	0.33	0.17	0.49	1.00	0.48	1.29	--		9.7
Mars Hill	Northern	432.6	288.0	0.11	0.10	--	--	--	--	--	--	
Number Nine	Northern	323.7	240.6	0.27	0.10	--	--	--	--	--	--	
Oakfield	Northern	499.5	226.0	0.3	0.14	0.44	1.84	1.09	2.20	15.46	48.07	5.1

Appendix C POST-CONSTRUCTION BIRD AND BAT MORTALITY ESTIMATES

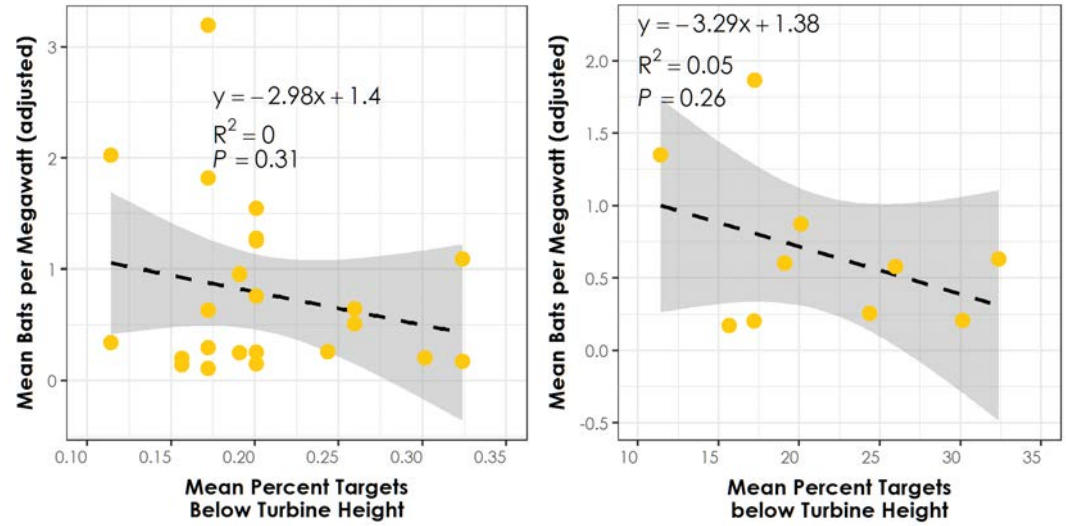
Appendix C Table 1. Post-construction bird and bat mortality estimates and project characteristics used to generate site-level mortality metrics for Maine wind projects.

Site	Region	Year	Curtailment	Survey Period Length (Days)	Search Interval	Searcher	Estimator	Turbine Specification (MW)	Estimated Bat Mortality per Turbine	Estimated Bird Mortality per Turbine
Bingham	Western	2017	6.0 m/s (April 20 – October 15)	184	3-day	human	Huso Shoenfeld Smallwood	3.3	0.74 (0.44 – 4.72) 0.32 (0.22 – 1.76) 1.73 (1.73 – 6.92)	11.43 (6.58 – 20.58) 5.98 (3.52 – 10.54) 25.09 (16.44 – 36.34)
Bull Hill	Coastal Plain	2013	5.0 m/s (June 15 – October 15 at 10 turbines; 9 control)	130	daily	human	Huso	1.8	2.5 (1.6 – 4.0)	12.1 (7.3 – 19.5)
				177	weekly	human	Huso		0.9 (0.7 – 1.4)	7.7 (4.8 – 13.2)
		2014	5.0 m/s (July 1 – Sept 30 at 19 turbines)	184	3-day	human	Huso		0.4 (0.1 – 1.1)	6.3 (4.3 – 10.4)
				184	weekly	human	Shoenfeld		0.3 (0.1 – 0.6)	5.1 (2.8 – 8.4)
Hancock	Coastal Plain	2017	6.0 m/s (April 20 – October 15)	180	3.5-day (2x/wk)	human	Huso Shoenfeld Smallwood	3.0	0.89 (0.26 – 2.01) 1.14 (0.31 – 2.75) 1.03 (0.34 – 2.07)	4.56 (2.06 – 9.69) 6.99 (2.93 – 16.04) 2.76 (1.38 – 4.14)
Kibby	Western	2011	None	146	5-day (3x/2wk)	human	Shoenfeld	3	0.4 (0.1 – 0.7)	1.6 (0.7 – 3.6)
		2014	None	122	daily (5 days/week)	human	Huso		0.5 (No CI)	4.7 (No CI)
Mars Hill	Northern	2007	None	113	weekly	human	Jain	1.5	0.4 (0.5 – 0.6)	0.4 (0.4 – 0.7)
				113	seasonal dog	dog	Jain		4.4 (1.8 – 4.5)	2.5 (2.7 – 8.4)
				113	daily	human	Jain		2.0 (1.1 – 1.4)	1.0 (-0.2 – 2.9)
		2008	None	135	weekly	human	Jain		0.7 (0.6 – 1.1)	2.0 (2.3 – 2.9)
				135	seasonal dog	dog	Jain		0.2 (0.2 – 0.2)	2.7 (2.1 – 4.7)
Oakfield	Northern	2016	5.0 m/s, temperature variable	179	3-day	human	Huso Shoenfeld Smallwood	3.0	1.77 (1.13 – 2.77) 2.11 (0.86 – 3.91) 2.31 (±0.01)	7.60 (5.33 – 10.75) 9.42 (5.87 – 14.23) 9.77 (±0.63)
		2017	5.0 m/s, temperature variable	179	2-day	human	Huso Shoenfeld Smallwood		1.54 (0.34 – 3.98) 1.00 (0.25 – 2.39) 2.32 (0.77 – 4.63)	12.7 (8.63 – 19.06) 10.13 (7.01 – 14.7) 27.4 (19.68 – 36.28)
Passadumkeag	Central	2016	5.0 m/s, seasonally variable temperature	183	3-day	human	Huso Shoenfeld Smallwood	3.3	0.79 (0.14 – 1.79) 0.56 (0.11 – 1.22) 0.87 (0.87 – 0.87)	6.32 (4.06 – 10.13) 4.28 (2.76 – 5.58) 8.15 (6.13 – 10.17)
Record Hill	Western	2012	None	155	5-day (3x/2wk)	human	Huso	2.3	6.8 (3.4 – 49.7)	8.5 (4.5 – 18.8)
		2014	None	139	daily (5 days/week)	human	Huso		1.2 (0.7 – 3.0)	4.2 (2.1 – 8.1)
		2016	None	158	daily (5 days/week)	human	Huso, Smallwood		3.10 (2.11 – 6.66) 4.74 (4.69 – 4.80)	6.51 (3.60 – 10.73) 8.93 (8.67 – 9.20)
Rollins	Central	2012	None	184	weekly	human	Huso	1.5	0.2 (0.1 – 0.5)	2.9 (1.6 – 6.0)
		2014	None	184	weekly	human	Huso		0.5 (0.3 – 1.0)	5.1 (3.2 – 8.3)
Spruce Mountain	Western	2012	None	205	weekly	human	Huso	2	2.4 (0.5 – 0.5)	1.5 (1.2 – 4.5)
		2014	None	199	2x per week	human	Huso		0.61 (0.19 – 1.18)	10.06 (5.39 – 15.77)
Stetson	Central	2009	None	185	weekly	human	Jain	1.5	2.1 (1.1 – 3.1)	4.0 (2.8 – 5.2)
		2011	None	187	Weekly	human	Jain		0.4 (0.4 – 0.5)	1.8 (1.5 – 2.0)
		2013	None	194	Weekly	human	Huso		0.3 (0.2 – 1.1)	10.4 (5.0 – 22.2)
		2010	None	180	Weekly	human	Jain		2.5 (2.2 – 2.8)	2.1 (1.9 – 2.4)
		2012	None	184	Weekly	human	Huso		2.1 (0.6 – 51.4)	2.8 (0.7 – 8.4)
		2014	None	184	Weekly	human	Huso		1.3 (0.5 – 5.9)	4.9 (2.0 – 14.7)

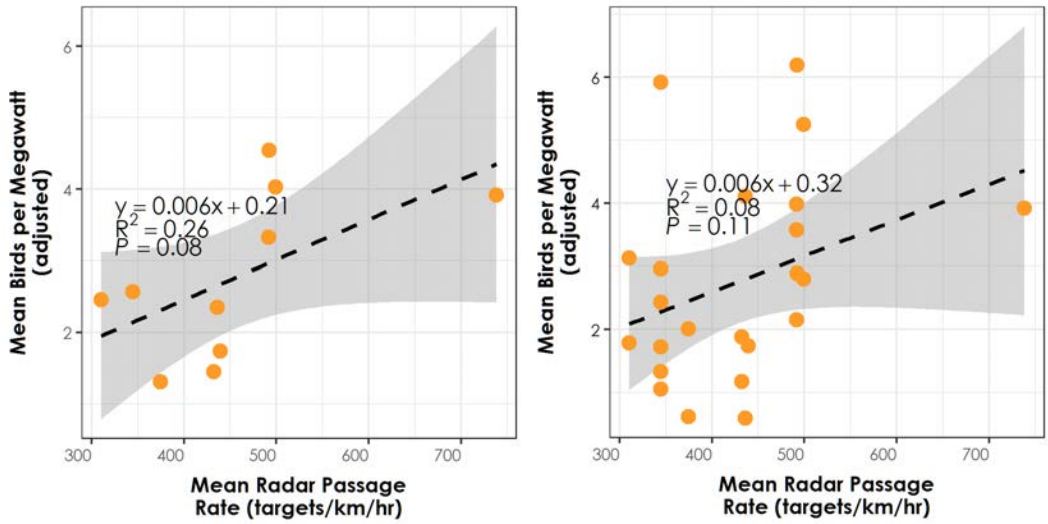
Appendix D LINEAR MODEL RESULTS



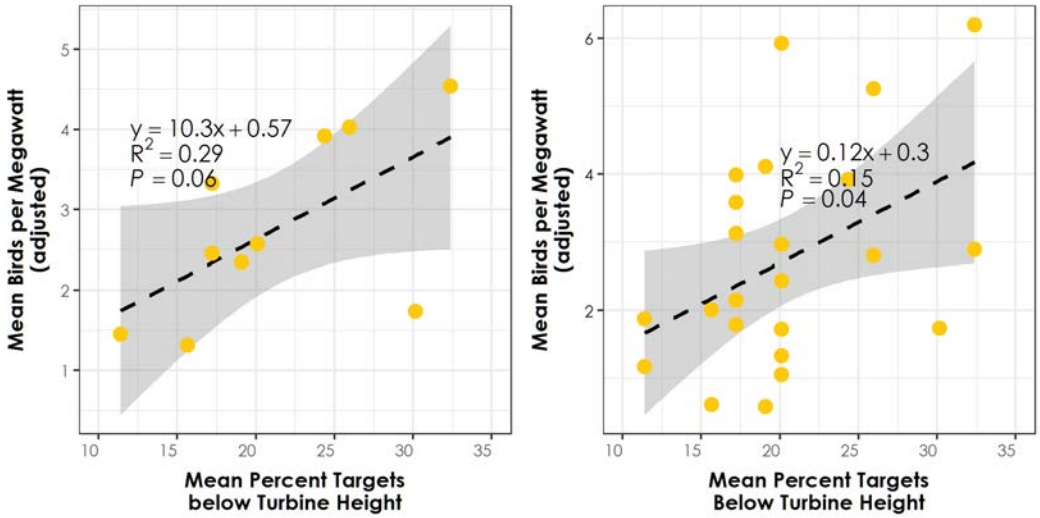
Appendix D Figure 1. Estimated bat mortality rates versus pre-construciton rardar passage rate based on site-level averages (left) and annual mortality estimates (right) for commercial wind projects in Maine. Shown are regressions including sites with curtailment.



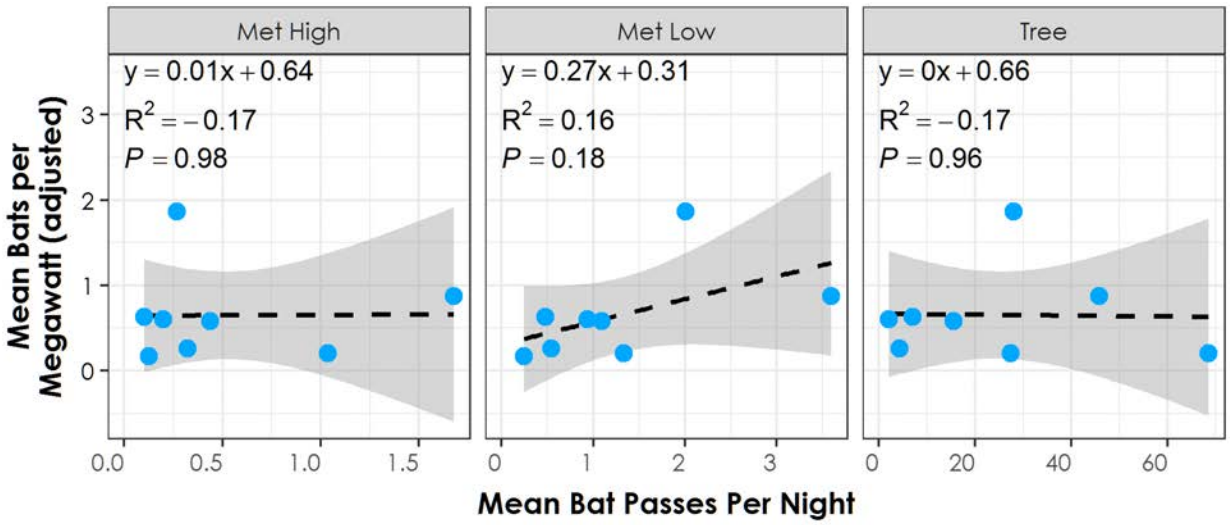
Appendix D Figure 2. Estimated bat mortality rates versus pre-construction percent radar targets below turbine height based on site-level averages (left) and annual mortality estimates (right) for commercial wind projects in Maine. Shown are regressions including sites with curtailment.



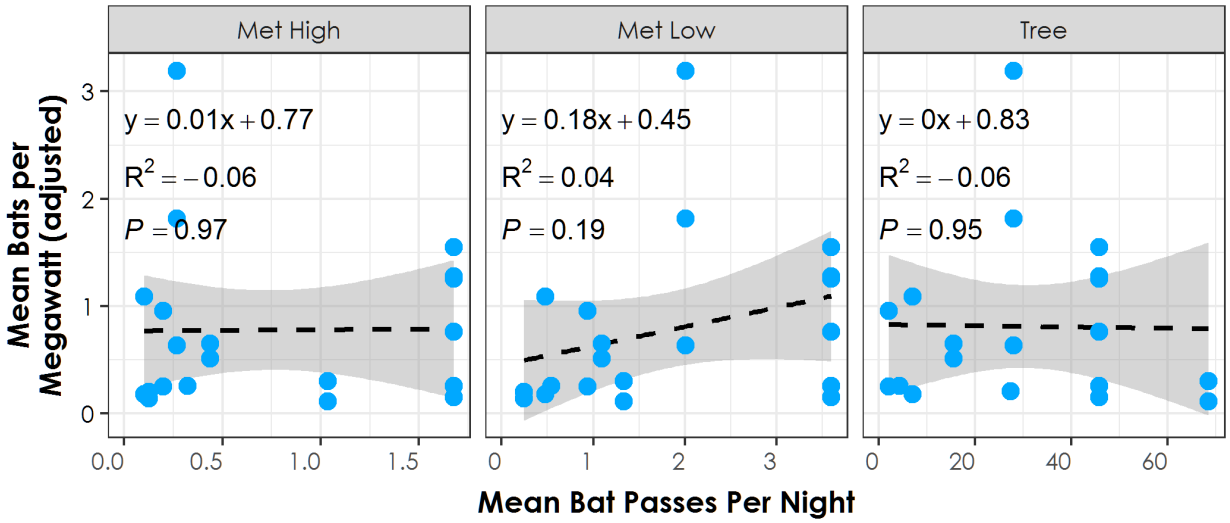
Appendix D Figure 3. Estimated bird mortality rates versus pre-construction radar passage rate based on site-level averages (left) and annual mortality estimates (right) for commercial wind projects in Maine.



Appendix D Figure 4. Estimated bird mortality rates versus pre-construction percent radar targets below turbine based on site-level averages (left) and annual mortality estimates (right) for commercial wind projects in Maine.



Appendix D Figure 5. Estimated bat mortality versus pre-construction bat activity levels based on site-level averages.



Appendix D Figure 6. Estimated bat mortality versus pre-construction bat activity levels on annual mortality estimates by detector type.

Appendix E BIRD AND BAT MORTALITY ESTIMATES FROM NORTHEAST STATES

Appendix E Table 1. Bird and bat mortality estimates from publicly available mortality survey reports for wind projects in New Hampshire, New York, Pennsylvania, and West Virginia used to compare statewide mortality rates.

Site	State	Turbine Size (MW)	Year	Estimated Bat Mortality per Turbine	Estimated Bird Mortality per Turbine	Survey Period Length (Days)	Search Interval	Estimator	Reference
Granite Reliable	NH	3.0	2012	3.0	2.8	189	weekly	Huso	Curry and Kerlinger. 2013. Post-construction mortality study Granite Reliable Power Wind Park, Coos County, New Hampshire, Annual Report January 2013. Prepared for Granite Reliable Power, LLC.
Groton	NH	2.0	2013	2.6	4.9	196	weekly	Shoenfeld	Stantec Consulting Services Inc. 2014. 2013 Post Construction Avian and Bat Survey Report. Prepared for Groton Wind, LLC.
			2014	3.3	3.0	190	weekly	Shoenfeld	Stantec Consulting Services Inc. 2015. 2014 Post Construction Avian and Bat Survey Report. Prepared for Groton Wind, LLC.
			2015	3.5	2.0	192	weekly	Shoenfeld	Stantec Consulting Services Inc. 2016. 2015 Post Construction Avian and Bat Survey Report. Prepared for Groton Wind, LLC.
Lempster	NH	2.0	2009	6.1	6.8	157	daily	Shoenfeld	Tidhar, D., W. Tidhar, and M. Sonnenberg. 2010. 2009 Post-Construction Fatality Surveys for Lempster Wind Project. Prepared for Lempster Wind, LLC.
			2010	7.1	5.3	157	weekly	Shoenfeld	Tidhar, D., W. Tidhar, L. McManus, and Z. Courage. 2011. 2010 Post-Construction Fatality Surveys for Lempster Wind Project. Prepared for Lempster Wind, LLC.
Altona	NY	1.5	2010	6.5	1.6	173	daily	Jain	Jain, A., Kerlinger, P., Slobodnik, L., Curry, R., Russel, K. 2011. Annual Report for the Noble Altona Windpark, LLC Post-Construction Bird and Bat Fatality Study - 2010. Prepared for Noble Environmental Power, LLC.
				3.9	2.8		weekly	Jain	
Bliss	NY	1.5	2008	7.6	4.3	208	daily	Jain	Jain, A., P. Kerlinger, R. Curry, L. Slobodnik, J. Quant, D. Pursell. 2009. Annual Report for the Noble Bliss Windpark, LLC. Postconstruction Bird and Bat Fatality Study – 2008. Prepared by Curry and Kerlinger, LLC.
				14.7	0.7		3-day	Jain	
				13.0	0.7		weekly	Jain	
			2009	8.2	4.5	215	daily	Jain	Jain, A., Kerlinger, P., Slobodnik, L., Curry, R., Russel, K. 2010. Annual Report for the Noble Bliss Windpark, LLC Post-Construction Bird and Bat Fatality Study - 2009. Prepared for Noble Environmental Power, LLC.
				4.5	2.9		weekly	Jain	
Chateaugay	NY	1.5	2010	3.7	2.4	173	weekly	Jain	Jain, A., Kerlinger, P., Slobodnik, L., Curry, R., Russel, K. 2011. Annual Report for the Noble Chateaugay Windpark, LLC Post-Construction Bird and Bat Fatality Study - 2010. Prepared for Noble Environmental Power, LLC.
Clinton	NY	1.5	2008	5.5	1.4	171	daily	Jain	Jain, A., P. Kerlinger, R. Curry, L. Slobodnik, J. Histed, and J. Meacham. 2009. Annual Report for the Noble Clinton Windpark, LLC. Postconstruction Bird and Bat Fatality Study – 2008. Prepared by Curry and Kerlinger, LLC.
				4.8	3.3		3-day	Jain	
				3.8	2.5		weekly	Jain	
			2009	9.7	1.5	215	daily	Jain	Jain, A., Kerlinger, P., Slobodnik, L., Curry, R., Russel, K. 2010. Annual Report for the Noble Clinton Windpark, LLC Post-Construction Bird and Bat Fatality Study - 2009. Prepared for Noble Environmental Power, LLC.
				5.2	1.8		weekly	Jain	
Cohocton/ Dutch Hill	NY	2.5	2009	40.4	4.7	215	daily	Jain	Stantec Consulting Services Inc. 2010. Cohocton and Dutch Hill Wind FarmsYear 1 Post-Construction Monitoring Report, 2009 for the Cohocton and Dutch Hill Wind Farms In Cohocton, New York. Prepared for Canandaigua Power Partners, LLC and Canandaigua Power Partners II, LLC.
				13.8	2.9		weekly	Jain	
			2010	15.5	2.0	180	weekly	Jain	Stantec Consulting Services Inc. 2011. Cohocton and Dutch Hill Wind Farms Year 2 Post-Construction Monitoring Report, 2010 for the Cohocton and Dutch Hill Wind Farms In Cohocton, New York. Prepared for Canandaigua Power Partners, LLC and Canandaigua Power Partners II, LLC.
				36.1	3.2	180	daily & weekly	Jain	
			2013	8.0	4.0	100	5-day	Jain	Stantec Consulting Services Inc. 2014. Cohocton and Dutch Hill Wind Farms 2013 Post-ConstructionWildlife Monitoring Report. Prepared for Canandaigua Power Partners, LLC and Canandaigua Power Partners II, LLC.
Ellenburg	NY	1.5	2008	8.2	2.1	169	daily	Jain	
				6.9	1.4		3-day	Jain	

COMPARISON OF PRE-CONSTRUCTION BIRD/BAT ACTIVITY AND POST-CONSTRUCTION MORTALITY AT COMMERCIAL WIND PROJECTS IN MAINE

Site	State	Turbine Size (MW)	Year	Estimated Bat Mortality per Turbine	Estimated Bird Mortality per Turbine	Survey Period Length (Days)	Search Interval	Estimator	Reference
				4.2	1.2		weekly	Jain	Jain, A., P. Kerlinger, R. Curry, L. Slobodnik, A. Fuerst, and C. Hansen. 2009. Annual Report for the Noble Ellenburg Windpark, LLC. Postconstruction Bird and Bat Fatality Study – 2008. Prepared by Curry and Kerlinger, LLC.
			2009	8.0	5.7	215	daily	Jain	Jain, A., Kerlinger, P., Slobodnik, L., Curry, R., Russel, K. 2010. Annual Report for the Noble Ellenburg Windpark, LLC Post-Construction Bird and Bat Fatality Study - 2009. Prepared for Noble Environmental Power, LLC.
				3.7	2.3		weekly	Jain	
Hardscrabble	NY	2.0	2012	21.3	6.9	184	daily	Shoenfeld	Jain, A., Kerlinger, P., Slobodnik, L., Curry, R., Russel, K. 2010. Annual Report for the Noble Ellenburg Windpark, LLC Post-Construction Bird and Bat Fatality Study - 2009. Prepared for Noble Environmental Power, LLC.
Howard	NY	2.1	2012	20.1	2.5	215	daily & weekly	Shoenfeld	West. 2013. 2012 Post-Construction Monitoring Studies for the Howard Wind Projgect Steuben County, New York. Prepared for Howard Wind, LLC.
			2013	4.3	0.8	185	daily & weekly	Shoenfeld	West. 2014. 2013 Post-Construction Monitoring Studies for the Howard Wind Projgect Steuben County, New York. Prepared for Howard Wind, LLC.
Maple Ridge	NY	1.7	2006	24.5	9.6	152	daily	Jain	Jain, A., P. Kerlinger, R. Curry, and L. Slobodnik. 2007. Annual report for the Maple Ridge wind power project post-construction bird and bat fatality study—2006. Annual report prepared for PPM Energy and Horizon Energy. Curry and Kerlinger, Cape May Point, New Jersey, USA.
				22.3	4.5	140	3-day	Jain	
				15.2	3.1	128	weekly	Jain	
			2007	10.7	3.9	199	weekly	Jain	Jain, A. P. Kerlinger, R. Curry, and L. Slobodnik. 2008. Annual report for the Maple Ridge wind power project post-construction bird and bat fatality study—2007. Annual report prepared for PPM Energy and Horizon Energy. Curry and Kerlinger, Cape May Point, New Jersey, USA.
			2008	8.2	3.4	209	weekly	Jain	Jain, A. P. Kerlinger, R. Curry, and L. Slobodnik. 2009. Annual report for the Maple Ridge wind power project post-construction bird and bat fatality study—2008. Annual report prepared for PPM Energy and Horizon Energy. Curry and Kerlinger, Cape May Point, New Jersey, USA.
			2012	12.1	NA	96	weekly	Shoenfeld	Tidhar, D., J. Ritzert, M. Sonnenberg, M. Lout, and K. Bay. 2013. 2012 Post-construction Fatality Monitoring Study for the Maple Ridge Wind Farm, Lewis County, New York. Final Report: July 12 – October 15, 2012. Prepared for EDP Renewables North America by Western EcoSystems Technology, Inc. NE/Mid-Atlantic Branch, Waterbury, Vermont.
Munnsville	NY	1.5	2008	0.7	2.2	215	weekly	Jain	Stantec Consulting Services Inc. 2009. Post-construction monitoring at the Munnsville Wind Farm, New York, 2008. Prepared for E.ON Climate and Renewables.
Steel Winds	NY	2.5	2012	6.3	4.3	161	weekly	Jain w/o area	Stantec Consulting Services Inc. 2013. Steel Winds I and II Post-Construction Monitoring Report, 2012. Prepared for First Wind Management, LLC
				6.9	8.5			Jain w/ area	
				5.8	4.0			Huso w/o area	
				6.4	7.2			Huso w/ area	
			2013	15.3	15.5	150	3-day	Huso w/ area correction	Stantec Consulting Services Inc. 2014. Steel Winds I and II Post-Construction Monitoring Report, 2013. Prepared for First Wind Management, LLC
Wethersfield	NY	1.5	2010	24.5	2.6	184	weekly	Jain	Jain, A., Kerlinger, P., Slobodnik, L., Curry, R., Russel, K., Harte, A. 2011. Annual Report for the Noble Wethersfield Windpark, LLC Post-Construction Bird and Bat Fatality Study - 2010. Prepared for Noble Environmental Power, LLC.
Site 2-10	PA	unknown	2008	16.0	1.0	unknown	unknown	unknown	Taucher, J., T. Librandi-Mumma, and W. Capouillez. 2012. Pennsylvania Game Commission Wind Energy Voluntary Cooperation Agreement Third Summary Report.
			2010	5.0	2.0	229	daily	Shoenfeld	
Site 2-14	PA	unknown	2008	7.0	7.0	229	daily	Shoenfeld	
			2009	7.0	5.0	229	daily	Shoenfeld	
Site 2-19	PA	unknown	2010	31.0	3.0	229	daily	Shoenfeld	
			2011	8.0	5.0	229	daily	Shoenfeld	
Site 2-2	PA	unknown	2008	19.0	2.0	229	daily	Shoenfeld	
			2009	13.0	4.0	229	daily	Shoenfeld	
Site 2-4	PA	unknown	2009	29.0	10.0	229	daily	Shoenfeld	
			2010	32.0	3.0	229	daily	Shoenfeld	

COMPARISON OF PRE-CONSTRUCTION BIRD/BAT ACTIVITY AND POST-CONSTRUCTION MORTALITY AT COMMERCIAL WIND PROJECTS IN MAINE

Site	State	Turbine Size (MW)	Year	Estimated Bat Mortality per Turbine	Estimated Bird Mortality per Turbine	Survey Period Length (Days)	Search Interval	Estimator	Reference
Site 24-1	PA	unknown	2010	59.0	4.0	229	daily	Shoenfeld	
			2011	30.0	7.0	229	daily	Shoenfeld	
Site 24-3	PA	unknown	2009	12.0	3.0	unknown	unknown	unknown	
			2010	38.0	3.0	229	daily	Shoenfeld	
			2011	19.0	3.0	229	daily	Shoenfeld	
Site 35-1	PA	unknown	2010	22.0	2.0	229	daily	Shoenfeld	
			2011	11.0	3.0	229	daily	Shoenfeld	
Site 5-5	PA	unknown	2009	13.0	1.0	unknown	unknown	unknown	
			2010	11.0	1.0	229	daily	Shoenfeld	
Site 6-1	PA	unknown	2009	28.0	2.0	229	daily	Shoenfeld	
			2010	29.0	2.0	229	daily	Shoenfeld	
Site 6-16	PA	unknown	2011	32.0	5.0	229	daily	Shoenfeld	
Site 6-3	PA	unknown	2007	30.0	2.0	229	daily	Shoenfeld	
			2008	27.0	2.0	229	daily	Shoenfeld	
Laurel Mountain	WV	1.6	2012	23.4	9.0	200	3-day	Shoenfeld	Stantec Consulting Services Inc. 2013. Fall 2011 and Spring/Summer 2012 Post-construction Monitoring Data Report for the Laurel Mountain Wind Energy Project in Randolph and Barbour Counties, West Virginia. Prepared for AES Laurel Mountain Wind, LLC.
Mount Storm	WV	2.0	2008	24.2	3.8	92	daily	Erickson et al. 2003	Young, D.P., W.P. Erickson, K. Bay, S. Normani, W. Tidhar. 2009. Mount Storm Wind Energy Facility, Phase 1: Post-construction Avian and Bat Monitoring. Prepared for: NedPower Mount Storm, LLC.
				7.8	2.4		weekly		
			2009	21.4	7.6	169	weekly		Young, D. P., K. Bay, S. Nomani, and W. L. Tidhar. 2010. NedPower Mount Storm Wind Energy Facility, post-construction avian and bat monitoring, July - October 2009. Western EcoSystems Technology, Inc., Cheyenne, Wyoming, USA.
				28.6	8.7		daily		
			2010	22.4	2.8	93	daily		Young, D.P., S. Nomani, W. Tidhar, and K. Bay. 2010. Mount Storm Wind Energy Facility Post-construction Avian and Bat Monitoring, July-October 2010. Prepared for NedPower Mount Storm, LLC.
Mountaineer	WV	1.5	2003	47.5	4.0	222	2x per week	Shoenfeld	Kerns, J., and P. Kerlinger. 2004. A study of bird and bat collision fatalities at the Mountaineer Wind Energy Center, Tucker County, West Virginia, USA: annual report for 2003
Pinnacle	WV	2.4	2012	96.5	9.6	275	weekly	Huso & Dalthorp	Hein, C.D., A. Prichard, T. Mabee, M.R. Shirmacher. 2013. Avian and Bat Post-construction Monitoring at the Pinnacle Wind Farm, Mineral County, West Virginia, 2012. Prepared for Edison Mission Energy.