

## Weaver Wind Project

MDEP Site Location of Development/NRPA Combined Application

### SECTION 9: UNUSUAL NATURAL AREAS

## 9.0 UNUSUAL NATURAL AREAS

### 9.1 INTRODUCTION

The project area was evaluated for the presence of unusual natural areas. According to the Preservation of Unusual Natural Areas standard of the No Adverse Environmental Effect Standard of the Site Law (06-096 CMR 375.12), an unusual natural area is defined as “any land or water area, usually only a few acres in size, which is undeveloped and which contains natural features of unusual geologic, botanical, zoological, ecological, hydrological, other scientific, educational, scenic, or recreational significance”. State and federal agencies were contacted to identify information regarding documented occurrences or the potential presence of sensitive natural resources within the project area. In addition, Stantec Consulting Services, Inc. (Stantec) conducted a series of environmental field surveys in 2014 to evaluate the presence of unusual natural areas within the project area.

### 9.2 AGENCY CONSULTATION

The Maine Natural Areas Program (MNAP), the Maine Department of Inland Fisheries and Wildlife (MDIFW), and the United States Fish and Wildlife Service (USFWS) were contacted to request information regarding Significant Wildlife Habitat and known botanical features, including rare and exemplary natural communities, that have been documented in the vicinity of the project. The Maine Department of Marine Resources (MDMR) was also consulted to determine the presence of potential habitat for Atlantic salmon (*Salmo salar*) in the project vicinity. Responses are provided in Exhibit 9-1. Since the 2014 MDIFW response, the Applicant has been in regular communication with MDIFW to evaluate potential impacts to wildlife and habitat and develop a project specific mitigation plan (see Section 7).

According to the MNAP Biological and Conservation Data System, there are no rare botanical features documented within the Weaver Wind project area.

The MDIFW reviewed the project area and determined that no mapped Essential Habitats will be directly affected by the project. The MDIFW also provided guidance<sup>1</sup> on the following: several bat species and the Maine Turbine Curtailment Recommendations; great blue herons (*Ardea herodias*) and documented colonies; bald eagles (*Haliaeetus leucocephalus*) and raptors; Inland Waterfowl and Wading Bird Habitat; Significant Vernal Pools; and streams, including recommended buffer widths and new and modified stream crossings. Correspondence with MDIFW in 2014 also provided an associated map to assist with further evaluation. Further discussion of these issues and consultation with MDIFW is found in Section 7 of this application, *Wetlands, Wildlife and Fisheries*.

The USFWS Information, Planning, and Conservation (IPaC) online review process was performed for the project, and an Official Species List was generated, identifying Northern long eared bat (*Myotis septentrionalis*) and Atlantic salmon (*Salmo salar*), and associated Critical Habitat, within the project area.

---

<sup>1</sup> Maine Department of Inland Fisheries and Wildlife, *Maine Wind Power Preconstruction Recommendations and Turbine Curtailment Recommendations to Avoid/Minimize Bat Mortality* (March 2, 2018)

## **Weaver Wind Project**

MDEP Site Location of Development/NRPA Combined Application

### **SECTION 9: UNUSUAL NATURAL AREAS**

MDMR was contacted for information regarding Atlantic salmon. The project is located in the East Branch and Middle Branch of the Union River Watershed, a watershed containing Atlantic salmon and salmon habitat. MDMR has not surveyed the East or Middle Branches for salmon habitat. However, the agency also indicated that it is unlikely that Atlantic salmon would be present in tributaries of these two systems.

### **9.3 FIELD SURVEYS**

The wetland delineation efforts for the project included a field evaluation of hydrologic, soil, and vegetative conditions for the entire project area in 2014. A rare, threatened, and endangered plant field survey and a rare and exemplary natural community survey were completed in August of 2014 (Exhibit 9-2). No rare plants or rare or exemplary natural communities were located within the project area, and no unusual natural areas were documented during the survey. The project is not expected to have an adverse impact on sensitive botanical resources or unusual natural resources, as none were located within the project area.

**Weaver Wind Project**

MDEP Site Location of Development/NRPA Combined Application

**SECTION 9: UNUSUAL NATURAL AREAS**

**Exhibit 9-1**

Agency Contact







**PAUL R. LEPAGE**  
GOVERNOR

**STATE OF MAINE**  
**DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY**

93 STATE HOUSE STATION  
AUGUSTA, MAINE 04333

**WALTER E. WHITCOMB**  
COMMISSIONER

August 16, 2018

Brooke Barnes  
Stantec Consulting Services  
30 Park Drive  
Topsham, ME 04086

Via email: [brooke.barnes@stantec.com](mailto:brooke.barnes@stantec.com)

Re: Rare and exemplary botanical features in proximity to: #195601223, Weaver Wind Project, Aurora, Osborn, Eastbrook, T22 MD BPP, and T16 MD BPP, Maine

Dear Mr. Barnes:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received August 15, 2018 for information on the presence of rare or unique botanical features documented from the vicinity of the Weaver Wind Project in the Osborn-Eastbrook area of Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

As was the case in 2014, the only mapped botanical feature within four miles of the Weaver Wind Project is a Streamshore Ecosystem at Union River-The Whaleback, just north of the project. This is an excellent example of a fairly common ecosystem type. Because the bulk of the Streamshore Ecosystem is mapped north of Route 9, and over 500 feet from any aspect of this project, there are no issues or concerns regarding the Weaver Wind Project and this mapped ecosystem.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

**MOLLY DOCHERTY, DIRECTOR**  
MAINE NATURAL AREAS PROGRAM



PHONE: (207) 287-8044  
FAX: (207) 287-8040  
WWW.MAINE.GOV/DACF/MNAP

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a fee structure of \$75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for \$150.00 for two hours of our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kristen Puryear".

Kristen Puryear | Ecologist | Maine Natural Areas Program  
207-287-8043 | [kristen.puryear@maine.gov](mailto:kristen.puryear@maine.gov)



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Maine Ecological Services Field Office

P. O. Box A

East Orland, ME 04431

Phone: (207) 469-7300 Fax: (207) 902-1588

<http://www.fws.gov/mainefieldoffice/index.html>

In Reply Refer To:

August 13, 2018

Consultation Code: 05E1ME00-2018-SLI-0980

Event Code: 05E1ME00-2018-E-02033

Project Name: Weaver Wind Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: [http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html) Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: <http://www.fws.gov/mainefieldoffice/Project%20review4.html>

Additionally, wind energy projects should follow the wind energy guidelines: <http://www.fws.gov/windenergy/> for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g.,

---

cellular, digital television, radio, and emergency broadcast) can be found at:  
<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm> and at:  
<http://www.towerkill.com>; and at:  
<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Maine Ecological Services Field Office**

P. O. Box A

East Orland, ME 04431

(207) 469-7300

---

## Project Summary

Consultation Code: 05E1ME00-2018-SLI-0980

Event Code: 05E1ME00-2018-E-02033

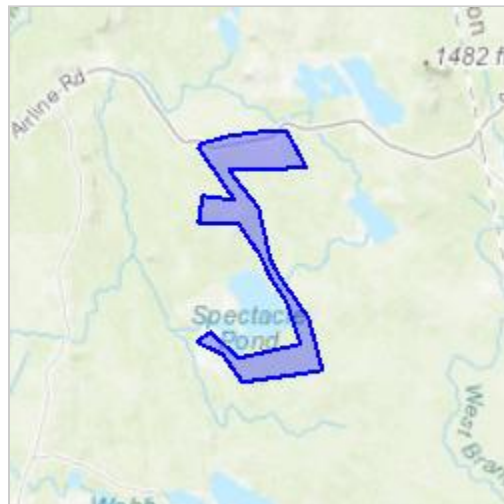
Project Name: Weaver Wind Project

Project Type: POWER GENERATION

Project Description: 22 turbine wind project

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/44.78229705585946N68.2054466129332W>



Counties: Hancock, ME

---

## Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

### Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

### Fishes

NAME	STATUS
Atlantic Salmon <i>Salmo salar</i> Population: Gulf of Maine DPS There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2097">https://ecos.fws.gov/ecp/species/2097</a>	Endangered

### Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Atlantic Salmon <i>Salmo salar</i> <a href="https://ecos.fws.gov/ecp/species/2097#crithab">https://ecos.fws.gov/ecp/species/2097#crithab</a>	Final

---





PAUL R. LEPAGE  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF  
INLAND FISHERIES & WILDLIFE  
284 STATE STREET  
41 STATE HOUSE STATION  
AUGUSTA ME 04333-0041

CHANDLER E. WOODCOCK  
COMMISSIONER

October 1, 2014

Kara Moody  
Normandeau Associates, Inc.  
8 Fundy Road  
Falmouth, ME 04105

**RE: Information Request - Weaver Wind Power, Aurora/Eastbrook/Osborn/T16 MD/T22 MD**

Dear Kara:

Per your request received September 10, 2014, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat concerns within the vicinity of the *Weaver Wind Power Project* in Aurora/Eastbrook/Osborn/T16 MD/T22 MD.

Our Department has not mapped any Essential Habitats that would be directly affected by your project.

***Endangered, Threatened, and Special Concern Species***

Bats

Seven out of eight species of bats in Maine are currently listed as Species of Special Concern by MDIFW: eastern small-footed bat (*Myotis leibii*), little brown bat (*Myotis lucifugus*), northern long-eared bat (*Myotis septentrionalis*), red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and tri-colored bat (*Perimyotis subflavus*). However, the three species of *Myotis* are currently the subject of the rulemaking process for protection under Maine's list of Threatened and Endangered species. While a comprehensive statewide inventory for bats has not been completed, it is likely that all or most of these species occur within the project area during migration and/or the breeding season. At this time we have not developed guidelines to avoid or minimize impacts to habitat for these species, particularly from forestry clearing operations associated with the construction of the project; therefore, we will defer to guidance and recommendations provided from the U.S. Fish and Wildlife Service (USFWS), as the northern long-eared bat is being proposed for listing as an Endangered Species under the Federal Endangered Species Act.

You are aware, however, that MDIFW continues to recommend curtailment at wind power projects for the protection of our rare bats species. Our current policy, stated below, is subject to change pending new scientific research or pending the listing of our *Myotis* species.

### Maine Turbine Curtailment Requirements to Decrease Bat Mortality Policy (January 2014)

Wind turbines will operate only at cut-in wind speeds exceeding 6.0 meters per second each night (from at least ½ hour before sunset to at least ½ hour after sunrise) during the period April 20 – October 15. Cut-in speeds are determined based on mean wind speeds measured at hub heights of a turbine over a 10-minute interval. Turbines will be feathered during these low wind periods to minimize risks of bat mortality. These cut-in speeds are independent of ambient air temperature.

Please include both MDIFW Endangered Species Coordinator Charlie Todd (207-941-4468) and Regional Wildlife Biologist Tom Schaeffer (207-434-5927) in all correspondence that is related to bats.

### Tomah Mayfly

The Tomah mayfly, a State -Threatened species, has been documented in the vicinity of the proposed project. The Tomah mayfly inhabits small rivers and streams bordered by extensive areas of seasonally flooded sedge meadow. The greatest conservation concern for the Tomah mayfly is protecting its wetland habitat from alteration or degradation resulting from activities such as alteration of flow and deterioration of water quality. Please contact Species Specialist Beth Swartz (207- 941-4476) for further guidance including the need for surveys as well as for recommendations to avoid and minimize impacts to this species of concern.

### Great Blue Heron

The great blue heron is a State Species of Special Concern due to a 64% decline in the coastal breeding population observed from 1983 to 2009. Since 2009, MDIFW has been monitoring the statewide population to determine if the decline seen along the coast is also occurring statewide. Great blue herons build large stick nests in live, dead, or dying trees 8-100 feet or more above the ground, and may nest in uplands, wetlands, or on islands. At least one heron colony has been documented in the vicinity of the project, and it is our understanding that one or two other new colonies have been documented during recent aerial surveys. We recommend that you contact Wildlife Biologist Danielle D'Auria (207-941-4478) for recommendations to avoid and minimize impacts to this species of concern, and that the coordinates for the new colonies be sent to her so that our database can be updated.

### Bald Eagle/Raptors

Both eagles and raptors have the potential to be impacted by wind power projects. Bald eagles are federally protected by the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, and the Lacey Act under the U.S. Fish and Wildlife Service (USFWS). The USFWS has management authority over eagles; therefore, the applicant should contact the USFWS Maine Office at 207-866-3344 to consult on siting requirements such as potential baseline eagle studies. However, MDIFW staff works closely with the USFWS on the protection of this species as it is listed as a Species of Special Concern in Maine, as well as for the protection of raptors in general. We recommend that you contact MDIFW

raptor specialist Erynn Call (207-941-4481) for further guidance to avoid and minimize potential impacts to raptors.

### ***Significant Wildlife Habitat***

#### **Inland Waterfowl and Wading Bird Habitats**

This project intersects or appears to be immediately adjacent to several Inland Waterfowl and Wading Bird Habitats (IWWHs), which are Significant Wildlife Habitats under Maine's Natural Resources Protection Act. These habitats provide important breeding, feeding, migration, staging, and wintering habitat for waterfowl and wading bird species. High and moderate value IWWHs within the study area includes both the wetland complex and a 250-foot upland zone. We recommend that these resources be avoided, including no clearing within the 250-foot undisturbed buffer from the wetland edge. Please contact Regional Wildlife Biologist Tom Schaeffer (207-434-5927) for recommendations to avoid and minimize impacts to these resources.

#### **Significant Vernal Pools**

At this time, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Surveys of the vernal pools in the project boundary will need to be conducted prior to final project design to determine whether there are Significant Vernal Pools present. Once surveys are completed, our Department will need to verify vernal pool data sheets prior to final determination of significance. Please contact Species Specialist Beth Swartz (207- 941-4476) for further guidance and recommendations to avoid and minimize impacts to these resources of concern.

### ***Fisheries Habitat Concerns***

MDIFW makes the following general recommendations as they pertain to streams:

We recommend that a 100-foot undisturbed vegetated buffer be maintained along streams. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining buffers along coldwater fisheries is critical to the protection of water temperatures, water quality, and inputs of coarse woody debris necessary to support conditions required by brook trout. It is our understanding that new or modified stream crossings are being avoided; however, should any new or modified crossings be necessary they should be designed to provide adequate fish passage. Generally, MDIFW recommends that all new and replacement stream crossings be sized to span 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e. natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in not only providing habitat connectivity for fish but also for other aquatic organisms. We encourage you to contact our Regional Fisheries Biologist Joe Overlock (207-434-5925) for crossing design recommendations that best maintain fish passage. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts to stream habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

Letter to Kara Moody  
Comments RE: Weaver Wind Power  
September 10, 2014

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

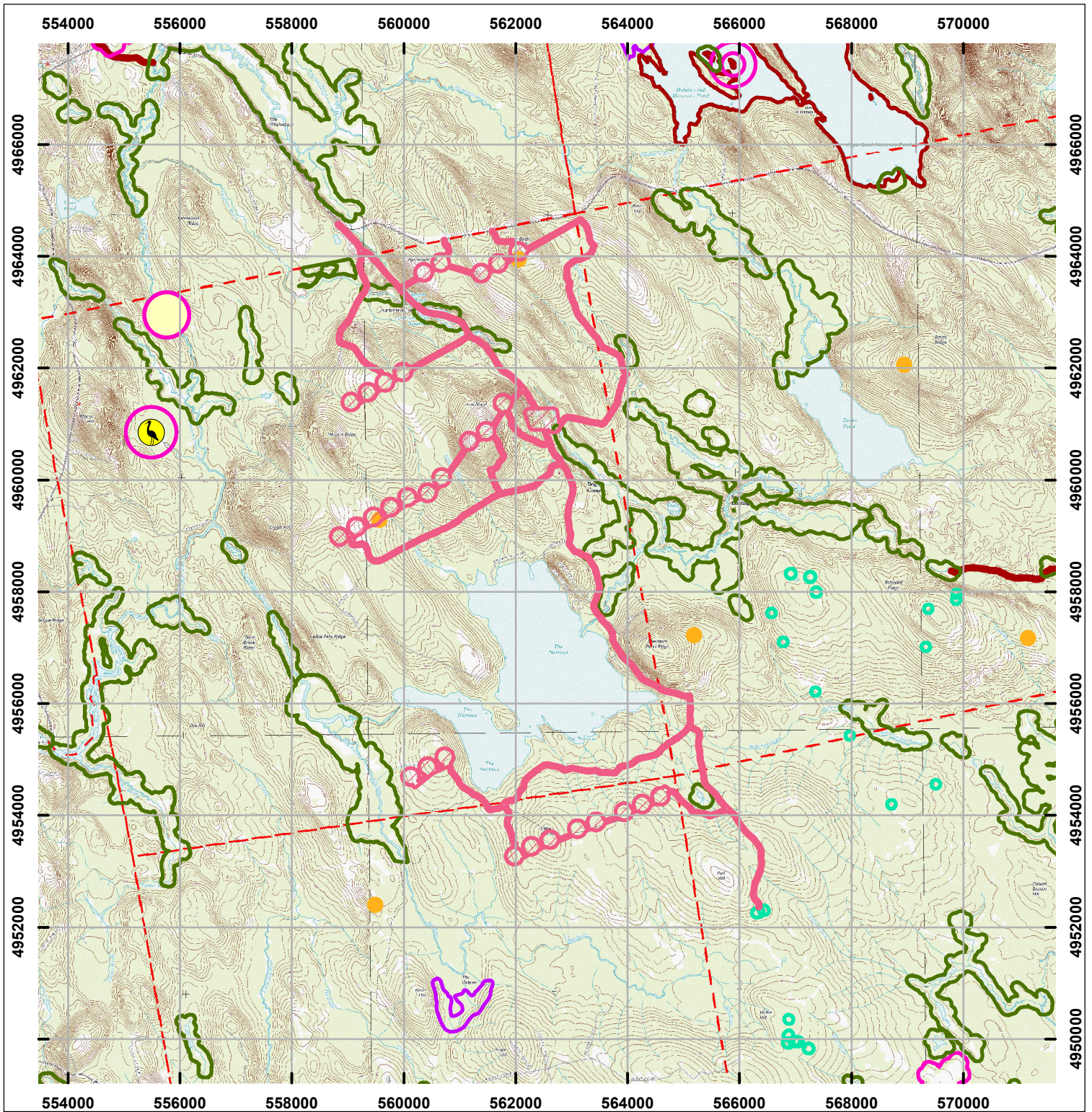
Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

A handwritten signature in blue ink, appearing to read 'John Perry', with a stylized flourish at the end.

John Perry  
Environmental Review Coordinator





## Environmental Review of Fish and Wildlife Observations and Priority Habitats

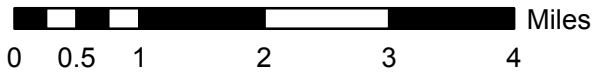
Project Name:

Weaver Wind Power

(Version 1)



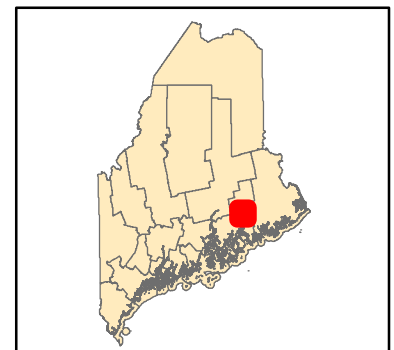
Maine Department of  
Inland Fisheries and Wildlife



Projection: UTM, NAD83, Zone 19N

Date: 9/12/2014

- |                    |                               |  |
|--------------------|-------------------------------|--|
| ProjectPoints      | Deer Winter Area              | Roseate Tern   |
| ProjectLines       | LURC p-fw                     | Piping Plover/Least Tern                                 |
| ProjectPolys       | Cooperative DWAs              | Aquatic ETSc (2.5 mi review)                             |
| ProjectSearchAreas | Seabird Nesting Islands       | Rare Mussels (5 mi review)                               |
|                    | Inland Waterfowl/Wading Bird  | A and B List Ponds                                       |
|                    | Shoreland Zoning_lwwh         | Arctic Charr Habitat                                     |
|                    | Tidal Waterfowl/Wading Bird   | E. Brook Trout Joint Venture Subwatershed Classification |
|                    | Significant Vernal Pools      | Redfin Pickerel/Swamp Darter Habitats (buffer100ft)      |
|                    | Environmental Review Polygons | Special Concern-occupied habitats(100ft buffer)          |
|                    |                               | Wild Lake Trout Habitats                                 |









PAUL R. LEPAGE  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF MARINE RESOURCES  
650 STATE STREET  
BANGOR, MAINE  
04401

PATRICK C. KELIHER  
COMMISSIONER

October 1, 2014

Submitted Electronically

Kara Moody  
Normandeau Environmental Consultants  
8 Fundy Road  
Falmouth, Maine 04105

RE: Weaver Wind Power Project Request for the identification of potential Atlantic Salmon Habitat

Dear Ms. Moody:

At the request of Normandeau Associates, Inc., Maine Department of Marine Resources (MDMR) has reviewed the project area associated with the proposed wind project. The proposed project is located in the East Branch and Middle Branch of the Union River watershed. The Union drainage does contain Atlantic salmon (*Salmo salar*) and Atlantic salmon habitat. MDMR has not surveyed the East or Middle Branches for Atlantic salmon habitat; however, both drainages do contain potential Atlantic salmon habitat. A few thousand (<20,000) Atlantic salmon fry are stocked into the West Branch of the Union River annually. It is unlikely that Atlantic salmon would be present in tributaries of the East Branch and Middle Branch of the Union River. Maine DMR does have an active restoration program in the West Branch of the Narraguagus River and it is possible that Atlantic salmon could be in tributaries to the West Branch of the Narraguagus River (T16MD).

Thank you for the opportunity to comment on this project. Please contact me if you have additional questions or the scope of this project changes.

Sincerely,

Oliver Cox  
Marine Resource Scientist  
207.941.4487  
oliver.n.cox@maine.gov





**Weaver Wind Project**

MDEP Site Location of Development/NRPA Combined Application

**SECTION 9: UNUSUAL NATURAL AREAS**

**Exhibit 9-2**

2014 Rare, Threatened and Endangered Survey Report





**Stantec Consulting Services Inc.**  
30 Park Drive, Topsham ME 04086-1737

November 21, 2014  
File: 195600884

**Attention: Dave Fowler**

Weaver Wind, LLC  
129 Middle Street  
3rd Floor  
Portland, ME 04101

**Reference: Rare, Threatened, and Endangered Plant; and Rare and Exemplary Natural Community Survey, Weaver Wind Project, Hancock County, Maine**

Dear Mr. Fowler,

In August 2014, Stantec Consulting Services Inc. (Stantec) completed rare, threatened, and endangered plant (hereafter, rare plants) and rare and exemplary natural community surveys at the proposed Weaver Wind Project, in Hancock County, Maine (project; Figure 1). The surveys were conducted during the pre-construction and planning phase of the project to facilitate project layouts in order to avoid and minimize impacts to rare plants and their sensitive habitats. As a result of field surveys, no rare, threatened, or endangered plants, or rare or exemplary natural communities were identified within the project area. This report summarizes the methods and results of the field surveys.

## **BACKGROUND**

In Maine, rare plants and rare and exemplary natural communities are protected under the Site Location of Development: No Adverse Effect of the Natural Environment statute (38 M.R.S.A. § 484(3)) and the associated standards in the Maine Department of Environmental Protection (MDEP) Chapter 335, Section 12: Preservation of Unusual Natural Areas. Projects that qualify for Site Location of Development permits must make provisions to avoid and minimize impacts to unusual natural areas and demonstrate that the proposed activities will not have an adverse effect on such areas. In Maine, there are presently 352 species of plants and 59 natural communities listed as rare by the Maine Natural Areas Program (MNAP). In addition to rare natural communities, exemplary and outstanding occurrences of more common natural communities are also tracked by MNAP. Botanical nomenclature used herein follows *Flora Novae Angliae*.<sup>1</sup>

## **METHODOLOGY**

Prior to conducting field surveys, Stantec botanists complete a landscape analysis of the project area to identify habitat types that support rare plants that could be present within the project area. The first step of a landscape analysis involves reviewing the Beginning with Habitat digital

---

<sup>1</sup>Haines, A. 2011. *Flora Novae Angliae: A Manual for the Identification of Native and Naturalized Higher Vascular Plants of New England*. Yale University Press, New Haven, CT.



November 21, 2014  
Dave Fowler  
Page 2 of 11

**Reference: Rare, Threatened, and Endangered Plant; and Rare and Exemplary Natural Community Survey, Weaver Wind Project, Hancock County, Maine**

data available and other relevant botanical literature of known occurrences of rare plants and rare and exemplary natural communities surrounding the project area. The second step of the landscape analysis is to overlay the project area, along with topography and hydrography data, onto recent high-resolution aerial photographs. Using this information, as well as prior regional botanical field experience, the landscape can be "read" to identify likely habitat types and current conditions of those habitats present within the project area. In addition to the landscape analysis, wetland scientists and biologists completing wetland delineation and vernal pool surveys, identify areas within the project area that the botanist should visit during the field survey. The list of expected habitat types within the project area is compared to the rare species lists to select species likely to be present within the project area based on known habitat associations and geographic ranges.

The list of potential rare plants generated during the landscape analysis is used to focus the field surveys. During the field surveys the Stantec botanist meanders throughout each habitat area identified during the landscape analysis, targeting areas of different slope, aspect, hydrology, and forest cover. The botanist uses field maps and Global Positioning System (GPS) to navigate to each habitat type. Throughout the survey, the botanist records the habitat characteristics, dominant vegetation, and condition within the project area. The project area straddles many miles of gravel roads, the edges of which vary from lightly and irregularly disturbed to heavily and frequently disturbed. Some plant species such as terrestrial water-starwort (*Callitriche terrestris*), a species of unknown status (SU), known from this part of the state, often occur in these types of disturbance regimes. On account of the small patch size of many of these sites and the fact that they are often difficult to identify using aerial photo methodology, all road edges in the project area were field surveyed.

For each rare plant identified, the botanist records data on population size and condition, and associated habitat and condition. Similar data are recorded for rare or exemplary natural communities: community size, species composition, integrity, and landscape context. The boundaries of any occurrences are recorded with a Trimble® Pro-series GPS capable of sub-meter accuracy. MNAP Rare Plant Survey and Natural Community Survey data forms are completed for each occurrence identified within the project area. The botanist documents each occurrence with diagnostic photographs of each rare plant species, as well as representative photographs of the associated habitat and population area.

## **RESULTS**

Rare plant field surveys were completed on August 2, 3, and 8, 2014 throughout the project area. In addition, Stantec scientists are currently delineating wetlands within the project area. As a result of these field surveys, no rare plants or rare or exemplary natural communities were observed within the project area. The following summarizes the habitat characteristics of the proposed Weaver Wind project area.

Design with community in mind



November 21, 2014  
Dave Fowler  
Page 3 of 11

**Reference: Rare, Threatened, and Endangered Plant; and Rare and Exemplary Natural Community Survey, Weaver Wind Project, Hancock County, Maine**

The project area is dominated almost entirely by an even mix of early-successional forests (Figure 2) and conifer plantations (Figure 3), with much smaller areas of beaver impounded wetlands (Figure 4), peatlands, roadside ponded areas (Figure 5), second growth red spruce (*Picea rubens*) forests (Figure 6), and young Beech-Birch-Maple forests.

Early successional patches are dominated by paper birch (*Betula papyrifera*), quaking aspen (*Populus tremuloides*), American beech (*Fagus grandifolia*), balsam fir (*Abies balsamea*), and red spruce. Mountain maple (*Acer spicatum*) and striped maple (*Acer pensylvanicum*) dominate younger stands where larger canopy species have yet to surpass them. Due to their density and associated low levels of light, the herbaceous layer in these forests is very low, except in canopy gaps that tend to be associated with logging debris or dry road edges. Here red raspberry (*Rubus idaeus* ssp. *strigosus*) is dominant, with Canada goldenrod (*Solidago canadensis* var. *canadensis*), flat-topped white-aster (*Doellingeria umbellata*), narrow-leaved fireweed (*Chamerion angustifolium*), and poverty oatgrass (*Danthonia spicata*).

Conifer plantations are common in the project area, both on potential summit/turbine areas as well as along much of the road system. Spruces, both red and black (*Picea mariana*) are common, along with smaller quantities of balsam fir. These stands vary in their age, although all are young and consist of extremely dense growth and a sparse herbaceous layer. The vast majority of plantations consist of trees less than 20 feet in height, with diameter at breast height (DBH) typically 2.5 to 5 inches, with occasional larger specimens. The sparse herbaceous layer contains young yellow birch (*Betula alleghaniensis*), white birch, grey birch (*Betula populifolia*), hay-scented fern (*Dennstaedtia punctilobula*), cinnamon fern (*Osmundastrum cinnamomeum*), and occasional red elderberry (*Sambucus racemosa*). The bryophyte layer in these plantations is well developed, at least on mesic soil sites, and is dominated by three-lobed bazzania (*Bazzania trilobata*), broom-mosses (*Dicranum* spp.), and big red-stemmed moss (*Pleurozium schreberi*). A few small patches of second growth red spruce occur in the project area, the best example of which is directly north of the Route 9 and Middle Branch Road intersection in T28 MD BPP. The canopy is dominated by red spruce, with a sparse pole layer, a shrub layer dominated by black huckleberry (*Gaylussacia baccata*), and a dense bryophyte layer of broom-mosses and big red-stemmed moss.

Mesic roadside ditches north of Route 9 support plants that have established after disturbances associated with road and ditch maintenance. These areas have gravel and sand substrates, with fine organic matter accumulating in the gravel matrix. Most appear to be inundated in spring and to drain slowly after heavy rains. Species diversity in these ditches is relatively high, with a species composition that is aided by occasional disturbance and removal of larger plant species that would outcompete them. Lesser Canada St. John's-wort (*Hypericum canadense*) dominates, with common St. John's-wort (*Hypericum perforatum* ssp. *perforatum*), common grass-leaved goldenrod (*Euthamia graminifolia*), little club-spur bog-orchid (*Platanthera clavellata*), round-



November 21, 2014  
Dave Fowler  
Page 4 of 11

**Reference: Rare, Threatened, and Endangered Plant; and Rare and Exemplary Natural Community Survey, Weaver Wind Project, Hancock County, Maine**

leaved sundew (*Drosera rotundifolia*), Rhode Island bentgrass (*Agrostis capillaris*), whorled milkwort (*Polygala verticillata*), and blood milkwort (*Polygala sanguinea*). It is these areas that could potentially support terrestrial water-starwort, which is typically found in seasonally inundated shallow pools (that dry later in summer) lacking dense vegetation. No specimens of this species were observed although all appropriate habitat was surveyed. This ditch community did not occur south of Route 9, presumably because of the much longer time interval since disturbance, and denser vegetation that has colonized the road edges.

There are several small patches of Beech-Birch-Maple forest in the project area. Most are very young and not representative of this community type in terms of species composition and structural diversity, although one second-growth stand is more representative. This stand is approximately 1000 feet north of Alligator Lake and immediately west of the road that bisects the project area. The canopy is dominated by the 8-12 inch DBH sugar maples (*Acer saccharum*), yellow birch, and American beech. The pole and shrub layers contain younger specimens of the canopy species, with mountain maple (*Acer spicatum*) and striped maple (*Acer pensylvanicum*) common. The herbaceous layer in these hardwood forests covers approximately 40% of the stratum and contains species such as New York fern (*Parathelypteris novaboracensis*), round-fruited short-scaled sedge (*Carex deweyana* var. *deweyana*), long-beech fern (*Phegopteris connectilis*), evergreen wood fern (*Dryopteris intermedia*), round-leaved violet (*Viola rotundifolia*), long-stalked sedge (*Carex pedunculata*), and purple trillium (*Trillium erectum*). No rare plant species were observed in this Beech-Birch-Maple community, although the soils undoubtedly become richer down slope to the south and west. Realignment of the project area into these down-slope areas would necessitate additional survey effort for rich site species.

Numerous small ponded areas and beaver impoundments occur adjacent to roads in the project area. They vary in water depth and size but are relatively consistent in terms of species composition. Most are dominated by Canada reed grass (*Calamagrostis canadensis*) and common woosedge (*Scirpus cyperinus*), with reed canary grass (*Phalaris arundinacea*), tussock sedge (*Carex stricta*), blue-flag iris (*Iris versicolor*), rosy meadowsweet (*Spiraea tomentosa*), blue-flag iris (*Iris versicolor*), and broad-leaved cattail (*Typhya latifolia*). Areas of greater and/or more prolonged inundation support ribbon-leaved pondweed (*Potamogeton epiphydrus*), white cutgrass (*Leersia virginica*), northern wild rice (*Zizania palustris*), American bur-reed (*Sparganium americanum*), and rattlesnake manna grass (*Glyceria canadensis*). Some of these wetlands are small peatlands conforming to a Leatherleaf-Boggy-Fen community type. Here organic soils support a dominant cover of leatherleaf (*Chamaedaphne calyculata*), with round-leaved sundew, pitcher plant (*Sarracenia purpurea*), tawny cottonsedge (*Eriophorum virginicum*), and in small pools, flat-leaved bladderwort (*Utricularia intermedia*).

An additional survey was performed on November 15, 2014, targeting expanded proposed project areas. This survey did not identify any additional habitat types as compared to the August 2014 surveys. Approximately 6 inches of fresh snowfall precluded visual inspection of the

Design with community in mind



November 21, 2014  
Dave Fowler  
Page 5 of 11

**Reference: Rare, Threatened, and Endangered Plant; and Rare and Exemplary Natural Community Survey,  
Weaver Wind Project, Hancock County, Maine**

herbaceous layer and given the time of year many herbaceous species are difficult to confidently identify. Despite this, I believe the necessity to resurvey these areas is extremely low given the similarity in habitat types to those observed in August 2014, namely early-successional forests (Figure 2) and conifer plantations (Figure 3), and the cosmopolitan species composition observed in August 2014.

In summary, no rare plants or rare or exemplary natural communities were located within the project area as a result of Stantec's targeted rare plant surveys and wetland delineations. The prevalence of large-scale habitat disturbances as a result of past and current timber harvests, high percentage of land allocated to recent afforestation, lack of unique habitat conditions, and young successional stage of the majority of the landscape suggest a low likelihood of rare plant occurrences within the project area. Realignment or enlargement of the proposed project area could encounter other community types and would necessitate additional survey effort for these areas.

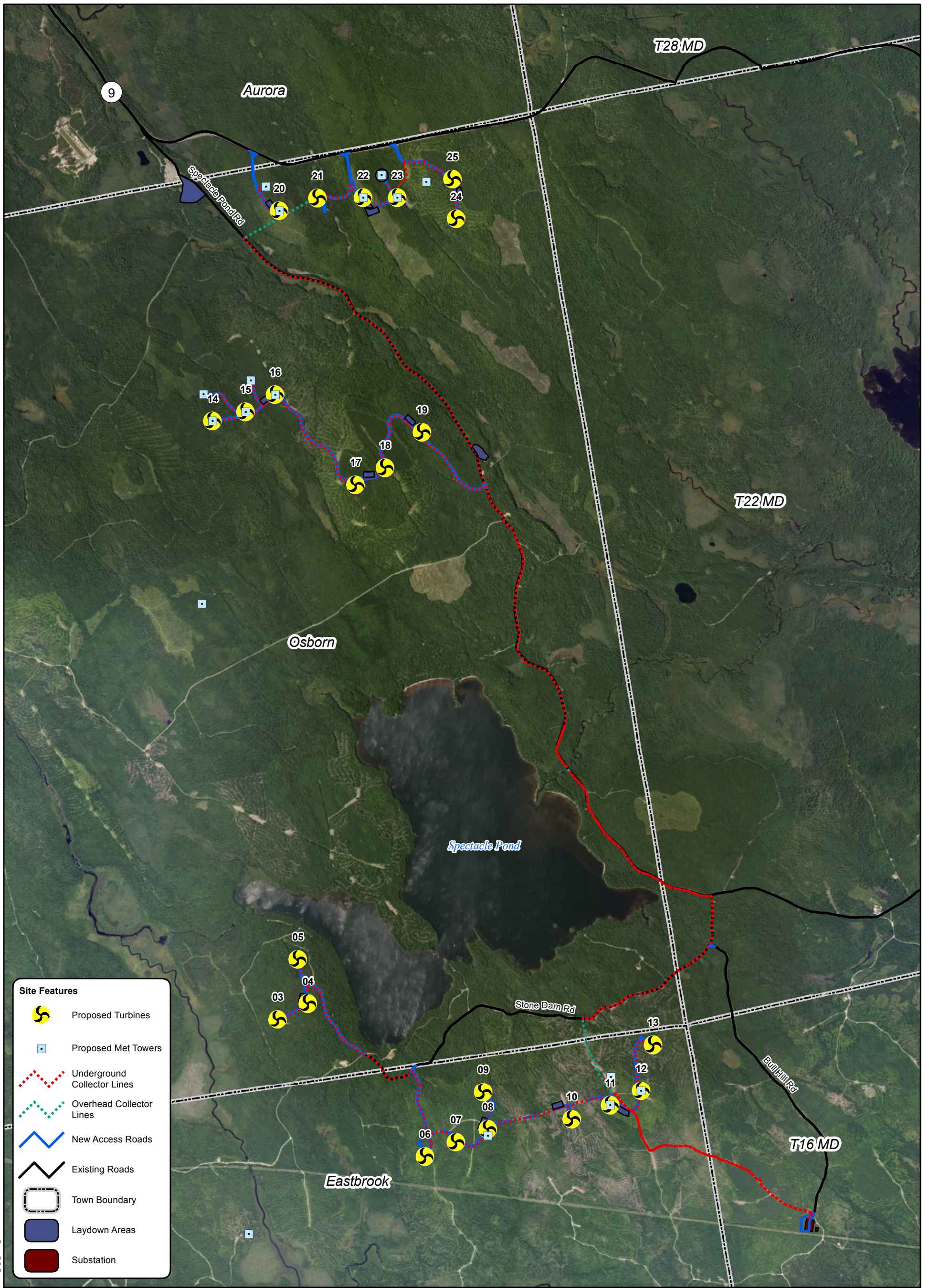
Regards,

**STANTEC CONSULTING SERVICES INC.**

Eric Doucette  
Botanist, Project Scientist  
Phone: (207) 729-1199  
Fax: (207) 729-2715  
Eric.Doucette@stantec.com

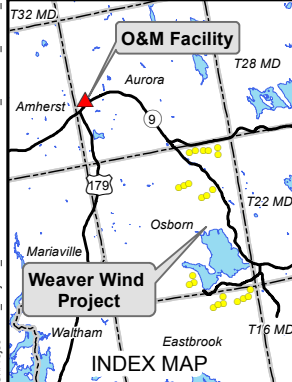
Attachment: Figures





**Site Features**

- Proposed Turbines
- Proposed Met Towers
- Underground Collector Lines
- Overhead Collector Lines
- New Access Roads
- Existing Roads
- Town Boundary
- Laydown Areas
- Substation



\*Note: Data provided by: James W. Sewall, Reed & Reed, Inc. NHD, ESRI & MEGIS  
For further detail see civil & electrical design

1:40,000

0 0.5 1 2 Kilometers

0 0.5 1 2 Miles

**Figure 1**  
**Site Location Map**  
*Weaver Wind Project*  
*Hancock County, Maine*

Normandeau Associates  
8 Fundy Road  
Falmouth, ME USA  
04105

C:\Projects\GIS\_Projects\_2014\GIS\Weaver\Draft\Phase1\_Fig1\_11x17\_121114.mxd





November 21, 2014  
Dave Fowler  
Page 7 of 11

**Reference: Rare, Threatened, and Endangered Plant; and Rare and Exemplary Natural Community Survey, Weaver Wind Project, Hancock County, Maine**



**Figure 2. Early successional forest 1.5 miles south of Stud Mill Road. Young birches in foreground (trunks not visible) are 6.5 feet tall. This is the most common forest type in the project area.**



November 21, 2014  
Dave Fowler  
Page 8 of 11

**Reference: Rare, Threatened, and Endangered Plant; and Rare and Exemplary Natural Community Survey, Weaver Wind Project, Hancock County, Maine**



**Figure 3. Conifer plantation: common along roadsides and proposed turbine areas. Red spruces (*Picea rubens*) in front row are 10-12 feet tall.**





November 21, 2014  
Dave Fowler  
Page 9 of 11

**Reference: Rare, Threatened, and Endangered Plant; and Rare and Exemplary Natural Community Survey,  
Weaver Wind Project, Hancock County, Maine**



**Figure 4. Beaver impounded wetland associated with Leighton Brook, adjacent to Spectacle Pond Rd. in Osborn.**



November 21, 2014  
Dave Fowler  
Page 10 of 11

**Reference: Rare, Threatened, and Endangered Plant; and Rare and Exemplary Natural Community Survey,  
Weaver Wind Project, Hancock County, Maine**



**Figure 5. Roadside ponded area approximately .5 miles south of the Stud Mill Rd. and Middle Branch Rd. intersection in T34MD BPP.**





November 21, 2014  
Dave Fowler  
Page 11 of 11

**Reference: Rare, Threatened, and Endangered Plant; and Rare and Exemplary Natural Community Survey,  
Weaver Wind Project, Hancock County, Maine**



**Figure 6. Second growth red spruce (*Picea rubens*) .15 miles north of the junction of Rt. 9 and the Middle Branch Rd in T28 MD BPP.**