



NUMBER NINE
WIND FARM®

Natural Resource Surveys

Work Plan

September 15, 2014

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1.0 Introduction

EDP Renewables (EDPR) is in the process of developing the 250-megawatt (MW) Number Nine Wind Project (Project) in Aroostook County, Maine. The Project is planned to include 125 2.0-MW wind turbines, including potential locations in T8R3 WELS, T9R3 WELS, T10 R3 WELS, TC R2 WELS, TDR2 WELS, and E Twp (Figure 1). The Project also includes approximately 45 miles of overhead generator lead electrical line in TD R2 WELS, Monticello, Littleton, Houlton, Hodgdon, Linneus, TAR2 WELS, Forkstown, and Haynesville (Figures 2-3). The Project will also include associated access roads and underground and/or overhead electrical collector systems, a new substation, and an operations and maintenance building. EDPR has developed a preliminary turbine layout and generator lead alignment, but specific locations of all Project infrastructure have not yet been finalized.

Several natural resource surveys were conducted between 2008 and 2010 for a previous iteration of the Project. Table 1 summarizes the surveys completed for the Project and the surveys planned for the Project in 2014.

This work plan was presented at an agency meeting on March 5, 2014 with EDPR, Stantec Consulting Services, Inc. (Stantec), Western EcoSystems Technology, Inc. (West), the Maine Department of Inland Fisheries and Wildlife (MDIFW), and the United States Fish and Wildlife Service (USFWS). This work plan was revised to incorporate feedback received during that meeting as well as additional feedback received via email from MDIFW on March 20, 2014, as well as additional conversations with MDIFW Species Biologists during spring and summer 2014. The workplan was revised on April 16, 2014, and subsequently on July 15, 2014.

The following sections provide specific details about the surveys previously conducted, currently ongoing, or proposed in 2014.

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Table 1. Summary of Natural Resource Surveys Planned and Completed

Type	Survey	Surveys Completed for Project Prior to 2014	Additional Surveys Planned
Wildlife Surveys	Nocturnal Migration Surveys	Fall 2008 (46 nights between 3 sites)	20 nights between April 15 and June 1 20 nights between September 1 and October 15 Saddleback Mountain in center of project area with good visibility
	Breeding Bird Surveys	30 points May 2008 (9 visits) Aug-Oct 2008 (11 visits)	No additional work planned
	Acoustic Bat Surveys	10 detectors, 5 in met towers, 5 on ground July to October 2008	April to October 2014 8 detectors at met towers, 2 detectors in each of 4 met towers, plus 2 detectors to be deployed at "temporary stations" for 2 week periods
	Raptor Migration Surveys	3 sites Spring 2008 (24 surveys between 2 sites) Fall 2008 (22 surveys between 2 sites)	2 days per week between March 1 and June 15 2 days per week between September 1 and November 30 Number Nine Mountain
	Eagle and Raptor Observation Surveys	Fall 2013 (4 visits to 21 points / 84 total surveys) Sept – Nov (84 hours) 1 survey hour per survey location per month	March to August 2014 32 point count locations 1 survey hour per survey location per month
	Raptor Nest Survey	None	2 aerial surveys via helicopter within 10 miles of proposed turbine locations 1: late April 2: early June
	Great-blue Heron Nest Survey	None	1 aerial survey via helicopter within 4 miles of proposed turbine locations 1: early June
	Deer Wintering Area	None	Winter 2014, if conditions are acceptable and landowner permission is received
	Canada Lynx	None	Desktop habitat assessment Snow track surveys during winter 2014, 3 total visits
	Other listed species	None	No additional work planned Based on available data and desktop review of habitat, it is unlikely that Bicknell's thrush, roaring brook mayfly, northern spring salamanders, or northern bog lemming will be present in the Project area
Terrestrial Surveys	Wetlands	Turbine area: wetland delineations conducted between 2008-2010 Gen Lead North: No surveys completed Gen Lead South: Wetland delineations conducted in 2008	Surveys planned for spring-early summer 2014. Areas to be surveyed will be finalized prior to initiation of fieldwork
	Vernal Pools	Turbine area: vernal pool surveys conducted between 2008 and 2010 Gen Lead North: No surveys completed Gen Lead South: Wetland delineations conducted in 2008	Surveys planned for May-June 2014. Areas to be surveyed will be finalized prior to initiation of fieldwork First visit likely during 2 nd to 3 rd week of May, depending on weather conditions. Second visit approximately 2 weeks after first visit
	Salmon	None	During wetland delineations, stream characteristics and any potential obstructions will be documented
	RTE Plants	Turbine area: no surveys completed Gen Lead North: no surveys completed Gen Lead South: surveys conducted in 2008	Surveys planned for project area

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2.0 Wildlife Surveys

WEST conducted a variety of field surveys in portions of the Project area in 2008, including nocturnal radar surveys, breeding bird surveys, raptor migration surveys, and acoustic bat surveys.¹ Raptor migration and eagle observation surveys continued in fall 2013 and will continue through 2014. Acoustic bat surveys and nocturnal radar surveys will be conducted in 2014.

Table 2. Wildlife Surveys Conducted in the Project Area by WEST in 2008 and 2013

Survey Type	Season/Year	Effort
Nocturnal Radar	Spring and Fall 2008	31 nights (spring) and 46 nights (fall)
Neotropical Songbird Breeding and Migration	May 2008, August – October 2008	20 total field visits; 3-minute counts at 30 points
Raptor Migration	Spring and Fall 2008	3-hr surveys during peak periods
Eagle Observation Surveys	Fall 2013	84 total field visits; 60-minute counts at 21 points
Acoustic Bat	Fall 2008	5 raised detectors, 5 ground detectors, full nights

2.1 NOCTURNAL MIGRATION SURVEYS

2.1.1 Surveys Completed for Project

Radar surveys were conducted in spring 2008 for 31 nights from 1 location and in fall 2008 for 46 nights between 3 locations (Tables 1-2). WEST deployed an X-band marine radar unit mounted on a converted van during the spring (April 30 – May 31, 2008), and fall (August 16 – October 15, 2008) survey periods. The radar unit transmitted at 9,410 MHz with peak power output of 12 kW, similar to other radar labs used to study wind power development sites throughout the US.

WEST operated one radar location during the spring migration survey period and three radar locations during the fall season. The expanded fall survey locations assessed the extent to which local changes in topography may affect migration patterns over the Project area. Results from the nocturnal radar study

¹ DRAFT Wildlife Baseline Studies for the Number Nine Wind Farm Project, Aroostook County, Maine, May 2008–November 2008. Prepared by WEST, Inc. (WEST), February 6, 2009

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conducted were similar to other radar studies in the eastern US (Table 5.2 in 2008 report). Mean fall flight direction was 32° for the spring and 167° for the fall. A weak association with a strong southern migration pattern was observed in the fall. Mean passage rate for spring was significantly lower (15 t/km/hr) than the average for the eastern US (241 t/km/hr), based on publicly available data from 14 other studies. Mean passage rate for fall was also significantly lower (133 t/km/hr) than the average for the eastern US (253 t/km/hr), based on publicly available data from 18 other studies. Mean flight height of targets was approximately 432 m in the fall and 387 m in the spring, which are similar to the means for all reported studies in the eastern U.S. The percent of targets (~11% fall and ~13% spring) which flew through the zone of risk, defined as the air space below 125 m, were also very near the mean for all other studies where flight height was recorded with vertical mode radar.

2.1.2 Additional Surveys Planned

Stantec will conduct nocturnal radar migration surveys during 20 nights during both the spring migration and fall migration seasons. Stantec will also analyze NEXRAD weather radar images during these migration periods.

2.1.3 Survey Protocol

The objective of nocturnal migration survey is to characterize avian migration in the vicinity of the Project area, including the number of migrants, their flight direction, and their flight. These patterns will be compared with results of other radar surveys in the state that used similar methods and equipment.

Survey Area

A single radar sampling point will be established within the Project on Saddleback Mountain. From this location, the radar will be centrally located within the Project area. The survey station will be located in a manner such that the radar viewshed on the screen sampling in horizontal mode is less than 30% obstructed by ground clutter. A picture of the radar screen will be recorded to assess the amount of ground interference.

Survey Schedule

Radar surveys will be conducted during two seasons, including 20 nights in the spring (between approximately April 15 to May 31, depending on weather conditions for deployment) and 20 nights in the fall (September 1 to October 15). Survey nights will be distributed over several blocks of time during each season based on what has been documented to be the peak migration period during past radar surveys in the state and also weather conditions that are favorable for radar operation and migration.

Survey Methods

A Furuno 12 kilowatt (kW) X-band marine radar will be used to conduct surveys from sunset to sunrise each survey night, weather permitting. Sampling will begin at sunset each survey night and end at sunrise. During a survey night, each hour of the night relative to sunset will be sampled according to the set sampling protocol. The radar will be operated in two modes throughout the course of each night. In surveillance mode, the antenna spins horizontally to survey the airspace, which provides information on

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the number of targets and their flight direction as they pass through the Project site. In vertical mode, the radar antenna is tilted 90 degrees to vertically survey the airspace, which provides information on the altitude of targets passing through the vertical radar beam. Both modes of operation will be used during **each hour of sampling. The radar will be operated at a range of 1.4 km (0.75 nautical miles [4,500'])** to ensure detection of small targets.

The radar display will be connected to the video recording software of a computer enabling digital archiving of the radar data for subsequent analysis. This software will record and archive video samples continuously every hour from sunset to sunrise of each survey night. The radar antenna will be alternated every ten minutes from horizontal to vertical mode. A total of 30 minutes of vertical samples and 30 minutes of horizontal samples will be recorded.

Analysis

A stratified random sample set is identified for analysis by randomly selecting six horizontal samples and six vertical samples per hour of survey. This sampling schedule allows for the randomization of sample selection. Video samples will be analyzed using a digital analysis software tool developed by Stantec. For horizontal samples, targets (either birds or bats) are differentiated from insects based on their flight speed, in order to calculate passage rate and flight direction. Passage rates (expressed in targets/kilometer/hour) will be summarized hourly for each night, as well as the overall mean and median nightly passage rates for the entire season. The mean flight direction of recorded targets will also be calculated for each night of data collected.

For vertical samples, the software tool records the entry point of targets passing through the vertical radar beam and their flight altitude above the radar location. The mean flight height of targets will be summarized hourly for each night, as well as the overall mean and median nightly flight heights for the entire season. The average percentage of targets below maximum turbine height will also be calculated for each night of data collected.

NEXRAD weather radar images from the National Weather Service station in Houlton, Maine will be analyzed for the typical spring and fall migration periods to confirm if the nights selected for the radar sampling within the project area are representative of the seasonal migration activity throughout the region.

The data will be compiled and evaluated in a seasonal report that summarizes the results of the surveys for each season. Each seasonal report will include a description of methods, site location descriptions, summarized data (as described above), and discussion sections detailing the results. Tables of survey data would be included in the report. Maps, photographs, and illustrations would be attached as appropriate.

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2.2 BREEDING BIRD SURVEYS

2.2.1 Surveys Completed for Project

Breeding bird surveys were conducted at 30 locations in spring and fall 2008 (Tables 1-2). WEST conducted songbird migration and summer breeding use point surveys at Project during nine visits in the spring (May 1 to May 31, 2008) and 11 visits in the fall (August 16 to October 31), resulting in a total of 434 three-minute surveys.

WEST identified eighty-seven unique species during songbird breeding and migration surveys, with a mean of 2.05 species observed per survey. A total of 1,369 individual bird observations (768 in the spring and 601 in the fall) within 1,017 separate groups (638 in the spring and 379 in the fall) were documented. Passerines had the highest use of any bird type at the Number Nine Wind Farm Project in both seasons (3.16 and 2.56 birds/point/survey hour in the spring and fall, respectively). In both seasons use was highest by warblers (spring: 0.98 birds/plot/survey hour, fall: 0.59) and grassland/sparrows (spring: 0.76, fall: 0.63). For all bird types combined, mean use (birds/survey) was highest at Point 20 (7.14 birds/survey) in the spring, and at Point 15 (5.38 birds/survey) in the fall. Bird use at the other points ranged from 1.33 to 6.88 birds/survey in spring and 1.22 to 4.90 birds/survey in fall.

2.2.2 Additional Surveys Planned

No surveys planned because results of 2008 surveys consistent with results of typical results documented at other publicly available projects in the eastern United States on forested ridgelines.

2.2.3 Survey Protocol

Not applicable because no additional surveys are planned.

2.3 ACOUSTIC BAT SURVEYS

2.3.1 Surveys Completed for Project

Acoustic bat detector surveys were conducted at 5 locations in summer-fall 2008 (Tables 1-2), including 5 detectors in met towers and 5 detectors on the ground.

WEST documented a total of 1,200 bat passes during 896 detector nights from July 1 to October 27, 2008. Averaging bat passes per detector-night across locations resulted in a mean of 1.24 bat passes per detector-night. **Eighty-six percent of bat passes were \geq 35 kHz in frequency (e.g., *Myotis* bat species), and the remaining calls were $<$ 35 kHz (silver-haired and hoary bats).** Among ground stations, bat activity varied across the project area, with higher activity being recorded at stations at lower elevations. In contrast, bat activity was consistently low among all raised stations. Raised stations recorded a greater proportion of passes by low-frequency species, suggesting that these species fly at higher altitudes. Activity levels for bat passes peaked in late July, likely corresponding to the end of the reproductive

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season when pups are weaned and foraging rates are highest. Low-frequency bat activity also peaked at this time, possibly indicating migration through the area. Activity was moderate in August, and low to absent for September and October, indicating most bats had left the area or entered hibernation by this time.

2.3.2 Additional Surveys Planned

WEST will conduct acoustic bat monitoring during spring, summer and fall (April 15 to October 15). Ten detectors will be deployed, including 2 detectors in each of 4 existing met towers and 2 detectors at additional temporary stations. In addition, 30 detectors will be deployed during the month of July following the USFWS acoustic survey recommendations for northern long-eared bat at 74 temporary stations.

2.3.3 Survey Protocol

Protocol for completed surveys is described in the 2008 Wildlife Baseline Studies Report. Protocol for surveys planned for spring 2014 are described below.

According to recommendations issued by the MDIFW², acoustic bat monitoring is recommended to be conducted during spring, summer and fall (April 15 to October 15) to sample migratory and local bat populations. Detectors are recommended to be placed at meteorological (met) towers at 20 meters above ground and at tree height. There are 4 met towers on the project site.

Survey Methods

WEST will place 2 detectors at each of the towers, with 1 detector microphone mounted at 20 m or 40 m and one detector on a free-standing support at 2-3 meters above ground near the tower. In addition, and to increase the spatial sampling within the project, 2 additional detectors be **deployed at “temporary stations” for 2 week periods. These survey sites will be selected with consideration for the potential for bat activity as well as with consideration for landowner concerns and safety of the equipment.** Potential survey locations include bat flyways, near water sources and in canopy openings. WEST will also place 2 detectors at tree height (5-8 m above ground) beginning August 20, 2014. One will be hung from a tree branch near a met tower clearing, and the other will be hung from a tree branch along a stream. These detectors will remain through the end of the survey season (October 15). In addition, WEST will initiate acoustic driving transects³ beginning August 20, 2014, WEST will conduct 1-2 transect surveys per week (weather dependent) through the end of the survey season.

The northern long-eared bat acoustic surveys will follow the current USFWS guidelines developed to establish presence/absence of *Myotis* bats based on results of acoustic surveys⁴. The level of survey effort will be based on the estimate of linear disturbance within forested habitat within the Project. Effort will be 2 detector-nights per station, with number of stations determined by number of kilometers of linear

² The MDIFW has not recommended any additional acoustic surveys at the site given their more recent recommendation for curtailment of turbines to minimize potential impacts to bats (email from John Perry, March 20, 2014).

³ <http://corpslakes.usace.army.mil/employees/bats/acoustic.cfm>

⁴ http://www.fws.gov/northeast/virginiafield/pdf/endspecies/2014_IBat_Summer_Survey_Guidelines.pdf

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disturbance. Thirty Anabat detectors will be deployed to survey 74 locations within the Project over approximately a 7-day period during the month of July 2014.

Analysis

Following completion of the data collection, a report will be produced that outlines the methods, results and discussion of the results of the acoustic studies. The report will assess temporal and spatial variation in overall bat activity, and compare the overall bat activity rate (bat passes/detector-night) to other projects in the Region to develop an assessment of relative risk to bats, as well as to determine variation in risk among seasons. Bat passes will be classified by guild and species to the extent possible; high-frequency (HF) and low-frequency (LF) passes will be tallied and the proportion of call types, as well as the species likely to have produced them will be summarized in space and time. For the acoustic data collected at the met towers, bat passes will be compared to wind speed and temperature to assess variation in bat activity as a function of weather patterns. Data from met towers will also be compared among the 1.5 m, 20 m and 40 m heights to examine differences in detection rates and or species groups recorded at different heights. For the acoustic data collected according to the USFWS recommended methods to establish presence or absence, bat passes will be screened for those potentially made by *Myotis* species and further screened for those likely made by northern long-eared bat, per USFWS guidance.

2.4 RAPTOR MIGRATION SURVEYS

2.4.1 Surveys Completed for Project

Raptor migration surveys were conducted during 24 surveys between 2 locations in spring 2008 and during 22 surveys between 2 sites in fall 2008 (Tables 1-2).

Raptor use observed by WEST during raptor migration surveys in 2008 was less than one individual per observer hour in both the spring (May 1 to May 31, 2008) and fall (September 1 to October 31, 2008) (0.34 and 0.46 birds/survey). Raptors comprised 52.6% of the overall bird use in the spring and 44.4% of use in the fall. Waterfowl comprised almost half (46.6%) of the overall bird use in the fall, with use being 0.48 birds/survey. However, waterfowl were observed in only 1.0% of surveys and high use was due to one flock of Canada geese. Only 13.5% of birds observed during raptor migration surveys were observed within the zone of risk. Over 40% of all birds at all points were observed flying at a height of 200-300 m.

2.4.2 Additional Surveys Planned

WEST will conduct raptor migration surveys from one fixed-point (Number Nine Mountain summit) approximately twice each week from March through May and September through November 2014.

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2.4.3 Survey Protocol

The objective of the raptor migration surveys is to estimate the temporal and relative abundance of raptors migrating through the Project area. Surveys will be conducted using typical raptor migration survey methods of the Hawk Migration Association of America (HMANA).

Survey Area

One survey point/station will be established in the Project area on or near the summit of Number Nine Mountain with good visibility long distances around the point and particularly in the direction where prevailing migration would be coming from. This survey point was used in 2008 in both the Spring and Fall raptor migration surveys. This survey point provides good visual coverage of the vegetation types, topographic features, and areas proposed for turbine construction within the Project area.

Survey Schedule

The survey point/station will be visited twice per week, weather permitting, and during weather conducive to raptor migratory activity, from approximately March 1 through June 15 in the spring and from September 1 through November 30 in the fall (MDIFW 2013). Each survey will be for 6-8 hours each survey day between approximately 0900 and two hours before sunset.

Survey Methods

Surveys will be conducted according to standard hawk watch or raptor migration survey methods consistent with methods used by the HMANA and Hawk Watch International (HWI). The focus of the survey will be locating and recording diurnal migrant raptors (*Accipiters*, *Buteos*, eagles, falcons, harriers, and vultures), however notable observations of other diurnal migrant birds and sensitive species will also be recorded during the surveys. Observers will continuously scan the sky and surrounding viewshed for raptors in the survey area. Surveyors will use binoculars and spotting scopes to aid in spotting and identifying birds. Information on the species (or best possible identification), number of individuals, age and sex (if possible), flight height and direction, time of sighting, and approximate distance from the point when first observed will be recorded. The activity or behavior of the bird(s) and location of each bird relative to the project area, general habitat categories, and topographic features over which the bird(s) are flying will be recorded.

The behavior or activity of each raptor or group of raptors observed will be recorded. Behavior categories include perched, circling/soaring, flapping, active hunting, gliding, hovering, vocalizing, and other (noted in comments). Behavior categories are used to aid in estimating of the proportion of raptors observed that were actively migrating. Information about each observation such as the activity/behavior, approximate flight height and approximate distance to the bird(s) will be recorded from the point of first observation.

Locations of raptors and other large diurnal migrant birds will be recorded on field maps by observation number. Sensitive species (species listed at either the Federal or state level as being endangered, protected, in need of conservations, etc.) will also be recorded in the same manner. Flight paths and locations of perched birds will be digitized for subsequent mapping, if needed.

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Analysis

Bird Diversity and Species Richness - Bird diversity will be represented by the total number of unique species observed. Species lists, with the number of observations and the number of groups, will be generated by season. Species richness will be calculated as the mean number of raptor species observed per survey.

Passage Rate or Bird Use, Frequency of Occurrence, and Species Composition – Raptor use or passage rate will be calculated as the mean number of individuals observed per observer-hour within an unlimited view shed around the plot, consistent with reporting from other typical raptor migration surveys. This type of metric allows standardized comparison between sample locations, time (hours, days, weeks, seasons), or with other studies where similar data exist. Due to the unlimited viewshed used in the surveys, the distribution of distances from the observer recorded in the field will be evaluated to determine the estimated percent of observations of birds passing through the project area, if needed. The frequency of occurrence is calculated as the percent of surveys in which a particular species is observed. Species composition is calculated as the proportion of the overall passage or use that is attributable to a particular species or raptor sub-type.

Bird Flight Height and Behavior - To calculate potential risk to flying birds, the first flight height recorded will be used to estimate the percentage of birds flying within the rotor-swept height (RSH) where potential collision with turbine blades could occur. If the turbine type for the project is known the specific RSH for that turbine will be used in the analysis. If it is unknown a generic RSH of 25 m to 150 m AGL, will be used, which is representative of typical turbine options used in modern wind projects.

Temporal Use – Passage rate or use will be plotted over time to illustrate changes in raptor migration between and within seasons. To the extent possible, temporal use analyses will be supplemented with information from the general raptor observation surveys which are designed to provide more detail on use patterns within the study area and will cover more of each season than the recommended raptor migration surveys (see below).

2.5 EAGLE AND RAPTOR OBSERVATION SURVEYS

2.5.1 Surveys Completed for Project

Surveys specific to raptor and eagle observations were completed in the Fall of 2013. Raptor use observed by WEST in 2013 was 0.23 raptors per 60-minute survey. Seven raptor species were observed. During the surveys, a total of six bald eagles were observed. Two of these observations were outside an 800-m radius viewshed around the observation point and were not included in the standardized analysis of eagle use.

2.5.2 Additional Surveys Planned

WEST will conduct eagle and raptor observation surveys during the period from March thru August 2014. Surveys will be conducted at up to 32 point count locations based on the proposed turbine layout

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and site access. Efforts will be made to survey each point count location at least once each month per the recommendations of the USFWS for eagle use surveys (USFWS 2013). The total targeted survey effort is 200 hours.

2.5.3 Survey Protocol

Protocol for completed surveys is described in the 2008 Wildlife Baseline Studies Report. Protocol for surveys conducted in fall 2013 and planned for spring-summer 2014 are described below.

The objective of the eagle and raptor observation surveys is to provide information regarding levels of use by bald eagles, golden eagles, other diurnal raptors species (Buteos, vultures, Accipiters, falcons) and other large migrant birds (e.g., waterfowl, shorebirds, waterbirds) near potential turbine locations. Surveys will be conducted primarily using methods described in the USFWS ECPG (2013) but with additional data collection to allow comparison with the previous site studies and numerous comparable projects throughout the northeast and eastern U.S. Such observational surveys are currently recommended for characterizing levels of eagle use and for calculating risk of a proposed wind energy project to eagles in the USFWS ECPG (USFWS 2013) and for overall avian risk as part of the USFWS WEG (USFWS 2012).

Survey Plots

The ECPG recommends that survey plots, defined as a point and the area within 800 meters around that point (approximately 2 km²), cover 30% of the area that is encompassed by a 1-km buffer around the proposed turbine locations. To meet this recommendation, up to 32 point count locations will be established within the study area as close to proposed turbine locations as possible and in a manner so that 800-meter buffers around each point do not overlap.

Point count locations will be determined prior to the start of surveys, but will be micro-sited to locations with good visibility during field set-up. Survey locations will be located along public roads, trails, and ridgelines within the Project where access is good, visibility is minimally obstructed, and there is a large viewshed around the point. Visibility is a primary concern when selecting sampling points, as maximizing visibility increases detection rates of eagles and other raptors.

Survey Schedule

The recommended level of survey effort for projects which have existing data, or Tier 1 and 2 studies (USFWS 2012) suggest the risk to eagles may be Category 2 (moderate), is one survey hour per survey location per month. Each point will be surveyed for 60 minutes once per month from March through August, 2014. The survey stations will be divided up so that roughly 6 to 8 stations are visited each week over the study period. Each plot will be surveyed for 60 minutes each time it is visited.

Survey Methods

Standard field data collection and field forms will be employed. Observers will record the start time of the 60-minute survey and then continuously watch and scan the observation plot for eagles and other raptors. For all eagle observations, the number of eagle observation minutes will be calculated. Eagle observations

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will include minute by minute data collection for: number of individuals, distance from observer, behavior, and flight height.

Data recorded will document the species and number of birds observed, their movements and distribution, the proportion of birds occurring within the rotor swept area, and altitude and orientation of flight. Landmarks will be located to aid in identifying the survey boundaries of each observation plot. The date, start, and end time of observation period; plot number; species or best possible identification; number of individuals; sex and age class; location; first, minimum and maximum height above ground level; activity; flight path and direction; and habitat will be recorded.

Flight direction and flight path location will be mapped for eagles and raptors. Eagle, raptor and other large bird flight paths outside the survey plot that are observed opportunistically will be recorded for use in identifying high use areas, but not included in mean use comparisons and estimates generated from the point count surveys. The viewshed within the 800-m radius buffer of each point as well as within a larger buffer of maximum viewshed surrounding each point will be overlaid with a grid of 100 m x 100 m cells. Mapped eagle flight paths will be used to assign use intensity levels for each cell within the grid to determine areas of relatively high, moderate, or low eagle use. USGS 1:24,000-scale topographic maps on the data sheets will be used to map locations of eagle and raptor observations.

Behavior and habitat will be recorded for each eagle and raptor observation. Behavior categories include perched, circling/soaring, flapping, active hunting, gliding, hovering, vocalizing, aggression, and other (noted in comments). Habitat over which each observation is made will be recorded and include shrub, grassland, riparian, open water, forest/woodlot, rocky outcrop, developed, and other (noted in comments). Weather information recorded for each survey point will include temperature, wind speed, wind direction and cloud cover. Behavior categories will be used to aid in estimating of the proportion of eagles and raptors observed that were actively migrating versus resident birds. Flight paths and locations of perched birds will be recorded in the field on the data sheet maps and will be digitized using ArcGIS 9.3 for use in spatial analyses and mapping.

Analysis

Bird Diversity and Species Richness - Bird diversity will be represented by the total number of unique species observed. Species lists, with the number of observations and the number of groups, will be generated by season. Species richness will be calculated as the mean number of raptor species observed per survey.

Bird Use, Composition, and Frequency of Occurrence – Eagle and raptor use will be calculated as the mean number of individuals observed per 60-minute survey within the 800 m radius plot. These types of metrics allow standardized comparison between sample locations, time (hours, days, weeks, seasons), or with other studies where similar data exist. Due to the unlimited viewshed used in the surveys, the distribution of distances from the observer recorded in the field will be evaluated to determine the estimated percent of observations of birds passing through the project area. In order to compare to other studies and to estimate the eagle risk metric, the distance from observer will be used to standardized observations within the 800-m radius plot. The frequency of occurrence is calculated as the percent of

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surveys in which a particular species is observed. Percent composition is calculated as the proportion of the overall raptor or eagle use that is attributable to a particular species or bird type.

Bird Flight Height and Behavior - To calculate potential risk to flying birds, the first flight height recorded will be used to estimate the percentage of birds flying within the rotor-swept height (RSH) for potential collision with turbine blades. If the turbine type for the project is known the specific RSH for that turbine will be used in the analysis. If it is unknown a generic RSH of 25 m to 150 m AGL, will be used, which is representative of typical turbine options used in modern wind projects.

Spatial Use – Spatial patterns in eagle and raptor use in the study area will be analyzed by comparing use and observations among survey plots. Mapped flight paths may be compared to project area features such as topographic features, waterbodies, ridgelines, etc. to investigate the presence of raptor or eagle use concentrations.

Bald Eagle Risk Calculations – The estimate of bald eagle take due to the project will follow the USFWS ECPG methods (USFWS 2013).

Exposure Rate

Exposure rate (λ), as defined by the USFWS (2013), is the expected number of flight minutes below 200 m per daylight hour across the surveyed area (km^2). A ***Gamma***($\alpha = 0.97, \beta = 2.76$) prior distribution with mean (0.35) and standard deviation (0.357) is recommended by the USFWS. A posterior distribution of bald eagle use at the Project will be estimated as a ***Gamma*** distribution with the α parameter equal to the sum of the prior α and total flight minutes below 200 m, and the β parameter equal to the sum of the prior β and effort (hours of surveys x km^2 of area surveyed) respectively:

$$\text{Posterior } \lambda \sim \text{Gamma}[\alpha + (U_{GE})(n_{\text{surveys}})(\text{flight minutes}), \beta + (\text{survey length in hrs}) \cdot (n_{\text{surveys}}) \cdot 2.01]$$

Expansion Factor

A facility-specific expansion factor is multiplied by the eagle exposure rate ($\frac{\text{eagle flight minutes}}{\text{hour} \cdot \text{km}^2}$) to estimate the potential annual eagle-wind turbine interactions (minutes of flight within the turbine hazardous area). The expansion factor scales the exposure rate to daylight hours (τ) within the seasons that surveys were conducted across the total hazardous areas (δ_i) surrounding all proposed turbines (n_t ; USFWS 2013):

The USFWS has defined the turbine hazardous area (δ_i) as the rotor-swept area around each turbine or proposed turbine location (km^2 ; USFWS 2013).

$$\varepsilon = \tau \sum_{i=1}^{n_t} \delta_i$$

Collision Correction Factor

The collision correction factor (collision probability; C) is defined as the probability of an eagle colliding with a turbine given each minute of eagle flight in the turbine hazardous area. The prior distribution for collision probability was developed by the USFWS using the four previous fatality studies reported in Whitfield (2009). A weighted mean of the estimated flight minutes within the turbine hazardous area

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versus recorded collision events at those facilities is used to determine a *Beta*(2.31,396.69) prior distribution for collision probability (USFWS 2013).

Estimation of Take

The USFWS Bayesian collision risk model (USFWS 2013) assumes that higher site-specific eagle flight activity will correspond to higher annual eagle mortality once the wind energy facility is operational. Under this assumption, predictions of annual eagle mortality (*F*) will be modeled as the pre-construction measure of eagle exposure (*λ*) within areas of potential eagle-wind turbine interactions (*ε*) multiplied by a collision correction factor (*C*):

$$F = \epsilon\lambda C$$

Credible intervals (i.e., a Bayesian confidence interval) will be calculated using a simulation of 100,000 Monte Carlo draws from the posterior distribution of eagle exposure (*λ*) and the collision probability distribution (*C*; Manly 1991). The product of each of these draws with the exposure area is used to estimate the distribution of possible eagle fatality at the Project. The upper 80th percentile of this distribution has been recommended by the USFWS as the estimated take for a proposed project (USFWS 2013).

2.6 RAPTOR NEST SURVEYS

2.6.1 Surveys Completed for Project

No surveys have been completed for the Project.

Based on review of the MDIFW database of bald eagle (*Haliaeetus leucocephalus*) nests in Maine, one bald eagle nest is located within 10 miles of the latest proposed turbine layout. This nest, #518A on Arnold Brook Lake in Presque Isle, is located approximately 9 miles from the northernmost turbines in the proposed layout. No other nests are located within 10 miles. There are no mapped nests within 3 miles of either generator lead segment. The closest mapped nest is nest #372B on the Meduxnekeag River, which is approximately 3.7 miles from the generator lead south.

2.6.2 Additional Surveys Planned

Aerial surveys for bald eagle nests within 10 miles of the proposed turbine locations will be conducted during the spring of 2014.

2.6.3 Survey Protocol

The objective of the raptor nest survey is to locate raptor nests that may be subjected to disturbance and/or displacement effects from the construction and/or operation of the project and from which raptors or their offspring may use the project area and region around the project area. The nest survey will gather information on raptors nesting in the area, including nest locations, nest habitat and substrates, and nesting status.

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Survey Area

The raptor nest survey will cover the project area and the area within ten miles of the proposed project turbines locations.

Survey Schedule

Surveys will be conducted over the course of a breeding season and will include two aerial surveys conducted at proper chronological time periods based on seasonal use by raptors in the region. One survey will be conducted in the second half of April, based on recommendations from the MDIFW and when eagles in the project area are likely tending to nests, initiating egg laying, or incubating eggs. A second aerial survey will be conducted in the period from late-May to mid-June of 2014 when the detection of chicks and/or fledglings is capable, providing information on nesting status and productivity.

Survey Methods

Aerial surveys will be conducted via helicopter, within the survey area per USFWS guidance (USFWS 2013). Surveys will be conducted by two qualified biologists with experience surveying for eagles and other raptor nests. During the first flight, all occupied and unoccupied nests identified will be recorded. Basic nest use will be categorized as follows: (1) Unoccupied - a nest with no evidence of recent use, or attendance by adult eagles; (2) Occupied - a nest site, or series of supernumerary nests within a 1-km radius, that revealed recent refurbishing (greenery, recent egg cup), and/or is represented by one or more adults on, or immediately adjacent to, nest structure(s).

Survey efforts will be targeted in areas of suitable raptor and eagle nesting substrate within each respective survey area. Suitable nesting structure for eagles include rocky outcrops, steep cliffs, mature conifer or deciduous trees, and utility poles. Suitable nesting structure for other raptors are similar, but may include other structures such as power poles, smaller trees, knolls and ridges, and other artificial structures that might be present. It is understood that nests of some raptor species are small and/or difficult to detect and may be missed using aerial survey techniques. It is also likely that some species that nest in coniferous trees may be difficult to detect and may be underrepresented in the survey.

The second flight will be conducted to determine productivity of occupied eagle and raptor nests found during the first survey. The second survey will only be of the located nests and will not be used to search for new nests; however, any new nests found during the second survey will be recorded. Nest productivity will be categorized as (1) Successful - a nest that fledged at least one young; (2) Unsuccessful - a nest known to have been active based on evidence from the first survey, but displays addled/infertile eggs, a destroyed clutch, dead young, or is empty at a period when dependent young should be present (Steenhof and Kochert 1982). Breeding success is defined as at least one chick observed to be at least 51 days old (Pagel et al. 2010). Unsuccessful breeding is defined as a nesting attempt that failed after eggs were laid (Pagel et al. 2010).

Analysis

Following the first survey flight, territory occupation status will tentatively be assigned to suspected eagle territories. Nesting territory boundaries will not be delineated; however, nest locations will yield

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information suggestive of the approximate territory locations and centers of eagle breeding territories based on nest site occupancy and clustering of nests.

The following metrics for nesting eagles will include:

1. Number and locations of nest structures that are verified or likely to be eagle nests;
2. Number and locations of eagle nests currently or recently occupied based on criteria outlined herein;
3. Estimated number and approximate boundaries and centers of eagle breeding territories, based on records of nest site occupancy and clustering of nests.

With regard to the eagle portion of this survey, accurate comprehension of territory distribution and determination of occupancy status is a primary goal of the nesting surveys. Data collected during the inventory of territories located within the survey area will include documenting the status of each territory as: Occupied, Unoccupied, Unknown, and Vacant.

Location, species, annual status, productivity assessment, nest substrate, nest condition, and close-up and landscape photos will be provided for each documented nest. Data on habitat, nest elevation, age class of eagles observed, and nesting chronology will be recorded to the extent possible.

All nest locations will be recorded using hand held global positioning system (GPS) devices and mapped using Geographical Information System (GIS) software. Nesting productivity will be summarized to provide baseline information on the reproductive output of the local eagle population.

2.7 GREAT-BLUE HERON NEST SURVEYS

2.7.1 Surveys Completed for Project

No surveys have been completed for the Project.

2.7.2 Additional Surveys Planned

Aerial surveys for great blue heron rookeries within 4 miles of the proposed turbine locations will be conducted during the spring of 2014.

2.7.3 Survey Protocol

The objective of great blue heron (*Ardea herodias*) surveys is to locate heron colonies, more specifically the heronry or nesting area, that may be subjected to disturbance and/or displacement effects from the construction and/or operation of the project and from which herons or their offspring may use the project area and region around the project area. Data gathered from these surveys will help MDIFW to evaluate trends among the inland breeding populations; as the coastal island populations have seen declines in breeding over the past 30 years, resulting in the species being categorized as a species of special concern in Maine (MDIFW no date).

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Survey Area

The heron colony survey will cover the Project area and the area within 4 miles around the proposed Project turbines.

Survey Schedule

The surveys for great blue heron will be coordinated to coincide with the timing of the productivity survey for raptors (see above); late-May to mid-June of 2014.

Survey Methods

Surveys will be conducted in accordance to MDIFW Great Blue Heron Colony Surveys for Potential Wind Power Projects (MDIFW unpublished document). Surveys will be conducted via helicopter within the survey area, flying at elevations between 200 and 500 feet above ground level searching both wetland and upland areas for colonies.

Analysis

All nest locations will be recorded using hand held global positioning system (GPS) devices and mapped using Geographical Information System (GIS) software. All occupied and unoccupied nests identified during the surveys will be recorded. Basic nest use will be categorized as follows: (1) Unoccupied - a nest with no evidence of recent use, or attendance by adult herons; (2) Occupied - a nest site that revealed recent refurbishing (greenery, recent egg cup), and/or is represented by one or more adults on or immediately adjacent to, nest structure(s).

The following metrics for nesting herons will include:

1. Number and locations of nest structures that are verified to be herons;
2. Number and locations of heron nests currently or recently occupied based on criteria outlined herein;
3. The diversity of nesting colonial wading birds observed at heronry locations including; egrets, ibis, and night heron.

Location, species, annual status, nest substrate, nest condition, and close-up and landscape photos will be provided for each documented nest. Because heron colonies range in size from 5-500 nests it may not always be possible to get photographs of individual nests, rather a landscape photograph of the entire heronry will be provided.

2.8 CANADA LYNX SURVEYS

The entire turbine area and portions of the generator lead north corridor are located within mapped Critical Habitat for Canada lynx (*Lynx canadensis*). Surveys include desktop habitat assessment as well as winter tracking surveys, both of which will be conducted in compliance with MDIFW and USFWS agency **recommendations and protocols, including MDIFW's Western Mountain Eco-Regional Lynx Track Survey protocol.**

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2.8.1 Surveys Completed for Project

Prior to January 2014, no surveys had been completed for the Project.

2.8.2 Additional Surveys Planned

In winter 2014, Stantec will conduct an initial desktop habitat mapping assessment and will conduct a series of 3 snow track surveys within the Project area.

2.8.3 Survey Protocol – Desktop Habitat Assessment

Stantec will use remote sensing to conduct a desktop landscape analysis of the townships in the Project area that are located within Critical Habitat for lynx. The purpose of this task will be to identify habitats within the survey area suitable for snowshoe hare habitat, which is strongly associated with lynx presence. This assessment will provide preliminary information for discussions with agencies, particularly related to the potential presence of lynx.

Survey Area

Stantec will conduct a lynx snow tracking survey within 1 mile of proposed turbine locations, in areas where landowner permission has been obtained. The survey area for the desktop analysis includes 5 townships: E Township, T9R3, TDR2, T8R3, and Hammond Township. In addition, the generator lead may cross small portions of TCR2 and Dudley Township, and the area within one-quarter mile on either side of the centerline of the proposed generator lead will also be included in the assessment.

Survey Schedule

Desktop analysis conducted during winter 2014 and spot checked in the field during tracking surveys.

Survey Methods

Stantec will review available digital aerial orthophotos from the fall of 2013, as provided by EDPR. This imagery is comprised of true color, high resolution digital aerial photos assembled into a geo-referenced orthophoto covering the townships in which the project is located. The imagery will be viewed on-screen in 2-D using CAD or GIS software. The 2013 photo imagery will be supplemented with National Wetland Inventory (NWI) and GoogleEarth imagery, dating back to 1996, to help enable a more accurate analysis of site conditions.

Habitat types known to be preferred by snowshoe hare (*Lepus americanus*) and lynx will be identified on the imagery and digitized into polygons representing potential high-value, moderate-value, and future habitats, as existing at the time the imagery was collected. These preferred habitats typically include dense stands of regenerating coniferous forest that provide food and cover for snowshoe hare. Dense deciduous and mixed coniferous-deciduous regenerating stands may also provide conditions suitable for snowshoe hare, and as such will be included in the mapping of potential lynx habitat. Only those habitat types of at least 2 acres in size that appear to provide conditions suitable for snowshoe hare will be mapped. Apparent variations in stand density, vegetation height and age, and overall stand size generally dictate whether the mapped polygons will be classified as having moderate or high value as potential

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lynx/snowshoe hare habitat. Habitat polygons that appear to have the potential for developing into moderate or high-value habitats in the next 5–15 years will be considered future habitats. Polygons depicting the 3 habitat classifications will be color-coded and maintained on separate GIS data layers for analysis and map presentation purposes.

Polygons identified as high or moderate-value during the desktop analysis will be spot checked in the field to determine actual habitat value based on vegetative conditions.

Analysis

A brief narrative report of methodology and reports will be prepared, including tables and maps that summarize habitat categories and illustrate lynx use in relation to the anticipated project area.

2.8.4 Survey Protocol – Tracking Surveys

Stantec will conduct a lynx snow tracking survey during winter 2014. The purpose of the survey will be to investigate the project area for signs of lynx use based on presence of tracks, scat, or other observable signs of use.

Survey Area

Lynx snow tracking surveys will be conducted within one mile of proposed turbine locations in areas where landowner permission has been confirmed.

Survey Schedule

The survey will include up to 3 separate visits to the project area between January and March 2014 to conduct up to 12 days of lynx winter tracking field surveys. Surveys will be conducted within 24 to 72 hours after a recent snow event to ensure that detected tracks detected are fresh and have not been altered by wind or warm temperatures. The first survey planned for January will depend on the timing of the first snow storm. The remaining 2 surveys will occur mid- to late winter and are subject to appropriate, fresh snow conditions.

Survey Methods

Where landowner permission exists, attempts will be made to survey all passable, unplowed roads and trails within the 1-mile survey area. Biologists with experience in snow and animal tracking will drive the roadways at a sufficiently slow speed to allow accurate track identification. A GPS track log will be maintained during the survey to document the route course and total survey effort. A GPS point will also be collected for every individual lynx found to be crossing the survey route.

Three sets of track measurements including footprint length and width, track stride and straddle, as well as sinking depth, and direction of forward travel will be recorded for each individual lynx track intercept. **Track quality will be recorded following the MDIFW's Track Quality rating system**, which ranges from a rating of 4, where every footprint leaves a clear track; to the poorest quality rating of 0 where gait pattern is difficult to determine. Multiple photographs documenting stride, straddle, and footprint detail will be collected for each track. Habitat data will also be collected, and will include cover type, height of canopy,

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and relative density. Efforts will be made in areas with numerous crossings to determine if multiple lynx are crossing, or if one lynx is crossing several times. Where multiple lynx are confirmed, a GPS point will be collected for each lynx track.

When time allows, lynx tracks will be followed (primarily back-tracked) in order to search for scat and DNA samples (scat or hair), and to record behavioral data, including beds, scent marking, prey chasing, or kill sites. GPS track logs, locations of scat and other sign, and pertinent behavioral data will also be recorded. DNA samples scat or collections of hairs found in beds will be sent for DNA lab testing to provide more detailed information on determine the gender and number of individuals and gender. DNA samples will be preserved and prepared according USDA Rocky Mountain Research Station Wildlife Genetics Lab protocols.

Analysis

A brief narrative report of methodology and reports will be prepared, including tables and maps that summarize habitat categories and illustrate lynx use in relation to the anticipated project area.

2.9 DEER-WINTERING AREA SURVEYS

The Generator Lead South crosses a Deer Wintering Area (DWA) in 2 locations. There are no mapped DWAs along the Generator Lead North and although DWA are located near proposed turbine areas, none are mapped in areas where there are likely to be impacts associated with the Project.

2.9.1 Surveys Completed for Project

Prior to January 2014, no surveys had been completed for the Project.

2.9.2 Additional Surveys Planned

A field survey of mapped deer wintering areas will be conducted in winter 2014, if landowner permission is obtained.

2.9.3 Survey Protocol

DWA surveys will be completed between January 1 and April 15, based on MDIFW recommended protocol. Suitable survey conditions **include a snow depth of greater than 12” in open or hardwood forests,** or a sinking **depth of greater than 8”**, and an average daily temperature below 32° F. Survey conditions should include evidence of typical winter deer behavior, such as deer trails and beds, as well as suitable snow conditions to observe sign of deer use. Data collection includes weather conditions, snow depth, forest stand type, deer use (trails, tracks, beds, pellets and browsing), and general landscape characteristics along standard intervals.

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2.10 OTHER WILDLIFE

Based on available data and desktop review of habitat in the project area, it is unlikely that including Bicknell's thrush (*Catharus bicknelli*), roaring brook mayfly (*Epeorus frisoni*), northern spring salamander (*Gyrinophilus porphyriticus*), or northern bog lemming (*Synaptomys borealis*) will be present in the Project area.

The elevations in the project area for proposed turbine locations range from 809' to 1300'. All of the project area is lower than 2,700' in elevation, the elevation at which MDIFW recommends surveys for Bicknell's thrush. The majority of the project area is also lower than 1000', the elevation at which MDIFW recommends surveys for roaring brook mayfly and northern spring salamander.⁵ Although limited information is available about the specific habitat requirements of northern bog lemming, MDIFW indicates that the species is known to occur in moist, wet meadows or boggy areas often in alpine settings or spruce-fir forests⁶. The amount of disturbance to wetlands from timber harvesting within the project area likely limits the presence of potential bog lemming habitat.

The project area does not include any infrastructure within 2 miles of St. Croix Stream, which is the nearest location with other documented species of special concern.

2.10.1 Surveys Completed for Project

No surveys conducted.

2.10.2 Additional Surveys Planned

No surveys planned.

2.10.3 Survey Protocol

Not Applicable.

⁵ The MDIFW did not recommend any surveys for these species (email from John Perry, March 20, 2014).

⁶ http://www.maine.gov/ifw/wildlife/endangered/pdfs/northernboglemming_26_27.pdf

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3.0 Terrestrial Surveys

A variety of terrestrial field surveys have been conducted within the Project area. These surveys, along with additional planned surveys, are described below.

3.1 WETLAND DELINEATION

3.1.1 Surveys Completed for Project

As described in Table 2, wetland delineations were conducted by HDR between 2008 and 2010 in the turbine area and by CES along the Generator Lead South in 2008.

Table 3. Summary of Wetland Delineations Completed for Number Nine Project

Location	Surveys Completed
Turbine Area	- Wetland and stream delineation conducted around previous turbine layout between 2008 and 2010
Generator Lead North (Turbines to Houlton)	- No surveys completed
Generator Lead South (Houlton to Haynesville)	- Wetland and stream delineation performed along length of line in 2008

3.1.2 Additional Surveys Planned

Additional wetland delineation efforts will be required for the Project. Wetland delineations have not been conducted on the generator lead north or in portions of the turbine area where the turbine layout has changed. The scope and location of wetland delineation efforts in areas that have been previously delineated will be determined by the available data from previous delineation efforts.

3.1.3 Survey Protocol

In spring-summer 2014, Stantec will identify and characterize jurisdictional wetlands within the Project area. Portions of the Project may only require that wetland boundaries be verified, depending on the quality of data collected from previous delineations. The areas to be surveyed and/or verified will be finalized prior to the initiation of field work, as described above.

Wetland boundaries under local, state, and federal jurisdiction will be determined using the technical criteria described in the 1987 *Corps of Engineers Wetland Delineation Manual* and the *2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* and any specific criteria contained in local land use ordinances. Wetland boundaries will be marked with numbered survey flagging and photographs will be taken of each resource. Corps Wetland Determination Data Forms will be completed throughout the survey area as part of the delineation process. Streams and Wetlands of Special Significance under the jurisdiction of the MDEP will be identified based on the criteria in the Maine NRPA. Stantec will also document the dominant wetland functions and values that

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are present in the variety of wetland types found throughout the project area using the Corps' *Highway Methodology Workbook: Wetland Functions and Values, A Descriptive Approach*.

Stantec will survey wetland boundaries, and necessary control points using a Global Positioning System (GPS) Trimble® GeoXH 6000 series with Trimble® TerraSync software. GPS survey data will be downloaded and processed using AutoDesk Civil 3D version 2011, and the data (AutoCAD and ESRI shape files) will be provided to the design team for use with engineering site plans. During reporting, maps will be produced showing the wetland boundaries in relation to other natural resources and control points such as roads, utility poles, or property boundary markers.

Appropriate delineation boundaries will be applied to all Project components, including proposed turbines, access roads, collector lines, both segments of generator lead, and other associated Project infrastructure. Because a final turbine layout and design has not been established, a larger area of wetland delineation will be surveyed to allow for micro-siting of Project components to avoid identified natural resources during the design phase.

3.2 VERNAL POOL SURVEYS

3.2.1 Surveys Completed for Project

As described in Table 3, vernal pool surveys were conducted by HDR between 2008 and 2010 in the turbine area and by CES along the generator lead south in 2008.

Table 4. Summary of Vernal Pool Surveys conducted for the Number Nine Project

Location	Surveys Completed
Turbine Area	- Vernal pool surveys conducted around previous turbine layout between 2008 and 2010
Generator Lead North (Turbines to Houlton)	- Surveys not conducted.
Generator Lead South (Houlton to Haynesville)	- Vernal pool surveys conducted along length of line in 2008

3.2.2 Additional Surveys Planned

Additional vernal pool surveys will be required for the Project. Vernal pool surveys have not been conducted on the generator lead north or in portions of the turbine area where the turbine layout has changed. The scope and location of vernal pool survey efforts in areas that have been previously surveyed will be determined by the available data from previous vernal pool surveys.

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3.2.3 Survey Protocol

Stantec will conduct vernal pool surveys during the 2014 spring season to identify and evaluate vernal pools within the project area. The areas to be surveyed will be finalized prior to the initiation of field work, as described in Section 4.2.2 above. The vernal pool survey will be conducted in accordance with the *Maine Association of Wetland Scientists' 2011 Interim Vernal Pool Survey Protocol* (March 24, 2011), as well as the definitions set forth in Chapter 335, Significant Wildlife Habitat, of the Maine NRPA. Vernal pools that may be potentially regulated by the Corps, including man-made features, will also be identified and assessed during these surveys. Vernal pool identification will involve recording the presence and number of amphibian egg masses or other evidence of breeding activity and the presence of other vernal pool-associated species.

Stantec will implement the following field protocol during vernal pool surveys:

- Stantec will locate the boundaries of the vernal pools using a GPS Trimble® GeoXH 6000 series with Trimble® TerraSync software.
- Stantec will take representative photographs of each pool, and will record notes summarizing the characteristics of the vernal pools and their regulatory status.
- We will collect data necessary to complete Maine State Vernal Pool Assessment Forms at the time of the survey.
- GPS survey data will be downloaded and processed using AutoDesk Civil 3D version 2011, and the data (AutoCAD and ESRI shape files) will be provided to the team for use with project design.

Stantec will conduct at least two separate visits to vernal pools to capture the peak breeding period of obligate vernal pool species, as required by MDIFW and MDEP.

- First Visit: The first visit likely will be conducted during the second or third week of May to coincide with the wood frog (*Lithobates sylvatica*) breeding season in Northern Maine.
- Second Visit: The second visit will take place approximately two weeks after the first visit and will be timed to capture the peak breeding period for spotted salamanders (*Ambystoma maculatum*).

Second visits will be conducted to select vernal pools based on the results of the first site visits, the physical characteristics of each pool identified during the first visits, and the regulatory requirements of the Maine NRPA and the Corps GP.

3.3 RARE, THREATENED, AND ENDANGERED PLANT SURVEYS

3.3.1 Surveys Completed for Project

Rare, threatened, and endangered (RTE) plant species surveys were conducted in 2008 along the generator lead south, but have not been conducted in any other portions of the Project area.

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3.3.2 Additional Surveys Planned

RTE surveys will be required throughout the Project area. While RTE surveys were performed on the generator lead south in 2008, these data are now more than 5 years old and these surveys should be repeated in 2014. Therefore, the entire Project area will be surveyed for RTE plant species.

3.3.3 Survey Protocol

The RTE survey will be conducted within the turbine area and along both segments of generator lead. In order to focus the field survey efforts, a desktop analysis will be performed prior to conducting the field survey to identify the species and habitats that may be present within the Project area. Field surveys will then be performed to identify RTE species that may be present in the Project area. Field survey locations will be targeted based on the results of the desktop analysis. RTE species locations will be GPS-located at the time of the survey.

Field surveys will be conducted under suitable growing season conditions when most potential RTE plant species would be identifiable. Habitat conditions will be evaluated during the field survey to determine potential suitability for species with ephemeral phenologies that may be present in the Project area but may not be evident. Targeted field surveys at alternate times in the growing season may be required to identify these species.

Stantec will prepare a brief narrative report describing the results of the survey. The report will include a map showing the locations of any documented RTE species.

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4.0 References

Maine Department of Inland Fisheries and Wildlife (MDIFW). No date. Great Blue Heron Colony Surveys for Potential Wind Power Projects.

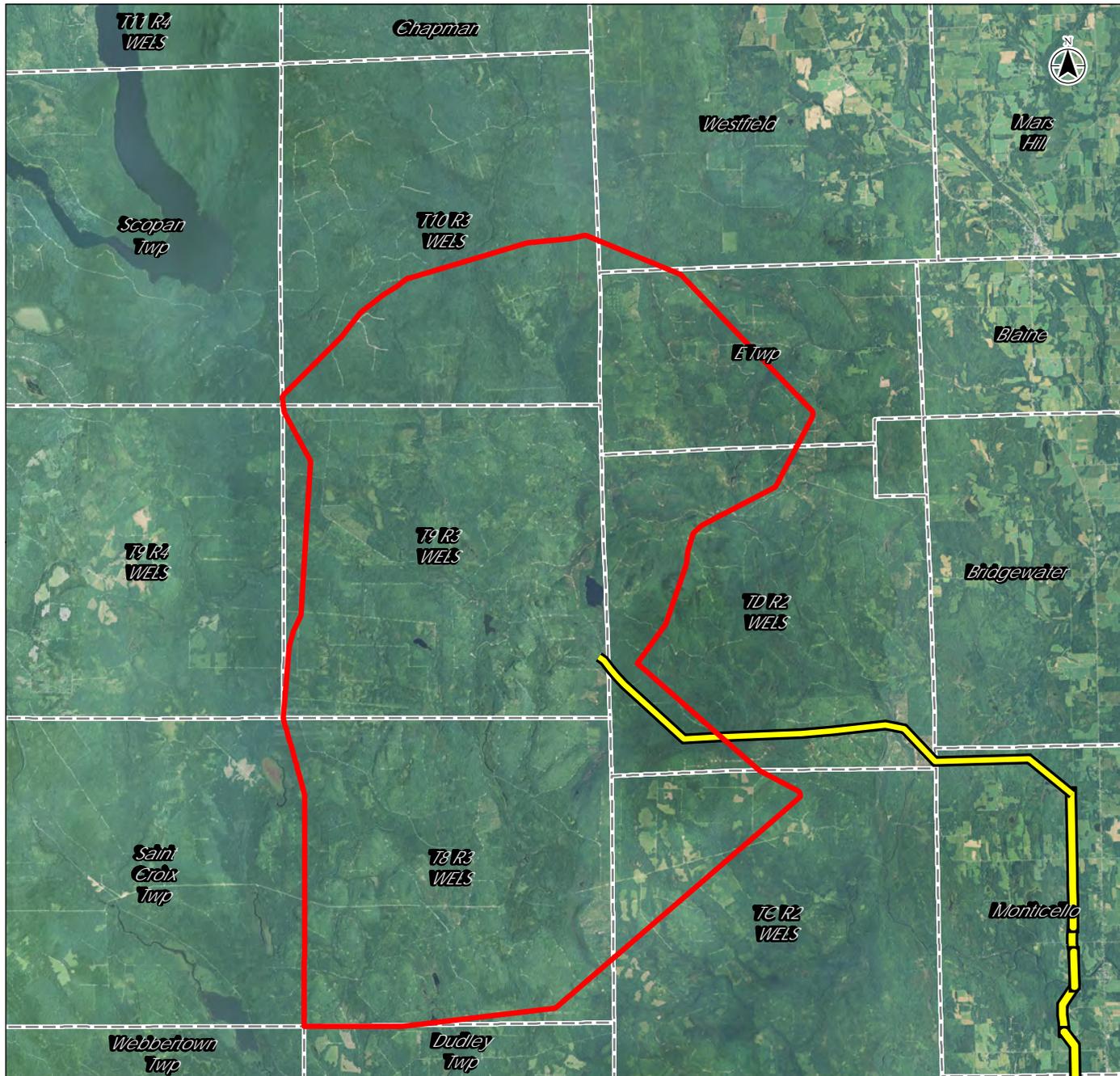
Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim golden eagle inventory and monitoring protocols; and other recommendations. Division of Migratory Bird Management, U.S. Fish and Wildlife Service.

Steenhof, K. and M.N. Kochert. 1982. An evaluation of methods used to estimate raptor nesting success. *Journal of Wildlife Management* 46:885–893.

U.S. Fish and Wildlife Service [USFWS]. 2012. U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines - Recommendations on Measures to Avoid, Minimize, and Compensate for Effects to Fish, Wildlife, and Their Habitats.
http://www.fws.gov/windenergy/docs/Wind_Energy_Guidelines_2_15_2011FINAL.pdf

Whitfield, DP. 2009. **Collision avoidance of golden eagles at wind farms under the ‘Band’ collision risk model.** Report from Natural Research to Scottish Natural Heritage. Natural Research Ltd, Banchory.

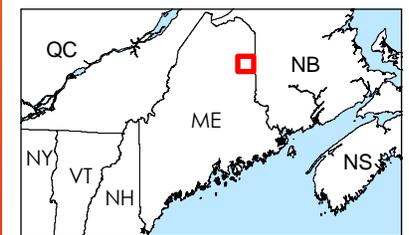
V:\GIS\arcgis\1066029\1066029\main\main\Agency_Consult\10141402\009_T101_Project_Area_A332.mxd - 10/14/14 10:11 AM By: djf@stantec.com



- Legend**
- Approximate Project Area for Turbines
 - Generator Lead - Segment 1
 - Generator Lead - Segment 2
 - Town Boundary



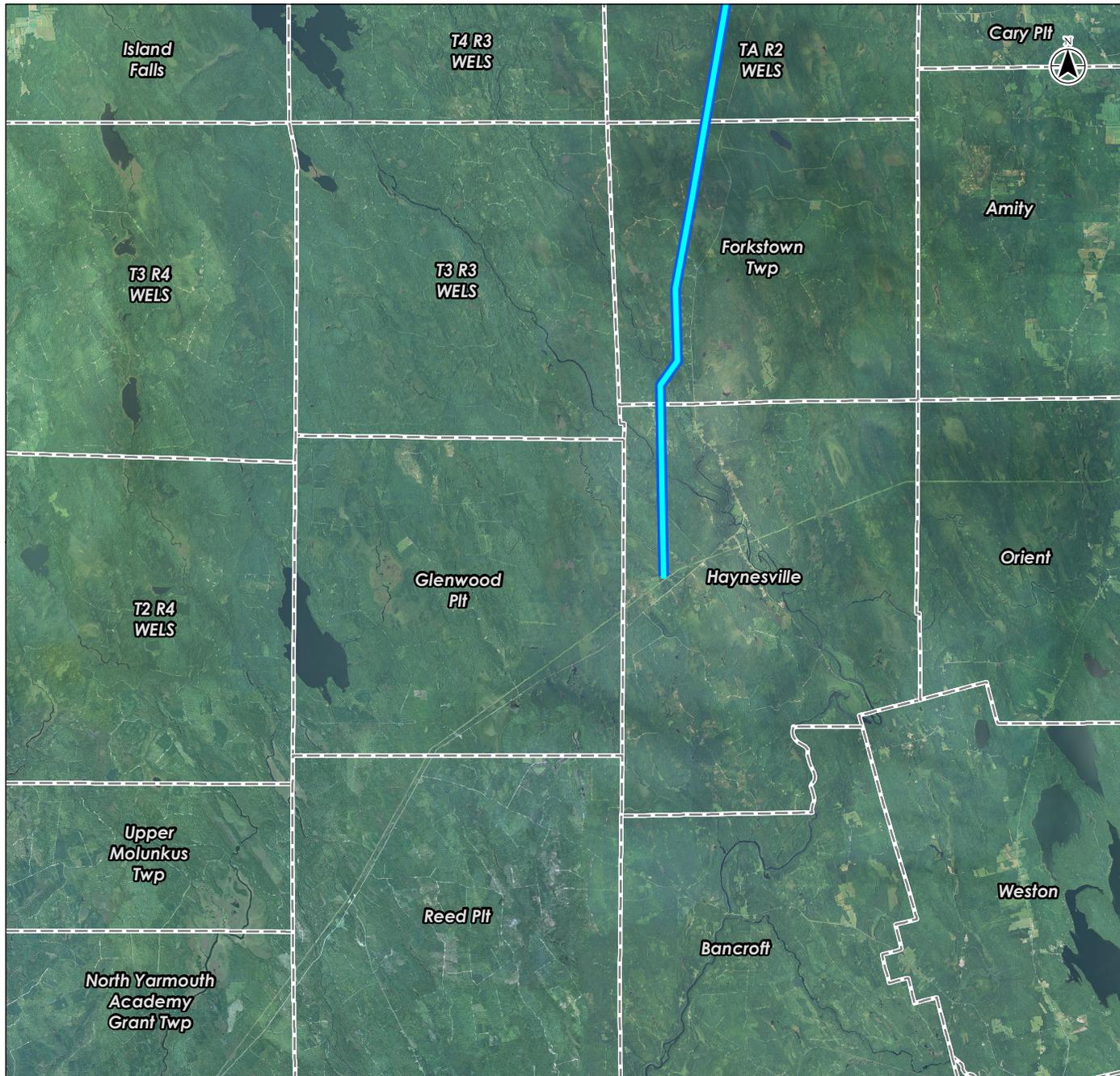
- Notes**
1. Coordinate System: NAD 1983 StatePlane Maine East FIPS 1801 Feet
 2. Base features provided by Stantec, Maine Office of GIS (MEGIS)
 3. 2013 National Agriculture Imagery Program (NAIP) aerial orthoimagery provided by Natural Resource Conservation Service and the Farm Service Agency.



Project Location	195600919
Aroostook County, Maine	Prepared by DJL on 2014-4-2
	Technical Review by GAC on 2014-4-2
	Independent Review by JYP on 2014-4-2
Client/Project	
EDP Renewables	
Number Nine Wind Project	
Figure No.	
1	
Title	
Project Area Map	

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V:\GIS\ortho\1566829\Maine\img\maine\Agency_Consult\20140426_009_Tp_DLI_Project_Area_A32.mxd - Revised: 20141426 By: djfalcon



Legend

- Approximate Project Area for Turbines
- Generator Lead - Segment 1
- Generator Lead - Segment 2
- Town Boundary



- Notes**
1. Coordinate System: NAD 1983 StatePlane Maine East FIPS 1801 Feet
 2. Base features provided by Stantec, Maine Office of GIS (MEGIS)
 3. 2013 National Agriculture Imagery Program (NAIP) aerial orthoimagery provided by Natural Resource Conservation Service and the Farm Service Agency.



Project Location 195600919
Aroostook County, Maine Prepared by DLI on 2014-4-2
Technical Review by GAC on 2014-4-2
Independent Review by JYP on 2014-4-2

Client/Project
EDP Renewables
Number Nine Wind Project

Figure No.
3
Title
Project Area Map



Stantec

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

April 8, 2014

John Perry
Environmental Review Coordinator
Maine Department of Inland Fisheries and Wildlife
284 State Street, 41 SHS
Augusta, Maine 04333-0041

Dear Mr. Perry,

Reference: Significant Natural Resources Information Request

The purpose of this letter is to request information on any significant natural resources associated with the location depicted on the attached figures. We are assisting EDP Renewables with evaluating this site for the proposed site for the Number Nine Wind Project, including the associated generator lead.

Please review the attached maps and let me know if there are any known or suspected locations of rare, threatened, or endangered plants or wildlife, exemplary natural communities, Significant Wildlife Habitat, Registered Critical Areas, or other significant natural resources within the outlined area associated with this potential development area. Should you have any questions, please feel free to contact me.

Thank you for your assistance in obtaining this information.

Regards,

STANTEC CONSULTING SERVICES INC.

A handwritten signature in blue ink, appearing to read "Joy Prescott", with a long horizontal line extending to the right.

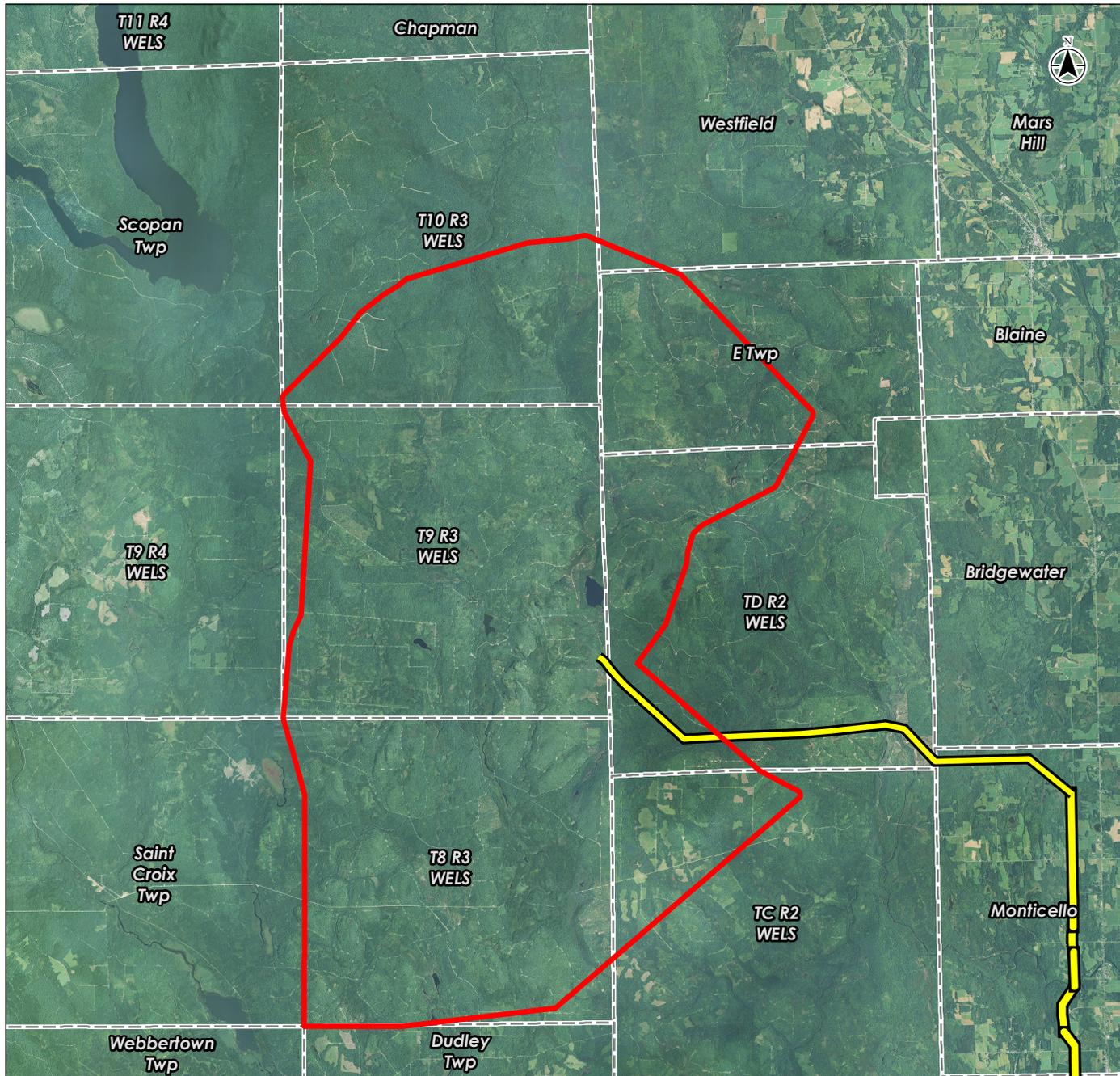
Joy Prescott
Project Manager
Phone: 207-729-1199
joy.prescott@stantec.com

Attachment: Project Area Maps

c. Katie Chapman, EDPR
Erin Johnston, EDPR
Kellen Ingalls, EDPR

File: 195600919

V:\GIS\arcgis\1066019\1066019\main\main\Agency_Consult\101414\001_000_Tp_DLI_Project_Area_A332.mxd 8/26/2014 10:42:07 AM By: djf@stantec.com



Legend

- Approximate Project Area for Turbines
- Generator Lead - Segment 1
- Generator Lead - Segment 2
- Town Boundary



- Notes**
1. Coordinate System: NAD 1983 StatePlane Maine East FIPS 1801 Feet
 2. Base features provided by Stantec, Maine Office of GIS (MEGIS)
 3. 2013 National Agriculture Imagery Program (NAIP) aerial orthoimagery provided by Natural Resource Conservation Service and the Farm Service Agency.



Project Location: Aroostook County, Maine 195600919
 Prepared by DJI on 2014-4-2
 Technical Review by GAC on 2014-4-2
 Independent Review by JYP on 2014-4-2

Client/Project:
 EDP Renewables
 Number Nine Wind Project

Figure No. **1**
 Title **Project Area Map**

CONSULTATION SUMMARY

General Consultation

Date	Topic	Page
• 10/15/13 email	2008 Baseline Wildlife Study Report Submission	4
• 3/3/14 email	Proposed Workplan Submission	7
• 3/5/14 mtg	Project Kick-Off and Workplan Discussion	9
• 3/20/14 email	Comments from MDIFW on Project Kick-Off	20
• 10/27-28/14	Site Visit	70
• 10/7/14 mtg	MDIFW Check-In Status Call	81
• 10/20/14 mtg	MDIFW Check-In Status Call	83
• 11/03/14 mtg	MDIFW Check-In Status Call	85
• 11/21/14 mtg	MDIFW Check-In Status Call	87
• 12/3/14 mtg	MDIFW Check-In Status Call	89
• 12/16/14 mtg	MDIFW Check-In Status Call	90
• 1/6/15 mtg	MDIFW Check-In Status Call	91
• 1/26/15 mtg	MDIFW Check-In Status Call	92

Wetlands and Vernal Pools

Date	Topic	Page
• 5/28/14 mtg	Vernal Pool Survey Protocol	31
• 8/8/14 email	Vernal Pool Submission	36
• 8/15/14 email	Vernal Pool Submission	42
• 1/15/15 email	Comments from MDIFW on Vernal Pool forms (also related email responses on 1/20/15 and 1/21/15)	78

Significant Wildlife Habitat

Date	Topic	Page
• 2/19/14 email	Lynx Survey Protocol	5
• 3/13/14 email	Lynx Survey Protocol	16
• 9/19/14 email	Lynx Report Submission	53
• 9/19/14 email	DWA Report Submission	51

Pre-Construction Wildlife Surveys

Date	Topic	Page
• 8/22/14 email	Radar Report Submission	49
• 9/5/14 mtg	Radar Report Discussion	47
• 10/10/14 email	Radar Site Visit Request	54
• 8/15/14 email	Aerial Nest Survey Report Submission	41
• 9/4/14 mtg	Aerial Nest Survey Report Discussion	43
• 9/30/13 email	Eagle Observation Protocol and Presentation	1
• 10/1/13 mtg	Eagle Observation Protocol Discussion	1
• 10/15/13 email	Eagle Observation Survey Protocol	4
• 4/8/14 email	Eagle Observation Survey Protocol Confirmation from USFWS	28
• 12/5/14 email	Eagle Observation Survey Report Submission	73
• 10/4/13 email	MDIFW Follow-up on Raptor Migration Survey Meeting	3
• 10/15/13 email	Eagle Observation Survey Protocol	4
• 9/5/14 email	Spring Raptor Migration Survey Report Submission	46
• 10/8/14 mtg	Raptor Migration Survey Discussion	58
• 10/16/14 email	MDIFW Comments/Questions on Raptor Migration Surveys	56
• 10/24/14 email	Response to MDIFW Comments/Questions on Raptor Migration Surveys	62
• 6/16/14 email	Summer Acoustic Survey Protocol	34
• 8/13/14 mtg	Bat Survey Update and Discussion	37
• 10/17/14 email	Interim Acoustic Bat Report Submission	55
• 11/2/14 email	Northern Long-Eared Presence/Absence Survey Report Submission	72
• 12/5/14 mtg	Bat Survey Update and Discussion	74

Prescott, Joy

From: Johnston, Erin
Sent: Tuesday, October 01, 2013 9:17 AM
To: Call, Erynn
Cc: Chapman, Katie
Subject: Re: EDPR Number Nine Wind Project

Hello Erynn,

Yes, I can distribute that report.

The meeting today will focus on the eagle observation studies currently underway.

We would like to schedule an in person meeting for November, and I expect we will discuss previous environmental studies in detail at that meeting.

I look forward to talking with you.

Best,

Erin Johnston
EDP Renewables
312.533.1051 mobile
Sent from my iPhone

On Oct 1, 2013, at 9:12 AM, "Call, Erynn" <Erynn.Call@maine.gov> wrote:

Hi Erin,

Looking forward to talking with you more today. Do you have a report outlining the results of your prior environmental studies?

Thanks!
Erynn

From: Johnston, Erin [<mailto:erin.johnston@edpr.com>]
Sent: Monday, September 30, 2013 4:54 PM
To: David Young; Todd, Charlie; William Lukins; Nystrom, Sarah; mark_mccollough@fws.gov; Chapman,

Katie

Cc: Call, Erynn; Perry, John; Hoppe, Richard; DeMusz, Amanda J; Camuso, Judy

Subject: EDPR Number Nine Wind Project

Hello All,

Attached is the presentation for tomorrows Number Nine Wind Project call regarding fall 2013 eagle observation surveys.

We look forward to talking to you.

Best,

Erin

<image001.jpg>

Erin Johnston

EDP Renewables, North America

Environmental Affairs

134 N. LaSalle Street, Ste. 2050, Chicago, IL 60602

Direct 312.346.1295 x5 Cell 312.533.1051 Fax 312.820.8466

www.edpr.com www.horizonwind.com

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From: Call, Erynn [<mailto:Erynn.Call@maine.gov>]

Sent: Friday, October 04, 2013 3:20 PM

To: 'dyoung@west-inc.com'; Chapman, Katie; Johnston, Erin; wlukins@west-inc.com

Cc: Hoppe, Richard; Haskell, Shawn; Call, Erynn; DeMusz, Amanda J; Perry, John; DePue, John; Hodgman, Tom; Cordes, Robert; Frost, Frank; Boucher, Dave; VanRiper, Robert; Camuso, Judy; Mark McCollough (Mark_McCollough@fws.gov) (Mark_McCollough@fws.gov); D'Auria, Danielle

Subject: MDIFW Number 9 Meeting Notes and Information Requests

Hello David, Katie, Erin, and B.J.,

It was a pleasure speaking with you this week about the Number 9 Wind Project in Aroostook County. I'm sending along the meeting notes and information requests that will facilitate future MDIFW review. A couple of the major points are as follows:

1. To enable MDIFW to provide pre-construction guidance and comment on the value of prior environmental study data, we need to review the final reports. The prior data may need to be discounted if: a) environmental conditions have changed, and/or b) the validity of methods and final results are questionable.
2. To evaluate the raptor survey methodology (which should be done prior to initiating surveys), EDPR/WEST needs to provide a survey methodology. The PowerPoint presented at the meeting (see attached) includes insufficient information to do so.

We all look forward to further discussions of the pre-construction environmental study plans. Please feel free to contact me at any time.

Kind Regards,
Erynn

Erynn Call
Wildlife Biologist, Bird Group
Maine Dept. Inland Fisheries & Wildlife
650 State St., Bangor, ME 04401
Phone: (207) 941-4481
Cell: (906) 630-0266
Fax: (207) 941-4450

Prescott, Joy

From: Johnston, Erin

Sent: Tuesday, October 15, 2013 4:56 PM

To: Hoppe, Richard; Haskell, Shawn; DeMusz, Amanda J; Perry, John; DePue, John; Hodgman, Tom; Cordes, Robert; Frost, Frank; Boucher, Dave; VanRiper, Robert; Camuso, Judy; Mark McCollough (Mark_McCollough@fws.gov) (Mark_McCollough@fws.gov); D'Auria, Danielle; Call, Erynn (Erynn.Call@maine.gov)

Cc: Chapman, Katie; David Young (dyoung@west-inc.com); William Lukins (wlukins@west-inc.com)

Subject: Number Nine - eagle study protocol and 2008 baseline study report

Hello All,

Attached are the Number Nine Wind Farm draft eagle and raptor study protocol and the 2008 baseline wildlife study report for your review.

I should note that the 2008 report is in draft form. The report was written just before the project was delayed back in 2009/2010 and hence was never finalized. Because the report is nearly 5 years old, we do not intend to finalize the report but rather will draw on the data gathered for future analysis.

Please let me know if you have any questions or comments, and I look forward to discussing the Number Nine project with you further.

Best,
Erin



Erin Johnston

EDP Renewables, North America

Environmental Affairs

134 N. LaSalle Street, Ste. 2050, Chicago, IL 60602

Direct 312.346.1295 x5 Cell 312.533.1051 Fax 312.820.8466

www.edpr.com www.horizonwind.com

Take action. Use energy efficient products.

Prescott, Joy

From: Gravel, Adam
Sent: Wednesday, February 19, 2014 3:50 PM
To: robert.d.stratton@maine.gov; John.Perry@maine.gov; Jennifer.Vashon@maine.gov
Cc: Boyden, Sarah; Prescott, Joy; Pelletier, Steve
Subject: EDPR Number Nine Wind Project - Lynx Protocol
Attachments: Lynx Snow Tracking Approximate Survey Area.pdf

Hi Jen, John, and Bob,

This email follows a phone conversation I had with Bob a couple weeks ago regarding the lynx survey protocol that we just recently implemented at the Number Nine Wind Project (we have conducted 1 round of surveys to date). Sorry for the delay getting back to you but wanted to make sure we had the most recent map of the project (attached) to share with you as well. Given the seasonality of the Lynx tracking effort we wanted to provide you with our proposed survey plan sooner than later. Joy Prescott of our office has also coordinated with John to set up a meeting in with you in early March to discuss the project as a whole and other potential studies in the near term. Please let us know if you have questions or comments to the protocol described below. This protocol was developed based on the Western Mountains Eco-Regional Lynx Track Survey Protocol.

Any lynx snow tracking surveys will be conducted within one mile of proposed turbine locations in areas where landowner permission has been confirmed (the attached map depicts the approximate project location and approximate survey area).

The purpose of the survey will be to investigate the project area for signs of lynx use, including presence of tracks or scat.

The survey will include three visits to the project area between January and March 2014 to conduct up to 12 days of lynx winter tracking field surveys. The surveys will be conducted by snowmobile and will focus on passable roads and trails within one mile of proposed turbine locations. Surveys will be initiated within 24 to 72 hours after a recent snow event to ensure that tracks detected are fresh and have not been altered by wind or sun.

Any observed lynx tracks will be photographed and paw size, stride, and gait will be measured. Lynx tracks will be followed (back-tracked) in order to search for beds and scat. Any scat or collections of hairs found in beds will be sent for DNA lab testing to determine number of individuals and gender.

A brief narrative report of methodology and reports will be prepared, including tables and maps that illustrate an analysis of lynx usage in relation to the anticipated project area.

Thanks,
Adam

Adam Gravel, CWB

Associate
Stantec
30 Park Drive Topsham ME 04086
Phone: 207-729-1199 ext 107
Cell: 207-837-0948
Fax: 207-729-2715
adam.gravel@stantec.com



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Prescott, Joy

From: Prescott, Joy
Sent: Monday, March 03, 2014 5:07 PM
To: john.perry@maine.gov; mark_mccollough@fws.gov; wende_mahaney@fws.gov
Cc: Johnston, Erin (erin.johnston@edpr.com); Chapman, Katie (Katie.Chapman@edpr.com); Ingalls, Kellen (Kellen.Ingalls@edpr.com); Pelletier, Steve; Peterson, Trevor; Emerson, Bryan; dyoung@west-inc.com; Jessica.damon@maine.gov
Subject: RE: Number Nine Kick-Off Mtg Agenda and Summary
Attachments: Number Nine Fall 2013 Interim Report (02242014).pdf; Number Nine 2008 Baseline Study Report (Draft 020609).pdf; Number Nine Natural Resource Survey Work Plan 030314.pdf

John, Wende, and Mark – The agenda and summary that we provided on Friday is most relevant to Wednesday's discussion. EDPR would also like to provide you with the following documents as context, in case anyone on your team would like to review additional details prior to the meeting. We will have these available as reference during the meeting.

1. Proposed Work Plan for Natural Resource Surveys. This provides a summary of results from previous surveys and the more detailed protocol for each of the planned surveys.
2. Draft Wildlife Baseline Studies Report, May 2008–November 2008, Prepared by WEST. Note this has not been updated to reflect the current project layout, but presents the results of those surveys.
3. Interim Eagle and Raptor Observation Surveys Interim Report September–November 2013, Prepared by WEST. Note that this is an interim report and will be updated following completion of ongoing surveys this spring.

Thanks. - Joy

From: Prescott, Joy
Sent: Friday, February 28, 2014 4:07 PM
To: john.perry@maine.gov; mark_mccollough@fws.gov; wende_mahaney@fws.gov
Cc: Johnston, Erin (erin.johnston@edpr.com); Chapman, Katie (Katie.Chapman@edpr.com); Ingalls, Kellen (Kellen.Ingalls@edpr.com); Pelletier, Steve; Peterson, Trevor; Emerson, Bryan; dyoung@west-inc.com; Jessica.damon@maine.gov
Subject: Number Nine Kick-Off Mtg Agenda and Summary

John, Wende, and Mark –

Please see attached for EDPR's suggested agenda for our kickoff meeting next Wednesday, March 5 from 2:30-4:30 at MDIFW offices in Bangor.

We look forward to a productive discussion regarding the natural resource surveys for the project. The attached document also includes a summary of the surveys planned and completed for the project, which can serve as an outline for our discussion.

John, I assume that you will forward to your team.

Thanks. – Joy

Joy Prescott

Project Manager
Stantec
30 Park Drive Topsham ME 04086
Phone: 207-725-8545 ext 103
Cell: 207-319-6373
joy.prescott@stantec.com



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MDIFW / USFWS – Project Introduction and Workplan Discussion

Number Nine Wind Project / 195600919

Date: March 5, 2014

MDIFW: John Perry, Charlie Todd, John DePuy, Beth Swartz, Danielle D'Auria, Tom Hodgman, Bobby VanRiper, Jennifer Vashon, Erynn Call, Bob Stratton, Rich Hoppe, Frank Frost, Amanda DeMusz

USFWS: Mark McCullough, Wende Mahaney

EDPR: Katie Chapman, Erin Johnston, Kellen Ingalls

WEST: Dave Young, BJ Lukins

Stantec: Joy Prescott, Steve Pelletier, Trevor Peterson, Bryan Emerson

MEETING GOALS

- Team and project (re)introduction
- Discussion of study protocols and confirmation of regulatory approach
- Overview of historical data
- Next steps

PROJECT OVERVIEW

Katie Chapman, EDPR Project Manager for Number Nine Wind Project provided an overview of EDPR, the project history, team, timeline, and status. Attachment A includes the slides from the presentation.

Highlights from Project Description

- History
 - Under development since 2004
 - Significant transmission and market challenges
- Turning Point: Power Purchase Agreement
 - 250MW executed September 19, 2013 with CT Light and Power and United Illuminating
- Location - 9 miles west of Bridgewater, Maine
 - 58,467 acres under lease
 - Active timberland, privately owned
 - Expected operations late December 2016
 - 125 x 2MW turbines
- Transmission and Interconnection
 - 50 mile 345kV generator lead line to be constructed to Haynesville, Maine

PLANNED SURVEYS

Deer Wintering Areas

Trevor Peterson, Stantec, provided an overview of the protocol planned for 2014. Protocol is summarized in Attachment A (slides from the meeting) and the draft workplan provided prior to the meeting.

Discussion

- Bob Stratton suggested coordination with Ashland Regional office to review protocol. Noted that Amanda is flying deeryards this winter.

Next Steps

- Stantec will coordinate with Rich Hoppe and Amanda DeMusz in Ashland to review the protocol

Raptor Nest Survey

Dave Young, WEST, provided an overview of the protocol planned for 2014. Protocol is summarized in Attachment A (slides from the meeting) and the draft workplan provided prior to the meeting.

Discussion

- Erynn Call asked why there were a different number of locations in fall and spring? Response: the project area has changed.
- Erynn Call asked if ground surveys closer to the turbines would be considered. Response: Not planned at this point, although incidental wildlife observations are recorded during both raptor/eagle surveys and during wetland/vp surveys. Helicopter provides more accurate identification of birds in nests and any unoccupied nests will be visited during the second aerial survey.
- Erynn Call asked if location of nests would influence micro-siting of turbines. Response: Yes.
- Charlie Todd recommended that the first aerial survey should start no earlier than the 2nd week of April. Response: Workplan will be updated to reflect these dates.
- Charlie Todd recommended consultation with Ashland office for location of any sucker runs that could bring influx of birds, and consider follow-up surveys. Response: Will follow-up.

Next Steps

- WEST will revise timeframes in protocol to reflect recommended flight timeframe.
- Consult with Ashland for location of any sucker runs that could bring influx of birds

Great Blue Heron Nest Surveys

Dave Young, WEST, provided an overview of the protocol planned for 2014. Protocol is summarized in Attachment A (slides from the meeting) and the draft workplan provided prior to the meeting.

Discussion

- Erynn Call asked if all 10 miles will be surveyed. Response: Yes.
- Erynn Call asked if colonies were located, would there be follow-up with ground surveys to determine if herons are using the turbine areas as feeding areas? Response: No follow-up planned

but all incidental observations of wildlife are recorded both during raptor observations and wetland/vernal pool surveys

Next Steps

- None identified

Eagle and Raptor Observation Surveys

Dave Young, WEST, provided an overview of the protocol planned for 2014. Protocol is summarized in Attachment A (slides from the meeting) and the draft workplan provided prior to the meeting.

Discussion

- Erynn Call and Tom Hodgman identified potential issues with comparing results of surveys between 2008 and 2013
- Erynn Call ask if surveys will be conducted in both early morning and late afternoon? Response: yes, surveys are conducted in all daylight hours.

Next Steps

- Mark McCullough will send protocol to Sarah Nystrom, who will review and provide comments and recommendations.

Acoustic Bat

Dave Young, WEST, provided an overview of the protocol planned for 2014. Protocol is summarized in Attachment A (slides from the meeting) and the draft workplan provided prior to the meeting.

EDPR also plans to conduct acoustic surveys this summer in accordance with Indiana Bat guidelines for the potential listing of Northern Long-Eared Bats.

Discussion

- John DePuy provided overview of MDIFW recommendations for curtailment– 6 m/s all turbines for life of project, regardless of temperature
- Based on the curtailment recommendations, MDIFW will not be requesting additional bat surveys
- Discussion about how collecting additional data could help MDIFW make better decisions about curtailment, particularly related to acoustic activity and temperature.

Next Steps

- Schedule additional discussions with John DePuy and Wende Mahaney to discuss study design and issues related to Northern Long-Eared Bats.

Canada Lynx

Trevor Peterson, Stantec, provided an overview of the protocol planned for 2014. Protocol is summarized in Attachment A (slides from the meeting) and the draft workplan provided prior to the meeting.

Discussion

- Mark McCullough noted that USFWS has technician doing surveys on the highway in this area

- Mark McCullough noted that conditions have not been great for surveys. Response: Stantec has been carefully monitoring conditions. First round of survey conducted in January, conditions were not suitable in February, second round conducted this week and was successful in locating tracks.
- Jennifer Vashon would like additional details included in the protocol, particularly about survey area and survey intensity. Response: Stantec will follow-up to confirm the appropriate information is included in the protocol.
- Jennifer Vashon would like additional information about the desktop assessment. Response: Stantec will follow-up to discuss.
- Mark McCullough indicated USFWS will want to discuss other ways to document presence, including trail cameras or training staff to look for and document tracks whenever they are in the project area.

Next Steps

- Stantec will follow-up with Jennifer Vashon on the protocol for tracking survey.
- Stantec will schedule follow-up discussion with Mark McCullough to discuss lynx.

COMPLETED SURVEYS

Nocturnal Radar

Dave Young, WEST, provided an overview of the surveys conducted in 2008.

Discussion

- Tom Hodgman recommends that radar surveys be repeated in 2014. He noted that he participated in a site visit to the spring 2008 site and felt that it was not the best site. He understood the site selection was significantly limited because of flooding and site access, but indicated the view from the radar had considerable ground clutter, which could have caused reduction in ability to detect targets. The results (15 t/km/hr) were lower than other sites in Maine. The fall radar site had good visibility in at least one direction. He noted that there may be comments from him on-file, although it is also possible that the project was put on-hold before comments filed.
- USFWS agreed with MDIFW request to repeat surveys, as it relates to MBTA. If radar surveys not repeated, it is possible that more rigorous post-construction monitoring would be incorporated instead.

Next Steps

- EDPR and WEST will consider the recommendation to conduct additional radar surveys.

Breeding Bird Surveys

Dave Young, WEST, provided an overview of the surveys conducted in 2008.

Discussion

- Tom Hodgman indicated there is not a need to do BBS, as these have not been requested in several years.

Next Steps

- None

Raptor Migration

Dave Young, WEST, provided an overview of the surveys conducted in 2008.

Discussion

- Erynn Call noted that the methods for the raptor surveys were different than typical raptor migration surveys methods, which typically include a 6-8 hour survey period during 2-3 times per week, rather than 3 hour timeframe from dawn to mid-morning. She noted that the spatial distribution of the data from 2008 is important but having information on temporal distribution is also very important. She recommends 2-3 points in spring and fall with good visibility, in accordance with the MDIFW protocol. Response: West indicated that the points selected in 2008 provided greater spatial coverage and provided information on raptors moving thru the area. Because there were not a significant number of raptors observed in 2008, no additional surveys beyond the eagle observation surveys were included in the workplan.
- Charlie Todd agreed with this recommendation and noted that raptor migration in Maine is typically in pulses and should be scheduled in reference to wind movements, at a point where you can see approaching birds.

Next Steps

- EDPR and WEST will consider the recommendation to conduct additional raptor migration surveys.

OTHER SURVEYS**Other Listed Species**

Bryan Emerson, Stantec, provided a summary of the surveys conducted in 2008 and the protocol planned for 2014. Protocol is summarized in Attachment A (slides from the meeting) and the draft workplan provided prior to the meeting.

Discussion

- Charlie Todd note that bog lemming specimens have been collected by MDIFW in wetlands in northwestern Maine, and so this project could within the range.
- Beth Swartz agreed that roaring brook mayfly and northern spring salamander is pretty unlikely to occur – not requesting these surveys.
- Beth Swartz noted that if the project is located in the St. Croix watershed, tomah mayfly may occur.
- Beth Swartz noted that freshwater mussel surveys may be requested if there are water crossings for the Generator Lead.
- Wood turtle streams - once the project design is more certain, it may be appropriate to look at specific sections of road and assess for value and potential wood turtle surveys.

March 5, 2014

Number Nine Wind Project – Workplan Discussion

Page 6 of 7

- MDIFW and USFWS would like to see a map showing the rivers and streams that will be crossed, particularly for the gen lead.
- Tom Hodgman requested that rare animal sighting forms be completed for **Bicknell's thrush**, rusty blackbird, and olive-sided flycatcher

Next Steps

- Stantec will follow-up with Charlie and John, as well as Rich and Amanda to discuss relevant protocol.

Salmon

Bryan Emerson, Stantec, provided a summary of the surveys conducted in 2008 and the protocol planned for 2014. Protocol is summarized in Attachment A (slides from the meeting) and the draft workplan provided prior to the meeting.

Discussion

- Wende Mahaney noted that additional discussion is needed. She noted that field measurements need to be taken upfront, and that it may not be just critical habitat that should be considered, because there are some exclusionary areas that should also be taken into consideration.

Next Steps

- Stantec will schedule follow-up meeting with USFWS and ACOE to discuss salmon, with a particular focus on generator lead.

Wetlands

Bryan Emerson, Stantec, provided a summary of the surveys conducted in 2008 and the protocol planned for 2014. Protocol is summarized in Attachment A (slides from the meeting) and the draft workplan provided prior to the meeting.

Discussion

- Bob Stratton indicated MDIFW would request re-verification for wetlands previously surveyed.

Next Steps

- None Identified

Vernal Pools

Bryan Emerson, Stantec, provided a summary of the surveys conducted in 2008 and the protocol planned for 2014. Protocol is summarized in Attachment A (slides from the meeting) and the draft workplan provided prior to the meeting.

Discussion

- **When MIDFW reviews vernal pools, they will want to confirm that all surveys will be 250' from all project infrastructure, including any roads where there is a change of use.** USFWS agreed.
- Beth Schwartz and Wende Mahaney indicated that results from 2008 survey should be fine to include, as long as protocol was followed and data was collected consistent with that protocol.

- Beth Schwarz requested that VP forms be submitted in advance of the application.

Next Steps

- Beth will confirm whether use of the previous forms is sufficient.

Aquatics / Fisheries

Bobby VanRyker provided several comments related to fisheries.

- MDIFW will be requesting a water quality assessment, based on the DEP protocols.
 - Purpose will be to compare pre-construction baseline information with construction and post-construction impacts on water quality, including aquatic life, and physical stream characteristics.
 - Include evaluation of chemical, physical and biological parameters.
 - Subset of streams within 100m of project infrastructure should be evaluated. Not every stream needs to be evaluated – sites will need to be carefully selected. Regional fisheries biologist should be involved in selection process.
 - Baseline condition of all streams should be evaluated. Rock-bag samples should be taken.
 - July-August timeframe.
 - Difficulty is finding individuals who have capability to do this work. Taxonomy to order.
 - Collection timeframe will be baseline + during construction + 3 years post-construction
- If there are any crossings, MDIFW is likely to recommend a single pass of an electro-fishing run

Discussion

- Clarification requested on what information these surveys will provide when they are conducted **in an actively managed forest landscape. Response: Trees grow back, and you don't have** clearcuts of thousands of acres like you do for a wind project. MDIFW believes DEP is giving credit for BMP in urban/suburban watersheds that may sometimes be inappropriate. If a lot more **water is flowing into stream channels, we don't know what the effect will be.**
- Stantec noted that presence of active harvesting will affect the results of any water-quality monitoring.

Next Steps

- Schedule meeting to discuss water quality monitoring – Bobby, Frank, John,
- Schedule discussion about fisheries issues.

Prescott, Joy

From: Boyden, Sarah
Sent: Thursday, March 13, 2014 4:45 PM
To: Vashon, Jennifer (Jennifer.Vashon@maine.gov)
Cc: Mark_McCollough@fws.gov; Perry, John; Prescott, Joy; Pelletier, Steve; Johnston, Erin (erin.johnston@edpr.com); Chapman, Katie (Katie.Chapman@edpr.com); Ingalls, Kellen (Kellen.Ingalls@edpr.com)
Subject: Number Nine Lynx Study Plan
Attachments: Lynx Study Plan Memo 031314.pdf

Hi Jen,

As a follow up to our brief phone conversation on Tuesday, I'm sending along the attached updated workplan for your review. This supersedes the original plan forwarded by Adam Gravel (via email February 19, 2014) referencing our intent to follow the Western Mountain Eco-Region Track Survey protocol, and provides more comprehensive information as to how the survey is actually being conducted.

As I mentioned on Tuesday, we would like to schedule a call to review the updated workplan with you, before completing the final round of track surveys by the end of the month. Do you have preference/availability for a certain time next week?

Sarah

Sarah Boyden

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 Please consider the environment before printing this email.

To: Erin Johnston
EDPR, Albany NY

From: Steve Pelletier
Topsham, ME

File: 195600919

Date: January 13, 2014

Reference: EDPR NUMBER NINE WIND PROJECT - CANADA LYNX SURVEY PLAN

EDP Renewables (EDPR) has requested Stantec Consulting Services Inc. (Stantec) conduct a habitat assessment and tracking survey for Canada lynx (*Lynx canadensis*; lynx) at the site of the proposed Number Nine Wind Project (project) in Aroostook County, Maine.

The project is proposed to include up to 125 turbine locations, with access road and electrical collection corridors connecting the turbines, as well as a 45.5-mile generation lead corridor. Portions of the project, including all of the turbine locations, access roads, and electrical collection corridors, and approximately 21 miles of the generation lead corridor are located within Critical Habitat for lynx (Figure 1). This includes portions of 7 townships in the project area located within Critical Habitat, including E Township, T9R3, TDR2, T8R3, TCR2, Dudley Township, and Hammond Township.

Following are the proposed work scope and scheduled tasks for conducting the surveys in compliance with federal (US Fish and Wildlife Services; USFWS) and state (Maine Department of Inland Fisheries and Wildlife; MDIFW) agency recommendations and protocols.

PROJECT BACKGROUND

Canada lynx are a boreal forest species typically associated with the northern part of the state where spruce budworm epidemics of the 1980s and previous large clear cutting practices left behind large tracts of dense regenerating spruce and fir. Lynx rely almost exclusively on snowshoe hare (*Lepus americanus*) as their primary prey and show a strong preference for dense conifer regrowth, particularly within large clear-cuts or partial-cuts 12–30 years post-harvesting. The species is listed as Threatened by USFWS under the US Endangered Species Act, resulting in designated Critical Habitat for lynx throughout much of northern and western Maine. Accordingly, lynx will be considered during both the state permitting (given Critical Habitat is regulated Significant Wildlife Habitat) and federal permitting process (as required consultation with USFWS).

The following survey plan describes the methodologies and techniques to be employed by Stantec during the winter 2014 survey period. The plan consists of 3 primary tasks: 1) an initial desktop habitat mapping assessment, 2) a series of 3 snow track surveys within the project area, and 3) a brief comprehensive report describing the results of the survey effort. Procedures outlined in this plan are based on Stantec's prior experience with similar surveys and follows standard lynx tracking procedures as outlined in MDIFW's Western Mountain Eco-Regional Lynx Track Survey protocol. Snow track surveys must be completed during appropriate winter conditions and began in January 2014.

Reference: EDPR NUMBER NINE WIND PROJECT - CANADA LYNX SURVEY PLAN**SCOPE OF WORK****TASK 1 – CANADA LYNX DESKTOP HABITAT ASSESSMENT**

Stantec will use remote sensing to conduct a desktop landscape analysis of the 7 townships in the project area that are located within Critical Habitat for lynx. The purpose of this task will be to identify habitats within the survey area suitable for snowshoe hare habitat, which is strongly associated with lynx presence. This assessment will provide preliminary information for discussions with agencies, particularly related to the potential presence of lynx.

The survey area for the desktop analysis includes 5 townships: E Township, T9R3, TDR2, T8R3, and Hammond Township. In addition, the transmission line crosses small portions of TCR2 and Dudley Township, and the area within one-quarter mile on either side of the centerline of the proposed transmission line will also be included in the assessment.

Stantec will review available digital aerial orthophotos from the fall of 2013, as provided by EDPR. This imagery is comprised of true color, high resolution digital aerial photos assembled into a geo-referenced orthophoto covering the townships in which the project is located. The imagery will be viewed on-screen in 2-D using CAD or GIS software. The 2013 photo imagery will be supplemented with National Wetland Inventory (NWI) and GoogleEarth imagery, dating back to 1996, to help enable a more accurate analysis of site conditions.

Habitat types known to be preferred by snowshoe hare and lynx will be identified on the imagery and digitized into polygons representing potential high-value, moderate-value, and future habitats, as existing at the time the imagery was collected. These preferred habitats typically include dense stands of regenerating coniferous forest that provide food and cover for snowshoe hare. Dense deciduous and mixed coniferous-deciduous regenerating stands may also provide conditions suitable for snowshoe hare, and as such will be included in the mapping of potential lynx habitat. Only those habitat types of at least 2 acres in size that appear to provide conditions suitable for snowshoe hare will be mapped. Apparent variations in stand density, vegetation height and age, and overall stand size generally dictate whether the mapped polygons will be classified as having moderate or high value as potential lynx/snowshoe hare habitat. Habitat polygons that appear to have the potential for developing into moderate or high-value habitats in the next 5–15 years will be considered future habitats. Polygons depicting the 3 habitat classifications will be color-coded and maintained on separate GIS data layers for analysis and map presentation purposes.

Polygons identified as high or moderate-value during the desktop analysis will be spot checked in the field to determine actual habitat value based on vegetative conditions.

TASK 2 – CANADA LYNX SNOW TRACK SURVEYS

Stantec will conduct a lynx snow tracking survey within 1 mile of proposed turbine locations, in areas where landowner permission has been obtained. The purpose of the survey will be to investigate the project area for signs of lynx use based on presence of tracks, scat, or other observable signs of use.

The survey will include up to 3 separate visits to the project area between January and March 2014 to conduct up to 12 days of lynx winter tracking field surveys. Surveys will be conducted within 24 to 72 hours after a recent snow event to ensure that detected tracks detected are fresh and have not

Reference: EDPR NUMBER NINE WIND PROJECT - CANADA LYNX SURVEY PLAN

been altered by wind or warm temperatures. The first survey planned for January will depend on the timing of the first snow storm. The remaining 2 surveys will occur mid- to late winter and are subject to appropriate, fresh snow conditions. The surveys will be conducted by snowmobile and will focus on passable roads and trails within 1 mile of proposed turbine locations.

Where landowner permission exists, attempts will be made to survey all passable, unplowed roads and trails within the 1-mile survey area. Biologists with experience in snow and animal tracking will drive the roadways at a sufficiently slow speed to allow accurate track identification. A GPS track log will be maintained during the survey to document the route course and total survey effort. A GPS point will also be collected for every individual lynx found to be crossing the survey route.

Three sets of track measurements including footprint length and width, track stride and straddle, as well as sinking depth, and direction of forward travel will be recorded for each individual lynx track intercept. Track quality will be recorded following the MDIFW's Track Quality rating system, which ranges from a rating of 4, where every footprint leaves a clear track; to the poorest quality rating of 0 where gait pattern is difficult to determine. Multiple photographs documenting stride, straddle, and footprint detail will be collected for each track. Habitat data will also be collected, and will include cover type, height of canopy, and relative density. Efforts will be made in areas with numerous crossings to determine if multiple lynx are crossing, or if one lynx is crossing several times. Where multiple lynx are confirmed, a GPS point will be collected for each lynx track.

When time allows, lynx tracks will be followed (primarily back-tracked) in order to search for scat and DNA samples (scat or hair), and to record behavioral data, including beds, scent marking, prey chasing, or kill sites. GPS track logs, locations of scat and other sign, and pertinent behavioral data will also be recorded. DNA samples scat or collections of hairs found in beds will be sent for DNA lab testing to provide more detailed information on determine the gender and number of individuals and gender. DNA samples will be preserved and prepared according USDA Rocky Mountain Research Station Wildlife Genetics Lab protocols.

TASK 3 - REPORTING

A brief narrative report of methodology and reports will be prepared, including tables and maps that summarize habitat categories and illustrate lynx use in relation to the anticipated project area.

Stantec Consulting Services, Inc.

Steve Pelletier
Principal
Phone: (207) 729-1199
steve.pelletier@stantec.com

Attachment: Figure 1

c. Katie Chapman, EDPR

Prescott, Joy

From: Perry, John <John.Perry@maine.gov>
Sent: Thursday, March 20, 2014 12:51 PM
To: Prescott, Joy
Cc: Johnston, Erin (erin.johnston@edpr.com); Chapman, Katie (Katie.Chapman@edpr.com); Ingalls, Kellen (Kellen.Ingalls@edpr.com); Pelletier, Steve; Emerson, Bryan; Peterson, Trevor; dyoung@west-inc.com; William Lukins; wende_mahaney@fws.gov; mark_mccollough@fws.gov
Subject: RE: Number Nine Wind Project - Meeting Summary 030514

Hi Joy,

We'd like to thank you and the rest of the Stantec team, EDPR representatives, and the WEST staff for meeting with us for the pre-application review of the Number 9 Wind Power Project, providing background and statuses of surveys to date, and allowing MDIFW to ask questions, raise some of our concerns, and make preliminary recommendations on surveys proposed and conducted to date. The meeting summary and PowerPoint slides are very helpful. While it is difficult to get at all of the issues on a project of this scale in a 2-hour meeting, it was worthwhile and we now have a better understanding of the project. However, EDPR must understand that a target of late 2016 construction complete is a *very* aggressive schedule, especially when considering that the project area has changed; the exact number of turbines and their locations have yet to be determined; and that MDIFW has serious concerns with some of the surveys conducted to date, questions regarding some of the surveys being proposed, and recommended new surveys (i.e. water quality and stream assessment surveys) that need to be ironed out.

Below are specific comments raised by staff, some of which will be addressed when the meetings with appropriate staff are scheduled. Note that until a map showing final project boundaries is made available, including the proposed route(s) for the generator lead lines, our comments and recommendations below should not be considered complete.

Pages 2, 3, 5 : Raptor Nest Survey, Eagle and Raptor Observation Surveys, Raptor Migration

MDIFW makes the following comments as they pertain to eagles and raptors:

1. To allow time for review and development of recommendations from agency staff, please provide reports and information *at least* one week prior to meetings (include GIS map data layers which will inform many of the recommendations).
2. Please request feedback on protocols *prior to* initiating field surveys.
3. Raptor migration data:
 - a. Important to collect because:
 - i. the extent/impact of the Number 9 project
 - ii. to assist in micro-siting turbines
 - iii. lack of raptor migration data for this area of Maine
 - b. Concerns with EDPR approach:
 - a. 2008 and 2013 EDP raptor migration data are insufficient in terms of time spent per day, per week, and per season.
 - b. 2008 EDP raptor migration survey protocol:
 - i. Three hours is too short of duration to adequately sample diel variation.
 - ii. Surveys conducted only between dawn and 10 a.m. is problematic - afternoons and evenings are an important time to collect data because of suitable thermals.

- iii. Need to report the number of times visited per week, not just the total number of times the site was visited. Should visit sites 2 or more times per week to distribute effort throughout migration period.
 - iv. Timeframe of surveys too narrow (collected data from May 1 to May 31, 2008) and fall season (August 16 to October 31).
 - c. 2013 EDP raptor migration survey protocol:
 - i. Incidental observations of raptors during 1 hour/point/month bald eagle surveys do not equate to raptor migration data.
 - c. Consider the following:
 - a. Consult with agency staff on survey protocol, including the number and placement of raptor migration stations prior to initiating surveys.
 - i. Provide GPS points, photographs, and discuss alternative approaches, and placement consideration for spring and fall surveys.
 - ii. Follow HMANA protocol, datasheets, and weather parameters.
 - iii. Please provide citations to support your survey protocols and sampling design.
 - b. Develop a sampling approach that accounts for temporal and spatial variation:

Raptor migration sites should be visited 6 – 8 hours per day, 2 or more time a week, during the spring (Feb – June) and fall (Aug – Dec) (Strickland et al. 2011 dates, *Maine dates: March – June 15 [2 surveys per week = 30 surveys], August – Nov 30th [2 surveys per week = 34 surveys]*).
 - c. Because of the timing of consultation in the midst of the 2014 spring migration survey period, additional surveys will need to be conducted in 2015 to obtain at least 1 year of spring and fall (2014) data collection (*note: 2 or more years of pre-construction raptor migration data is recommended due to inter-annual variation in migration activity, Strickland et al. 2011*).
4. Raptor nest data:
 - a. Important to collect because:
 - i. The extent/impact of the Number 9 project
 - ii. Assist in micro-siting turbines (e.g. 0.5 mile setback from nest)
 - iii. Monitor effect of turbines on nesting activity (pre- and post- construction observations).
 - b. Concerns with EDPR approach:
 - i. Incorporate some ground based survey approaches around project footprint.
 - ii. Please provide citations to appropriate literature including prior wind development project documents in terms of protocol for raptor nest detection/monitoring/reporting.

Page 3: Great Blue Heron Nest Surveys

- “Incidental observations of wildlife” is not a substitute for focused, on-the-ground surveys. 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. If an active great blue heron colony is located within the 4-mile radius of the project area, additional ground surveys should be conducted to determine how the herons are using the area. These surveys should be conducted for at least 2 days between May 15th and June 30th and can be done alongside diurnal raptor surveys already planned within this window of time. Great blue heron observations and their movements in and around the proposed turbine site should be recorded in the same manner that raptor movements are recorded. If raptor surveys are not scheduled to occur between May 15th and June 30th, then the following protocol should be followed:
 - Ground surveys for great blue herons will be conducted on fair weather days from one observation point centrally located in the project area and with a relatively unobstructed view in all directions. Surveys should be a minimum of 7 hours long and should either include early morning hours (½ hour past sunrise to 4 ½ hours past sunrise) or late afternoon hours (4 ½ hours prior to sunset to ½ hour prior to sunset). During the survey, hourly weather conditions

(wind speed and direction, temperature, percent cloud cover, and precipitation) should be recorded. For all great blue herons observed, the following should be recorded:

- flight location and direction (compass direction)
- flight behavior
- flight height (estimate above ground height using reference features, such as nearby trees and structures)
- flight time (time of day)
- flight path documented on a field map of the project with emphasis on flight orientation relative to project (e.g., crossing or paralleling ridgeline, passage in saddle, etc.)

Page 3: Acoustic Bat

As was stated during the meeting and in correspondence on October 10, 2013, MDIFW will be recommending full curtailment of at least 6 m/s at all the turbines, from at least ½ hour before sunset to at least ½ hour after sunrise, during the period April 20 – October 15, regardless of temperature; cut-in speeds are determined based on mean wind speeds measured at hub heights of a turbine over a 10-minute interval, and turbines will be feathered during these low wind periods to minimize risks of bat mortality. As such, we are not recommending that acoustic bat data be collected. The basis for this is that several tree bats in Maine have been designated as “Species of Special Concern” since 1987: silver-haired bat (*Lasionycteris noctivagans*), eastern red bat *Lasiurus borealis*, and hoary bat (*Lasiurus cinereus*). In addition, two cave bats have long been recognized as “Species of Special Concern” due to their relative rarity or limited distribution near range limits: eastern small-footed Myotis (*Myotis leibii*) and eastern pipistrelle (*Pipistrellus subflavus*). However, the plight of little brown bats (*Myotis lucifugus*) and northern long-eared bats (*Myotis septentrionalis*) are now a grave concern. Both are currently listed as “Species of Special Concern” in Maine. Their status is under review for listing under auspices of the Maine Endangered Species Act and more broadly under the U.S. Endangered Species Act. Rapid declines of the species have occurred following the sudden onset of widespread deaths among cave bats attributed to White Nose Syndrome (WNS). Bats in all known cave hibernacula in Maine are now exposed to WNS. ***The precipitous decline in numbers of bats in Maine has caused MDIFW to treat all mortality as significant,*** regardless of the comparatively low numbers of individuals that may be detected or killed at a particular project.

However, should EDPR choose to voluntarily collect acoustic bat data, we recommend it be done per MDIFW protocol. Please contact us for the most recent version.

Page 4: Canada lynx

Many of the initial questions regarding lynx surveys, habitat assessments, and data collection were addressed in the conference call yesterday. Below are some follow-up comments:

To adequately address impacts to lynx, the applicant would need to adequately assess the amount and location of lynx habitat and provide estimates of acres of lynx habitat lost or impacted from development. Since road mortalities are the most significant human source of mortality to lynx in Maine, information on the amount and location of new roads, improvements to existing roads, traffic volumes and speeds would be helpful in addressing potential impacts. We would expect the USFWS will be asking for this information, as well as requiring monitoring and reporting lynx road mortalities (pre and post construction).

The consultant is conducting surveys to determine if lynx occur in the proposed project area using MDIFW’s winter snow track surveys protocols. This survey was designed to identify if 100 km² areas (~ a township) are occupied by lynx. It would not be appropriate to use this survey to identify if habitat patches are occupied.

If the applicant is going to be conducting post-construction monitoring of lynx habitat and presence, they may want to consider some estimates/monitoring of snowshoe to assess whether changes in lynx is related to changes in snowshoe hare vs. impacts of development.

Page 4: Nocturnal Radar

To characterize passage rate for the project, assuming a broad front of movement by night migrants, the preference is for one site at “high” elevation with a good view rather than several sites with a lot of ground clutter, which would reduce the estimate of passage rate. However, due to the size of this project spanning over 4+ towns over varied terrain, MDIFW may request more monitoring sites if distance and high elevation points are miles from one another.

To reiterate what was stated in the pre-application meeting, if EDPR chooses to not repeat the nocturnal radar surveys, this could severely limit and/or delay MDIFW’s assessment of the project.

Page 5: Other Surveys

MDIFW’s Reptile, Amphibian, and Invertebrate (RAI) Section makes the following recommendations and follow-up comments. Given the general location described during the kick-off meeting, there is potential for several other RAI jurisdictional species to be impacted by ROW clearing or other project activities related to new or upgraded transmission lines. For example, there is a cluster of Mystery Vertigo (State Species of Special Concern terrestrial snail) occurrences between the project area and Houlton, and several state-threatened freshwater mussel occurrences in the Mattawamkeag River watershed in and around Haynesville. Depending on the intersection of the lead line routes with documented occurrences or habitats of these and other state-listed species, additional surveys may be requested.

RAI Survey Requests

- 1) Roaring Brook Mayfly: no surveys requested
- 2) Northern Spring Salamander: no surveys requested
- 3) Vernal Pools: On land owned or controlled by the project applicant, surveys should occur within 250 feet of all proposed project impacts - with the exception of road corridors. Recommended survey boundaries for project road corridors are as follows:
 - a. Existing forest management roads with a temporary change in use only (i.e., no proposed change in the existing footprint of the road or shoulders, and the road will not become a permanent service or access road for the wind facility): no surveys required
 - b. Existing forest management roads with either 1) a permanent change in use (i.e., as a regular service or access road for the completed facility); 2) a proposed widening or alteration of the road corridor (including shoulders); or 3) a permanent conversion of forested to non-forested habitat along road shoulders: surveys required within 100 feet of proposed final road corridor (including shoulders)
 - c. New roads (permanent or temporary): surveys required within 100 feet of proposed final road corridor (including shoulders)

EXCEPTION: In cases where other proposed permanent project impacts are within 500 feet of a road corridor, as described in items b) and c) above, surveys should occur within 250 feet of the proximal side of the road corridor (including shoulders).

Vernal pool data transcribed on 2008 Maine State Vernal Pool Assessment Forms are acceptable to MDIFW and do not need to be transferred to a current version of the form. The key data fields missing from 2008 forms are 1) egg mass maturity; and 2) percent of pool surveyed. If this information is available for pools surveyed using older field forms, MDIFW requests that it be noted on the old forms or provided in a supplemental table. [Note: percent of pool surveyed = % of entire pool, not just portion owned or controlled by applicant.]

Completed Maine State Vernal Pool Assessment Forms for the project must be provided to MDIFW prior to submitting a project application to DEP. Given the size of the project and indications in preliminary reports that several hundred vernal pools will have been surveyed for the project, MDIFW strongly recommends that all field forms and supplemental data (e.g., GIS shape files, landowner table, etc.) are delivered to us at least four months before the application is submitted for agency review.

Additional Potential RAI Concerns:

Tomah Mayfly: The project boundary shown on earlier maps sent from the applicant incorporates a section of St Croix Stream not far from a documented occurrence of the State-Threatened Tomah Mayfly. Maps shown during the 3/5/14 meeting did not seem to extend that far west. Depending on the final project boundaries and the nature of proposed project impacts relative to St Croix Stream or any tributary streams with suitable habitat (flooded sedge meadow), MDIFW may request limited surveys for Tomah Mayfly to identify any potential conflict with populations or habitat.

Pygmy Snaketail: This State Species of Special Concern dragonfly is documented to occur in St. Croix Stream within the project boundary shown on earlier maps. Depending on the final project boundaries and the nature of proposed project activities relative to St Croix Stream, MDIFW may consider potential impacts to this species during its project review. No surveys are requested.

Wood Turtle: This State Species of Special Concern has been documented to occur in St Croix Stream, as well as other watersheds just outside the project boundary. Once final project boundaries and a diagram of proposed project impacts are provided to the Department, MDIFW will use aerial imagery to screen streams and rivers within the project area for their potential as Wood Turtle habitat. Depending on the nature of proposed activities relative to potential Wood Turtle streams, MDIFW may request limited surveys to document the species' presence and identify potential conflicts with habitat or populations.

Page 7: Aquatics/Fisheries

The upper watersheds of the project area supports significant wild brook trout habitats that are known to support wild fish. Once the approximate locations of turbines, new road construction, areas proposed to be cleared and maintained in this condition, and locations of all transmission lines are identified, MDIFW will better able to suggest pre- and post-project monitoring for stream habitats affected. That being said, our current baseline water quality and stream assessment guidelines are included below. Note that these guidelines are currently under development--we provide a brief description here and request that you work closely with MDIFW to establish an appropriate sampling design and deliverables based on site-specific conditions (e.g. project size, watershed(s) in the proximity of the project, topography, current areas of disturbance, habitat of interest) prior to initiating pre-construction surveys.

Baseline Water Quality and Stream Assessment Surveys: To assess possible impacts resulting from large-scale wind power development on mapped and unmapped intermittent and perennial streams, MDIFW recommends the Applicant develop a baseline water quality study plan, based in part on the Maine Department of Environmental Protection's (MDEP) standardized methods to collect and analyze aquatic life in flowing waters, for the purpose of comparing possible during- and post-construction impacts to pre-construction baseline information.

OBJECTIVES

The objective of the water quality and stream assessment surveys is to establish baseline information regarding water quality, including aquatic life, and physical stream characteristics before, during, and after construction at pre-determined locations at the project site, and compare these sites to control sites for the purpose of assessing potential impacts of the project. Baseline information collected as part of this work is intended to provide a basis for comparison with water quality conditions and stream channel metrics during and after project construction.

Stream monitoring locations will be identified, in conjunction with MDIFW biologists, within the project area using information obtained during wetland and water course delineations. Water quality monitoring and stream assessments will be initiated prior to construction to develop baseline conditions of the stream habitats. Monitoring will continue during construction (assumed one season) and will be completed on an

annual basis for three years following construction for a total of five seasons of monitoring. Sampling locations will include both perennial and intermittent streams. For purposes of this assessment, stream crossings may include:

- Temporary stream crossings during construction (i.e. with crane mats)
- Permanent stream crossings (i.e. with culverts)
- Generator lead electrical line crossings of streams

Chemical and Physical Parameters

At a minimum, the following water quality and stream habitat assessment parameters will be collected. Location maps and representative photographs for each sampling location will be included.

- A table of the sampling locations to include name of stream (if named); stream type (intermittent/perennial); subwatershed; bankfull width; substrate characteristics; overall gradient; statutory stream classifications per Maine Revised Statutes Title 38 §467;
- Pre- and post-construction assessment of physical parameters including an assessment of the sediment characteristics; evidence of bank erosion; evidence of channel widening; evidence of channel down-cutting (i.e., headcuts); evidence of armoring or embeddedness of substrate; evidence of sediment deposition resulting from project activities; evidence of change in substrate type
- Water temperature. Install water temperature data loggers at each of the identified stream monitoring locations. At proposed stream crossings, water temperature data will be obtained at sample locations located upstream (where possible) and downstream of the proposed crossing using data-logging temperature sensors installed in the watercourse at each monitoring location. The data logger temperature sensors will record water temperature at intervals of 30 minutes. Data should be downloaded at intervals of approximately six months. It is recommended that each data logger be collected prior to spring high water levels (e.g., early April) and again in late-summer (e.g., October). Data loggers should be in weighted protective housings (e.g., iron pipe) attached to fixed anchors (e.g., steel rods) attached to the streambed and/or bank. Locations of the installed equipment should be obtained using GPS receivers. The equipment should be installed in relatively deep locations at each site to prevent exposure.
- specific conductance
- dissolved oxygen
- pH
- total dissolved solids

BIOLOGICAL MONITORING

To monitor potential changes in stream classification, biological monitoring will be conducted in the summer prior to construction. Biological monitoring will be conducted in accordance with the methodology outlined in Methods for Biological Sampling and Analysis of Maine's Rivers and Streams. Pursuant to the methodology, one set of rock bags or rock baskets (i.e., three individual samplers) will be deployed within suitable sampling habitat at each of the stream monitoring locations subsequent to July 1, to sample the benthic macroinvertebrate species composition within each stream. If the potential stream sample locations are dry or otherwise do not provide suitable benthic macroinvertebrate sampling habitat at the time of sampler deployment, additional potential stream sampling areas farther downstream or nearby within the associated watershed will be investigated. Samplers will remain in the stream between 24 and 32 days and will be retrieved no later than September 30. MDEP Biological Unit Stream Macroinvertebrate Field Data Sheets will be completed at the time of sampler deployment and retrieval. Samples will be preserved in the field and submitted to a qualified firm for sorting and taxonomic identification and enumeration. The subsequent macroinvertebrate data will be submitted to the Maine Department of Environmental Protection to determine the stream classification.

In addition, MDIFW recommends stream fish assemblage surveys (e.g., electrofishing) at sampling locations to determine presence/absence of species (mainly coldwater species distribution). We recommend that you contact the appropriate MDIFW Regional Fisheries Biologist for the most recent survey protocol and necessary scientific permits prior to the sampling events.

REPORTING

The results of the stream monitoring will be included in an annual monitoring report by March 1 of the year following the monitoring event. The report will include the methodology, results, and analyses of the stream monitoring activities as well as recommendations for changes to the monitoring program or potential remedial actions.

Thank you,

John

John Perry

Environmental Review Coordinator
Maine Department of Inland Fisheries and Wildlife
284 State Street, 41 SHS
Augusta, Maine 04333-0041
Tel (207) 287-5254; Cell (207) 446-5145
Fax (207) 287-6395
www.mefishwildlife.com



From: Prescott, Joy [mailto:joy.prescott@stantec.com]
Sent: Tuesday, March 11, 2014 10:13 AM
To: Perry, John; wende_mahaney@fws.gov; mark_mccollough@fws.gov
Cc: Johnston, Erin (erin.johnston@edpr.com); Chapman, Katie (Katie.Chapman@edpr.com); Ingalls, Kellen (Kellen.Ingalls@edpr.com); Pelletier, Steve; Emerson, Bryan; Peterson, Trevor; dyoung@west-inc.com; William Lukins
Subject: Number Nine Wind Project - Meeting Summary 030514

John, Wende, and Mark – Attached is the summary of our meeting last Wednesday to provide an overview of the Number Nine Wind Project and the proposed surveys for this year. As requested, we also included the slides that were used in the presentation. John, my understanding is that you will circulate to all of the MDIFW attendees, as I have not copied everyone on this message.

We appreciate everyone's participation and are reviewing the feedback provided during the meeting. We'll be revising the workplan (a draft of which was provided prior to the meeting on Mar 3, 2014) based on the discussion, and will follow-up with staff to discuss specific topics as described in the meeting summary. We will circulate a revised version of the workplan this month.

Mark, also note that Dave or BJ will be sending you and Sarah Nystrom the revised portion of the workplan that is specific to eagles so that you and Sarah can review.

Please let me know if there are any edits or clarifications to this summary.

Thanks again for your participation and we look forward to working with MDIFW during the review of this project. - Joy

Joy Prescott

Project Manager
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Prescott, Joy

From: Nystrom, Sarah <sarah_nystrom@fws.gov>
Sent: Tuesday, April 08, 2014 5:07 PM
To: David Young
Cc: Johnston, Erin
Subject: Re: Number Nine Wind Project

Hi Dave,

Looks accurate to me - I don't have anything to add!

Sarah

On Tue, Apr 8, 2014 at 3:50 PM, David Young <dyoung@west-inc.com> wrote:

Sarah,

Thank you taking the time to chat with me today about the eagle surveys at the Number Nine Wind Project (Maine). I appreciate your insight and recommendations for the surveys. The following briefly summarizes what we discussed. Please feel free to add anything I may have missed.

Eagle Observation Surveys

- The latest versions of the ECPG recommend two hours of survey per 800-m radius station per month but one-hour per month is a good target given the weather issues, access constraints, and large area being covered
- One-hour survey blocks are better than two ½-hour surveys
- Two primary objectives for the eagle observation surveys are to: (1) provide data for calculating an estimate of potential impacts and (2) provide spatial data for use in a qualitative assessment of eagle use in the area
- Recommend collecting data during three seasons at a minimum (spring, summer, and fall) as eagle use patterns can change and assumptions will need to be made about use in seasons without data (the data gaps)
- Having three seasons allow us to estimate impacts by seasons and not apply one estimate for the entire year
- Site access issues are understood as being a limiting factor for data collection but continuing surveys later in the season or doubling effort when access improves can help compensate for less data
- Using results of the surveys to help select final turbine locations is supported by the FWS (e.g., avoiding eagle concentration areas)

Raptor Nest Survey

- In general, they are OK with MIFW's (Charlie Todd) recommendations on timing of surveys for Maine (third week of April for the first nest survey)

- Would like to see more thorough coverage during the raptor nest survey in the area within 4 miles of the turbines; these are the eagles most likely to be using the project area and at greatest risk
- Less thorough coverage is OK from 4 miles to the 10-mile buffer but the survey in this area should be concentrated in good habitat for nesting eagles (e.g., around large water bodies, rivers, shoreline)
- Keeping a GPS track of the coverage is good and it should be reviewed in between surveys so that missed areas can be covered the second time around
- In general transects back and forth across the study area should be used to get thorough coverage, but flexibility should be maintained to spend more time looking in good habitat areas

Raptor Migration Survey

- One concern in Maine has been the presence of migrant golden eagles moving through
- The raptor migration data will be helpful in providing context for the results of the other surveys
- Not expecting that this area would experience a big pulse of migrant raptors but good that we are looking

Thank you,

David Young

Senior Project Manager



Environmental & Statistical Consultants
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 Cheyenne, WY 82001
 Main: (307) 634-1756

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Sarah Nystrom
Northeast Region Eagle Coordinator
U.S. Fish and Wildlife Service
300 Westgate Center Drive
Hadley, MA 01035
(413) 253- 8592



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- Meeting Date:** May 28, 2014
- Location:** Conference call
- Attendees:** Beth Swartz, Maine Department of Inland Fisheries and Wildlife
Erin Johnston, EDP Renewables
Joy Prescott, Stantec
Bryan Emerson, Stantec
- Subject:** Number Nine Wind Project – Vernal Pool Surveys

Bryan Emerson described the proposed methodology to determine whether vernal pool survey data from 2008-2010 can be used as part of an upcoming Natural Resources Protection Act application for the Number Nine Wind Project:

1. Stantec has reviewed vernal pool data forms for surveys performed from 2008-2010.
2. Stantec identified a random sample of identified vernal pools across the project area (~20%) and is conducting a field-verification for the data by taking the completed data forms and conducting field visit to verify accuracy of the data forms (natural/man-made, hydrology, presence/absence, etc).
3. If the previously completed data forms appear to be accurate based on field verification, all previously completed data forms will be used as part of the application.
4. Stantec is also reviewing all data forms to identify those forms where a revisit is suggested.

Bryan noted that based on Stantec's review of the previously completed data forms and field verifications conducted thus far, the data appears to be good.

Beth Swartz confirmed this approach is acceptable. Beth clarified that this is an approach that Stantec has recommended, not that MDIFW was requesting vernal pool data from past years be revisited, and Beth added that she commends Stantec for the extra effort. Beth also indicated that unless Stantec sees a high incidence of missing information on forms, missing information



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can be addressed on a form-by-form basis. Beth added that for every project there will always be questions that need to be addressed.

Beth asked if Stantec field verifications will include egg mass counts or if they will be more of a check. Bryan responded that the field verifications will not include egg mass counts, but will include presence/absence type checks and a verification of other data on the forms. Beth agreed with this approach.

Bryan provided a response to the points that Beth raised in her May 15, 2014 email and confirmed that the information noted in that email could be provided. One exception is egg mass maturity; this information may not be available because it was not data collected during all of those years. Beth indicated that without egg mass maturity data, MDIFW would review timing of the visits, and may lean towards identifying pools as PSVP if the timing was uncertain.

Beth confirmed that old data forms do not need to be updated to the new forms. Beth did note that any missing information will need to be provided in a useful format. Beth agreed that one spreadsheet of all the landowner information for each pool is acceptable.

Bryan reviewed the ground conditions and timeframe for the surveys this year. The season started late and went exceptionally fast on the summit.

Beth noted that if the timing window for surveys is not ideal for any vernal pool, such vernal pools will likely be considered PSVP. Beth also noted that if Stantec observes a lot of wood frog tadpoles in a pool, MDIFW is likely to lean toward calling it a PSVP if the timing isn't right to get accurate egg mass counts.

Bryan asked about pools that were only surveyed during one visit. Some pools may have gotten one visit, particularly if the visit was timed such that it occurred during the timing windows for both wood frogs and spotted salamanders. Beth replied that MDIFW would prefer two visits, but one visit may be acceptable as long the visit fits within what MDIFW knows for that year. Beth also recommended that for any pools with only one visit, Stantec should look at visit timing for pools nearby. Beth said she would be willing to share MDIFW's weather/seasonal



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data for certain years if Stantec has questions on past data as to whether one visit would be sufficient.

Beth indicated that Stantec should follow-up with Beth and Phillip deMaynadier on any subset of pools where there could be questions about dry-out dates.

Beth asked about the number of data forms expected for the Project and when they are expected to be provided to MDIFW. Bryan replied that there will be a few hundred data forms. It was decided that Stantec should get data forms to Beth for review by late summer. Beth noted that open to getting them in batches, as long as they are defined in a specific geographic area. EDPR plans to submit the application in October 2014.

Prescott, Joy

From: Johnston, Erin <erin.johnston@edpr.com>
Sent: Monday, June 16, 2014 5:27 PM
To: Wende_Mahaney@fws.gov
Cc: Chapman, Katie; Ingalls, Kellen; David Young (dyoung@west-inc.com); Jeff Gruver (jgruver@west-inc.com); Prescott, Joy
Subject: Number Nine - Northern long-eared bat summer survey plan
Attachments: Proposed Study Plan Number Nine Acoustic NLEB surveys.pdf

Hello Wende,

As part of the wildlife studies EDPR is conducting this year in order to develop the Number Nine Wind Farm in Aroostook County, ME, we are planning to perform summer acoustic surveys for northern long-eared bats. The attached proposed study plan outlines the goals, rationale and approach to conducting acoustic surveys designed to detect northern long-eared bat if they are present during summer within the Project area. The study plan follows the most up to date guidance from USFWS regarding designing, conducting and analyzing data from acoustic surveys to make presence or absence determinations for Myotis bats. We plan to start these studies as soon as possible.

I have attached the study plan to this email for your review and comment. I would also like to set up a call or in-person meeting to discuss any comments you have on the plan. Are you available in the next couple weeks for such a discussion?

Best,
Erin



Erin Johnston
EDP Renewables, North America
Environmental Affairs
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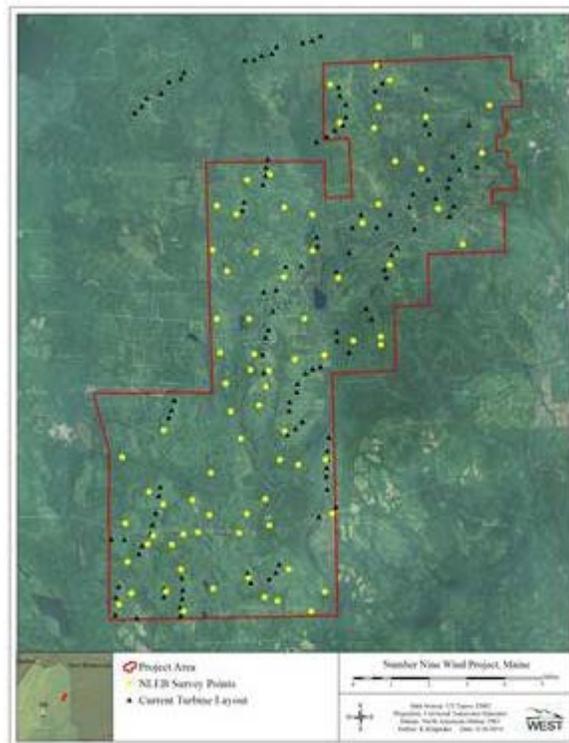
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From: Jeff Gruver [mailto:jgruver@west-inc.com]
Sent: Thursday, June 26, 2014 2:00 PM
To: Mahaney, Wende
Cc: Johnston, Erin; Chapman, Katie; Ingalls, Kellen; David Young (dyoung@west-inc.com)
Subject: Re: Number Nine - Northern long-eared bat summer survey plan

Hello Wende,

Please find attached a map for your review showing the distribution of potential survey locations for northern long-eared bat presence/absence surveys. Based on the aerial imagery I have placed survey points among suitable habitat and in locations likely to detect northern long-eared bats if they are present. Please let us know if you have any questions.

Thanks again for your time.
Jeff



Jeff Gruver
Senior Bat Biologist / Project Manager

WEST, Inc.
Environmental & Statistical Consultants

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Prescott, Joy

From: Emerson, Bryan
Sent: Friday, August 08, 2014 3:33 PM
To: Czapiga, Jason (Jason.Czapiga@maine.gov); Swartz, Beth <Beth.Swartz@maine.gov> (Beth.Swartz@maine.gov)
Cc: Jessica.damon@maine.gov; Chapman, Katie (Katie.Chapman@edpr.com); Johnston, Erin (erin.johnston@edpr.com); Ingalls, Kellen (Kellen.Ingalls@edpr.com); Prescott, Joy; Perry, John <John.Perry@maine.gov> (John.Perry@maine.gov)
Subject: Number Nine Wind Farm VP data form submission
Attachments: 0919_NN_VP_cover_letter_turbines.pdf

Jason and Beth,

I wanted to let you know that there is a FedEx delivery on its way to you with the first batch of vernal pool data forms for the Number Nine Wind Farm. You should receive it on Monday. I have attached the cover letter to this email which details what is included in the submission, but in summary, it includes hard copies of the forms, maps showing the locations of the pools, and a landowner table. We've also included shapefiles of the vernal pool points and pool boundaries. Copies of all of this information has been loaded on a CD, which is also included in the delivery.

As you requested, we are submitting these forms prior to the application being submitted to allow for their review. As stated in the cover letter, this submission is for the turbine area portion of the project. We are planning to provide additional forms in the coming weeks for the generator lead portions of the project.

Please let me know if you have any questions about the materials.

Thank you,
--Bryan

Bryan Emerson

Project Manager | Wetland Scientist
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30 Park Drive Topsham ME 04086-1737
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MDIFW and USFWS – Discussion about Bats

Number Nine Wind Project / 195600919

Date: August 13, 2014
MDIFW : John Perry, Charlie Todd, Amanda deMusz (phone)
DEP: Jessica Damon, Marie Lentine-Eggett
USFWS: Wende Mahaney
ACOE: Shawn Mahaney
EDPR: Katie Chapman, Erin Johnston, Kellen Ingalls
WEST: Dave Young, Jeff Gruver
Stantec: Joy Prescott, Brooke Barnes

MEETING GOALS

- Provide an update on bat surveys in-progress for project
- Discuss federal and state process for listed species
- Discuss general plans for post-construction monitoring and curtailment

BAT SURVEYS IN-PROGRESS

Katie Chapman, EDPR Project Manager for Number Nine Wind Project provided a brief overview of project and current status.

Jeff Gruver, WEST Bat Biologist, provided an overview of surveys currently in progress for the project (see Attachment A for details).

- Bat activity surveys conducted from April 28 to October 15. 8 anabat detectors deployed at 4 met sites and 2 additional detectors have rotated thru the project area at 12 temporary locations as of the end of July. At each met tower site, detector deployed on the met tower and detector deployed approximately 5 feet above ground level. Detectors in met tower were originally deployed at a height of 40 m; on July 29, 2 of the detectors were lowered to 20 m .
- Interim results of the bat activity surveys (April 28-July 27) included 758 detector nights and 704 bat echolocation passes for a rate of 0.93 bat passes per detector-night. 683 (90%) were from low-frequency producing species (e.g. silver-haired and hoary bats, which are migratory species and are most prone to mortality from wind turbines) and 21 were from high-frequency producing species (eastern red and little brown bats). During the first half of the season (April through July), bat activity has been very low. More bat activity recorded at the low (ground-based) detectors. Surveys will continue thru October 15. The rotating detectors will continue to be moved around to increase spatial coverage through the Project.
- Northern long-eared bat (NLEB) surveys were conducted at 84 locations for a minimum of 2 nights per USFWS guidelines. Calls were processed through two identification programs. Calls identified by either

August 13, 2014

Number Nine Wind Project – Bat Discussion with MDIFW and USFWS

Page 2 of 4

program suggesting NLEB presence were then reviewed by a bat biologist. No evidence of NLEB echolocation calls were identified in the dataset. Sampling will continue thru August 15 to cover additional areas with potential turbine locations.

Discussion

- Charlie Todd asked about expectations for results from ground-based detectors. He suggested that the report should describe these expectations, as well as the purposes for deploying at the selected heights in the met towers.
- Charlie indicated that most other projects in Maine have deployed fixed detectors at tree height.
- Charlie indicated that it seemed like a very low rate of detection. Jeff confirmed that these are only the results for the early part of the season; surveys are continuing through October 15.
- Charlie suggested that it could be valuable to continue surveys for NLEB through the fall because the species is still at risk while migrating. Jeff responded that there will still be information about this timeframe because the other acoustic detectors will still be deployed.
- Charlie discussed driving transect surveys that MDIFW has conducted in the state as a possible alternative.
- Charlie asked whether any tri-colored bat calls had been identified. Jeff responded that they have not.
- Charlie recommended deploying anabats in sites close to water bodies and in tree canopy areas.
- Erin asked how WEST addressed overlap between low and high detectors if both picked up the same bat. Jeff replied that the surveys can't unless there is enough separation between the detectors that they are unlikely to simultaneously record a single bat call.

FEDERAL AND STATE PROCESS FOR LISTED SPECIES

Charlie Todd provided an overview of the potential listing process for the little brown bat, northern long-eared bats, and eastern small-footed bat. He indicated that there is a state Individual Take Permit (ITP) process that could be included as part of the permit application and that adaptive management can be part of that process. This approach was incorporated for the Reliability Project by Central Maine Power a few years ago. He noted that if the take is exceeded, there could be implications for the status of the permit, although he was not certain of the specific implications.

Wende Mahaney provided an overview of the potential listing process for the northern long-eared bat. She indicated that, based on the information provided so far (i.e. no NLEB detected), it would be premature to assume that a Habitat Conservation Plan (HCP) would be needed. She also indicated that if Corps action will be needed, Section 7 consultation would be required. EDPR confirmed that the expectation is that a Corps permit will be required. An alternative approach could be to prepare an HCP, which would include intra-agency consultation (within the USFWS), that the Corps could use to satisfy their consultation requirements, **but that's not a process that Wende is very familiar with. In either case, the Corps** could not provide sign-off until the ITP was issued and the intra-agency Section 7 consultation was complete. Wende also indicated concerns about the potential workload for the Maine Field Office, and that northern long-eared bats were not the only listed species to be considered. EDPR acknowledged that additional discussions will be needed for both Canada lynx and Atlantic salmon, but that this meeting was focused on bats.

August 13, 2014

Number Nine Wind Project – Bat Discussion with MDIFW and USFWS

Page 3 of 4

Wende requested that it would be helpful for the Service to have a chart depicting the timeframe for the project from beginning to decommissioning to identify where agency permitting and jurisdiction occurs and direct and indirect effects throughout the project lifetime. From her perspective, this chart would help identify the appropriate permitting path. EDPR agreed to put together this chart.

Charlie Todd indicated that mist-netting conducted by the state within the past eight to ten years documented northern long-eared bats in the general area of the state as the project. He will provide that report to the meeting attendees.

POST-CONSTRUCTION MONITORING AND CURTAILMENT

Dave Young provided an overview of the planned approach for post-construction monitoring for the project (see Attachment A for details).

Erin Johnston requested additional information about MDIFW perspective on post-construction monitoring and curtailment. Charlie Todd responded that their focus is on avoidance, minimization, and mitigation. From their perspective, curtailment avoids mortality. Given the potential listing, any added mortality of these species could be significant, and must be considered under Site Law.

Discussion

- Erin remarked that blanket 6m/s curtailment as a minimization measure can mean very different things for different projects based on habitat and project location.
- Brooke asked if MDIFW would be amenable to considering project-by-project data and minimization measures. Marie Lentine-Eggett indicated that DEP considers each project on its own merits.
- Dave said that the HCP would estimate take over the lifetime of the project (25-30 years) and through monitoring and adaptive management required in the process developers can change operation practices to insure compliance (i.e., if take is higher than predicted). ITPs are just for federally listed species, HCPs however could address state concerns if other non-federally listed species or species expected to be listed are built into the HCP. An HCP can be good for the species, the state, and the developer.
- Dave remarked that curtailment mostly benefits the silver-haired, hoary and red bats as they're the species that have experienced the greatest mortality from turbines. In general, mortality of the *Myotis* species across the U.S. has been less than 10% of all bat fatalities.
- Erin asked how MDIFW knew whether curtailment was working or how a project would show compliance with the permit if no post construction monitoring is required. Charlie said that MDIFW has doubts about the validity of post-construction monitoring results.

NEXT STEPS

- Charlie will provide the report of mist-netting conducted by MDIFW.
- EDPR will provide Wende with a chart of the project timeframe that identifies potential direct and indirect effects.
- EDPR will schedule a follow-up meeting with Wende to discuss potential next steps for federal review.
- John Perry will provide a copy of the current MDIFW post-construction monitoring protocol.

Attachment A
Presentation Slides

Prescott, Joy

From: Johnston, Erin <erin.johnston@edpr.com>
Sent: Friday, August 15, 2014 3:13 PM
To: Call, Erynn (Erynn.Call@maine.gov); Nystrom, Sarah (sarah_nystrom@fws.gov)
Cc: Perry, John (John.Perry@maine.gov); Todd, Charlie (Charlie.Todd@maine.gov); Hoppe, Richard (Richard.Hoppe@maine.gov); DeMusz, Amanda J (Amanda.J.DeMusz@maine.gov); Chapman, Katie; Ingalls, Kellen; David Young (dyoung@west-inc.com); Prescott, Joy
Subject: Number Nine - aerial nest survey report
Attachments: Number Nine Aerial Survey Report (Aug 12 2014).pdf

Hello Erynn and Sarah,

Attached is the aerial nest survey report for the Number Nine Wind Farm. I would like to schedule a time to discuss the results with each of you. Please let me know your availability in the next few weeks.

Best,
Erin



Erin Johnston
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Prescott, Joy

From: Emerson, Bryan
Sent: Friday, August 15, 2014 1:10 PM
To: Czapiga, Jason (Jason.Czapiga@maine.gov); Swartz, Beth <Beth.Swartz@maine.gov> (Beth.Swartz@maine.gov)
Cc: Jessica.damon@maine.gov; Perry, John <John.Perry@maine.gov> (John.Perry@maine.gov); Chapman, Katie (Katie.Chapman@edpr.com); Johnston, Erin (erin.johnston@edpr.com); Ingalls, Kellen (Kellen.Ingalls@edpr.com); Prescott, Joy
Subject: Number Nine Wind Farm VP submission - Bridal Path
Attachments: Number_Nine_VP_cover_letter_bridal_path_FINAL.pdf

Jason and Beth,

There is another FedEx delivery on its way to you with the second batch of vernal pool data forms for the Number Nine Wind Farm (this one is much smaller, FYI). You should receive it on Monday. I have attached the cover letter to this email which details what is included in the submission, but similar to the last submission, it includes hard copies of the forms, maps showing the locations of the pools, and a landowner table. We've also included shapefiles of the vernal pool points and pool boundaries. Copies of all of this information has been loaded on a CD, which is also included in the delivery.

As you requested, we are submitting these forms prior to the application being submitted to allow for their review. As stated in the cover letter, this submission is for the Bridal Path (southern generator lead) portion of the project. We are planning to provide additional forms in the coming weeks for the remaining generator lead portions of the project.

Please let me know if you have any questions about the materials.

Thank you,
--Bryan

Bryan Emerson, PWS

Project Manager | Wetland Scientist
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MEETING NOTES

MEETING DATE: September 4, 2014

LOCATION: Teleconference

ATTENDEES: Number Nine LLC

Erin Johnston
Katie Chapman
Kellen Ingalls

MDIFW

John Perry
Bob Stratton
Erynn Call

WEST

Dave Young

STANTEC

Joy Prescott

SUBJECT: **Number Nine Wind Project – Aerial Surveys**

NOTES BY: Erin Johnston

1.0 Introductions/Status of Project

Erin Johnston presented the agenda for the meeting and meeting goals:

- Provide an overview of the objectives, methodology, and results of the spring 2014 aerial surveys
- Discuss any questions or comments regarding the aerial surveys that Maine Department of Inland Fisheries and Wildlife (MDIFW) and/or Maine Department of Environmental Protection (DEP)

Erin Johnston then provided update of the current status for the Number Nine Wind Farm Project (the “Project”). The Project has a 250 MW Power Purchase Agreement that was executed in September 2013. The Project is proposing to install 125 2MW Gamesa turbines along with an approximately 50 mile generator lead line to Haynesville, Maine. Application submittal to DEP is anticipated to be Q4 2014 with a goal of October 2014, and the Project is expected to be operational in December 2016.

2.0 Aerial Survey

Dave Young gave a presentation of the aerial surveys, including survey objectives, methodology, and results. Focal species were eagles, great blue herons, other raptors, and objectives were to identify species and locations of nesting raptors and great blue heron rookeries in and surrounding the Project area, provide data that could be used in a potential impact assessment for nesting raptors and great blue herons, and provide data on nest and rookery locations that could be useful in Project planning.

Study area was proposed turbine locations and area encompassed by 4- and 10-mile buffers. Buffers were based on USFWS guidelines along with MDIFW guidelines. Dave presented a map of the study area

First survey was done in late April – based on recommendations of MDIFW – and was conducted over a 3-day period to get full coverage. Transect surveys were performed across the entire 10-mile buffer study area. The second survey was done in early June to return to each nest identified in the first survey to assess productivity.

Erynn Call requested clarification that in the June survey only nests identified in April were visited. Dave answered that the main objective of the June survey was to assess productivity, so yes the focus was visiting the nests found in April, but searches for new nests were continued while the helicopter was enroute between nests.

Dave gave an overview of the results including a map of the nests identified during the surveys. Three bald eagle nests were identified, two productive and one visited. One great blue heron (GBH) rookery location that was provided by MDIFW could not be located during surveys, but one new GBH rookery was identified during surveys. One additional GBH rookery was identified during wetland ground surveys.

3.0 Discussion

Erynn noted that during our first meeting back in October, MDIFW provided the Project with guidelines. The guidelines recommend that survey design is discussed with MDIFW. Erynn asked why we did not follow through with this kind of discussion. Dave answered that we did follow through in our March meeting and incorporated comments from MDIFW into our plan based on feedback from that meeting. Erynn responded that she expected more discussion prior to pre-construction surveys.

Erynn outlined additional concerns regarding the aerial surveys, including methodology (no meandering or call play-back ground based surveys done) and future nest identification. Erynn commented that low nest density does not equate to low impact to species, and noted that we may have found more nests if we had more robust studies. Dave observed that it is a managed logging area, and that contributes to low density of nesting raptors in general.

John asked if we would expect to see more nests, especially closer to turbines. Dave answered that in managed forests, where trees get cut down often, raptor territories may shift to areas

where they can nest more permanently. Generally you do not see high nest densities with raptors because they defend their territories, but there are even lower numbers in places like managed forests where trees used for nests may get cut down. John asked if we have more information to share about raptors, e.g. the raptor migration report. Dave answered that we have the spring raptor migration report ready, and the eagle observation survey report will be available in the next few weeks.

Joy asked that Dave clarify whether eagle observation surveys include raptor observations. Dave answered that raptors are recorded during those surveys and incidental observations of raptors, and other avian species or any interesting species, are recorded while the field staff is moving around the Project area as well. Dave also noted that behaviors of raptors observed during the raptor surveys are recorded.

Bob Stratton stated that MDIFW needs adequate information to perform a thorough review of our application, so the Project needs to be in contact with species specialists.

Joy asked if, now that Erynn has clarification as to what is being done on the ground with regard to raptor nest identification, she agrees with our methodology. Erynn reiterated that she needs to receive study protocols prior to study initiation.

Erin asked for clarification on whether the study protocol for the aerial survey, now that we have provided additional information, is acceptable to Erynn. Erynn responded in the affirmative for eagle and GBH, not for all raptor species.

Erynn requested a summary of training provided to staff performing on the ground surveys along with protocols for incidental observations. Erin responded that we can provide that information.

Erynn commented that Table 3 should be labeled as nests detected. Erin responded that we will make that change.

Discussion occurred regarding impact to raptors, and Erynn noted that indirect effects should be discussed along with direct (fatality) effects.

Erynn noted that osprey are not of particular concern at this location. Dave noted that it is only mentioned because it was the only other species of raptor with active nests identified.

Joy asked if there is specific information that Erynn will need to evaluate the nest surveys. Erynn said she will get back to us in the next few days.

4.0 Action items

The Project will provide qualifications of field staff as well as parameters for incidental observations.

Erynn Call will provide written comments on the report, including additional information needed, if any.

Prescott, Joy

From: Johnston, Erin <erin.johnston@edpr.com>
Sent: Friday, September 05, 2014 12:55 PM
To: Nystrom, Sarah (sarah_nystrom@fws.gov); Perry, John (John.Perry@maine.gov); Stratton, Robert D (Robert.D.Stratton@maine.gov); Call, Erynn (Erynn.Call@maine.gov); Hoppe, Richard (Richard.Hoppe@maine.gov); jessica.damon@maine.gov
Cc: David Young (dyoung@west-inc.com); Prescott, Joy; Chapman, Katie; Ingalls, Kellen
Subject: Number Nine - raptor migration survey report
Attachments: RMS Report Number Nine (September 5 2014).pdf

Hello all,

Attached is the spring 2014 raptor migration survey report for the Number Nine Wind Farm.

I would like to have a meeting in the next few weeks – after you have had a chance to review the report - to discuss the results. Below is a link to a doodle poll; please fill out the poll so that I can get a time scheduled that is good for everyone.

<http://doodle.com/evb33y2utkpcsydh>

Best,
Erin



Erin Johnston
EDP Renewables, North America
Environmental Affairs
134 N. LaSalle Street, Ste. 2050, Chicago, IL 60602
312.533.1051
www.edpr.com www.horizonwind.com

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Prescott, Joy

From: Pelletier, Steve
Sent: Tuesday, September 09, 2014 10:35 AM
To: Prescott, Joy; Johnston, Erin (erin.johnston@edpr.com) (erin.johnston@edpr.com); Chapman, Katie (Katie.Chapman@edpr.com) (Katie.Chapman@edpr.com); Ingalls, Kellen; dyoung@west-inc.com
Subject: FW: Number Nine - radar reports

FYI; short and sweet, Steve

Steve Pelletier, CWB, PWS, LPF

Principal
Stantec
30 Park Drive Topsham ME 04086
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steve.pelletier@stantec.com



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From: Hodgman, Tom [mailto:Tom.Hodgman@maine.gov]
Sent: Tuesday, September 09, 2014 10:08 AM
To: Pelletier, Steve
Cc: Perry, John
Subject: RE: Number Nine - radar reports

Thanks Steve. I did get your voicemail. Best of luck with the fall data collection. I look forward to seeing the results.

Tom

From: Pelletier, Steve [mailto:steve.pelletier@stantec.com]
Sent: Monday, September 08, 2014 5:39 PM
To: Perry, John; 'Johnston, Erin'
Cc: Stratton, Robert D; Hoppe, Richard; Damon, Jessica; David Young (dyoung@west-inc.com); Prescott, Joy; Chapman, Katie; Ingalls, Kellen; Hodgman, Tom
Subject: RE: Number Nine - radar reports

Hi Tom,

Just following up on our radar call last Friday; I also made a separate attempt to call you directly after but only got your voicemail.

My apologies for any potential confusion re: the ongoing radar related work and prior work plans. Our approach is and always has been to ensure we discuss all our study plans well in advance so that we avoid just these issues. To help address any potential concerns I wanted to confirm EDP's agreed to move forward with the fall radar surveys. As discussed we left the equipment on site and operational and were able to immediately begin surveys – for what it's worth I'm glad we had our call when we did as it avoided any protracted delays that might have truly jeopardized the ability to get a full data set. To help minimize potential

concerns they've also agreed to go ahead w/ a NEXRAD analysis of both our Spring 2014 and Fall 2014 data sets.

I appreciate we've both had the chance over time to understand what's behind radar studies and some of the key issues re: broad front migration but, as always, I'm happy to further discuss the ongoing work, particularly in terms of comparing those results w/ other spring/fall studies for which I have data. It also goes w/o saying that you're always welcome to get out on the mountain some evening to observe our operations and play a bit w/ the radar. Just let me know what works on your end and I'll try to keep my own schedule clear.

As always, please feel free to give me a call anytime if you have questions or concerns. Thanks, Steve

Steve Pelletier, CWB, PWS, LPF

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From: Perry, John [mailto:John.Perry@maine.gov]

Sent: Tuesday, September 02, 2014 7:50 PM

To: 'Johnston, Erin'

Cc: Stratton, Robert D; Hoppe, Richard; Damon, Jessica; David Young (dyoung@west-inc.com); Pelletier, Steve; Prescott, Joy; Chapman, Katie; Ingalls, Kellen; Hodgman, Tom

Subject: RE: Number Nine - radar reports

Hi Erin,

We have a pre-application for another wind project scheduled for 1:00, so we could either squeeze the radar discussion in after the aerial survey call, or we could have a separate discussion Friday after 11:00. Let us know which would be better—thanks.

John

From: Johnston, Erin [mailto:erin.johnston@edpr.com]

Sent: Tuesday, September 02, 2014 6:58 PM

To: Perry, John

Cc: Stratton, Robert D; Hoppe, Richard; Damon, Jessica; David Young (dyoung@west-inc.com); Pelletier, Steve (steve.pelletier@stantec.com); Prescott, Joy (joy.prescott@stantec.com); Chapman, Katie; Ingalls, Kellen; Hodgman, Tom

Subject: RE: Number Nine - radar reports

Hello John,

Did you hear back from Tom and Rich? Shall we plan to have a call about radar studies on Thursday either before or after the aerial survey call?

Thanks,

Erin

Erin Johnston

EDP Renewables, North America
Environmental Affairs
312.533.1051

From: Perry, John [<mailto:John.Perry@maine.gov>]

Sent: Friday, August 29, 2014 12:34 PM

To: Johnston, Erin

Cc: Stratton, Robert D; Hoppe, Richard; Damon, Jessica; David Young (dyoung@west-inc.com); Pelletier, Steve (steve.pelletier@stantec.com); Prescott, Joy (joy.prescott@stantec.com); Chapman, Katie; Ingalls, Kellen; Hodgman, Tom

Subject: RE: Number Nine - radar reports

Hi Erin,

I apologize for not responding sooner. I am available today, but both Tom and Rich need to be in on the meeting, and I believe Tom is out of the office today.

My schedule for next week is pretty full, but I could discuss Wednesday (busy between 10:30 and 2:00, otherwise free) or Friday after 10:30. Or do you think we could add it to our Thursday aerial survey conference call next Thursday? Tom, Rich—do these times work for you?

John

From: Johnston, Erin [<mailto:erin.johnston@edpr.com>]

Sent: Friday, August 29, 2014 12:13 PM

To: Hodgman, Tom; Perry, John

Cc: Stratton, Robert D; Hoppe, Richard; Damon, Jessica; David Young (dyoung@west-inc.com); Pelletier, Steve (steve.pelletier@stantec.com); Prescott, Joy (joy.prescott@stantec.com); Chapman, Katie; Ingalls, Kellen

Subject: RE: Number Nine - radar reports

Hello Tom and John,

I hope to discuss the Number Nine radar reports with you as soon as possible. Are you free today or early next week?

Thank you,

Erin

Erin Johnston

EDP Renewables, North America
Environmental Affairs
312.533.1051

From: Johnston, Erin

Sent: Friday, August 22, 2014 1:33 PM

To: Hodgman, Tom (Tom.Hodgman@maine.gov); Perry, John (John.Perry@maine.gov)

Cc: Stratton, Robert D (Robert.D.Stratton@maine.gov); Hoppe, Richard (Richard.Hoppe@maine.gov); jessica.damon@maine.gov; David Young (dyoung@west-inc.com); Pelletier, Steve (steve.pelletier@stantec.com); Prescott, Joy (joy.prescott@stantec.com); Chapman, Katie; Ingalls, Kellen

Subject: Number Nine - radar reports

Hello Tom and John,

Attached are nocturnal radar survey reports for the Number Nine Wind Farm for spring 2014 and fall 2008. We have previously discussed the necessity of continuing radar surveys this year into the fall, but I request that you review the fall 2008 report before making that determination.

The fall 2008 surveys were discussed with MDIFW: Fall radar stations were selected following site screening across the Project area by a WEST radar biologist on August 8, 2008, and field review by WEST staff and Mr. Tom Hodgeman and Mr. Richard Hoppe of MDIFW on August 22, 2008. During the August 22nd site visit, radar images in vertical and horizontal mode were reviewed and discussed and site selection and the observation schedule determined. Further, the surveys employed a methodology in line with current recommendations, and the results obtained do not suggest that nocturnal migration over the site is larger or vastly different than numerous other sites studied.

EDP Renewables does not believe that additional radar surveys will uncover any new information or help to inform Project siting or impact analysis. Both WEST, Inc. and Stantec concur with this assessment.

It may be appropriate to set up a call to discuss these reports. Please let me know your availability for a call late next week.

Best,
Erin



Erin Johnston

EDP Renewables, North America

Environmental Affairs

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Prescott, Joy

From: Pelletier, Steve
Sent: Friday, September 19, 2014 6:19 PM
To: Hoppe, Richard
Cc: Perry, John (John.Perry@maine.gov); Johnston, Erin (erin.johnston@edpr.com) (erin.johnston@edpr.com); Prescott, Joy; Chapman, Katie (Katie.Chapman@edpr.com) (Katie.Chapman@edpr.com); Ingalls, Kellen; Tetreau, Thomas
Subject: DWA surveys
Attachments: 0919_DWA_050114.pdf; 00919_01_DeerWinteringHabitat.pdf; DWA_stands.xlsx; Number Nine 100068 DWA Forest Types.pdf; Number Nine 100075 DWA Forest Types.pdf

Hi Rich,

I'm following up on our past deer yard discussions w/ hopes (dreams?) of setting up a time next week or near term to better discuss best routing options. To help get your feet under you I've attached several different documents for your review, including:

- 1) Stantec's 2014 DWA report. It describes how field surveys were conducted, including conditions at the time of the survey, results, discussion, and recommendations. I'll note that despite the late winter survey period, we found the hard winter conditions through March 2014 were still influencing deer use within the DWA's. I'm happy to walk through the report in greater detail when you're ready.
- 2) A map produced by Stantec of individual forest stands w/in the mapped deer yard per Prentice & Carlisle stand typing. In accordance w/ our discussions in the field, mapped stands were in turn typed in terms of deer yard habitat (i.e., Deer Yard Habitat, Marginal DWH, and non-DWH). Briefly, those individual stands not meeting MDIFW's 'traditional' DWA standards were hardwood dominated, too open in terms of overhead canopy closure, or presently too low in height. "Marginal" areas involved stands with mixed composition (i.e., 50-75% softwood) but were otherwise suitable in terms of height and canopy closure.
- 3) An EXCEL spread sheet (DWA-stands) with the individual forest stand and DWH types (I included this as part of the attribute table to help illustrate how stands were classified, please feel free to ignore);
- 4) A map of DWA 100068 depicting locations of each of 345 survey points along 10 transects (we were unable to obtain forest stand maps from the landowners). Each point is typed (and colored) in terms of habitat value (red=high, green=low). We have good documentation of site conditions throughout the mapped areas (for both this and DWA 100075 immediately below), including both point by point stand descriptions and GPS-located photos of representative areas; again I can walk you through the mapping and observed results.
- 5) A map of DWA 100075 similarly depicting locations of each of 142 survey points along 8 transects. As above, each point is typed (and colored) in terms of habitat value (red=high, green=low).

The obvious goal is to concentrate clearing impacts in areas with the lowest habitat values, limit as able any disturbances to the marginal areas, and avoid any disturbance to the high value areas altogether. Some of the observed patterns are self-evident but I'd appreciate the chance to discuss the findings, what's behind the work being presented here, and recommendations for moving forward with the least disturbance. Let me know if/how you'd like to proceed; either via phone or in the field works for me. I appreciate you've got a busy time coming up over the next few weeks so let me know how best to accommodate your schedule. Thanks, have a good weekend, Steve

Steve Pelletier, CWB, PWS, LPF

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Prescott, Joy

From: Pelletier, Steve
Sent: Friday, September 19, 2014 6:43 PM
To: Jennifer.Vashon@maine.gov; McCollough, Mark
Cc: Johnston, Erin (erin.johnston@edpr.com) (erin.johnston@edpr.com); Perry, John (John.Perry@maine.gov); Prescott, Joy; Chapman, Katie (Katie.Chapman@edpr.com) (Katie.Chapman@edpr.com); Ingalls, Kellen
Subject: #9 Lynx Report
Attachments: Number_Nine_Lynx_Report 042914.pdf

Hi Mark, Jennifer,

Hope this finds you well. I've attached, for your review and comment, Stantec's Number 9 (2014) Lynx Report, including desktop/field survey methods, conditions at the individual time of the survey events, results, and discussion. Not surprisingly but the commercial/industrial forest conditions in much of this region are conducive to supporting lynx and evidence of their presence was not uncommon nor unexpected.

Please let me know if you have any questions or concerns. I'm happy to walk through any aspect of the field effort or our findings with you. Thanks, Steve

Steve Pelletier, CWB, PWS, LPF

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steve.pelletier@stantec.com



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Prescott, Joy

From: Pelletier, Steve
Sent: Thursday, October 09, 2014 12:57 PM
To: Thomas.Hodgman@maine.gov
Cc: John Perry; Prescott, Joy; Erin Johnston (erin.johnston@edpr.com)
Subject: RE: #9 radar site

Hi Tom. Trying again re: any interest you might have in a #9 radar site visit before we complete the study; my prior message was apparently kicked back. Thanks, Steve

-----Original Message-----

From: Pelletier, Steve
Sent: Tuesday, October 07, 2014 4:57 PM
To: Thomas Hodgeman
Cc: John Perry; Prescott, Joy; Erin Johnston (erin.johnston@edpr.com)
Subject: #9 radar site

Hi Tom,

Hope this finds you well. I'm checking in to see if you have any interest (or opportunity?) in visiting our #9 radar site before we finish up the fall surveys. The surveys themselves have gone well to date and as scheduled. I understand it's a busy time and that you've seen our ops before but thought you still might like the chance to get out on the site. Let me know if there's interest and I'll coordinate logistics on this end. Thanks, Steve

Sent from my iPhone

Prescott, Joy

From: Johnston, Erin <erin.johnston@edpr.com>
Sent: Friday, October 17, 2014 1:12 PM
To: Todd, Charlie (Charlie.Todd@maine.gov); Perry, John (John.Perry@maine.gov); Stratton, Robert D (Robert.D.Stratton@maine.gov); jessica.damon@maine.gov; Wende_Mahaney@fws.gov; Shawn.B.Mahaney@usace.army.mil; Hoppe, Richard (Richard.Hoppe@maine.gov); DeMusz, Amanda J (Amanda.J.DeMusz@maine.gov)
Cc: Chapman, Katie; Ingalls, Kellen; David Young (dyoung@west-inc.com); Jeff Gruver (jgruver@west-inc.com); Prescott, Joy
Subject: Number Nine - interim acoustic bat report
Attachments: Number Nine Interim Bat Report_Final.pdf

Hello everyone,

Attached is the interim acoustic bat report for the Number Nine Wind Farm.

I would like to have a meeting in the next few weeks – after you have had a chance to review the report - to discuss the results. I will send out a link to a doodle poll soon so that I can get a time scheduled that is good for everyone.

Best,
Erin



Erin Johnston
EDP Renewables, North America
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Prescott, Joy

From: Johnston, Erin <erin.johnston@edpr.com>
Sent: Friday, October 24, 2014 3:58 PM
To: Call, Erynn; David Young (dyoung@west-inc.com); Pelletier, Steve
Cc: Haskell, Shawn; Perry, John; Stratton, Robert D; Prescott, Joy; Chapman, Katie; DeMusz, Amanda J; Hoppe, Richard; Allen, Brad; Damon, Jessica
Subject: RE: Number 9 Wind Project Raptor Migration 10/8/14 Meeting Notes
Attachments: 20141008_MDIFW RMS Meeting DRAFT.pdf; MDIFW_NUMBER 9_RAPTOR_100814 (with responses).pdf; NN_DEM_close_20131021.jpg; NN_DEM_20131021.jpg

Hello Erynn,

Attached are responses to your comments and questions regarding the Number Nine raptor migration survey report. EDPR responses to your comments and questions are included in red within your original document.

Because your meeting notes focused on the specific comments and questions you had on the raptor migration survey report, I have also provided meeting notes that document discussion that occurred during the October 8 meeting. Please let me know if you have comments, questions, or additions to the meeting notes.

I look forward to visiting the site with you next week. We plan to visit the raptor migration survey location as well as some of the eagle and raptor observation survey locations. Please let me know if there are additional locations you would like to see.

Best,
Erin

Erin Johnston
EDP Renewables, North America
Environmental Affairs
312.533.1051

From: Call, Erynn [<mailto:Erynn.Call@maine.gov>]
Sent: Thursday, October 16, 2014 10:30 AM
To: David Young (dyoung@west-inc.com); Johnston, Erin; Pelletier, Steve (steve.pelletier@stantec.com)
Cc: Haskell, Shawn; Perry, John; Stratton, Robert D; Prescott, Joy (joy.prescott@stantec.com); Chapman, Katie; DeMusz, Amanda J; Hoppe, Richard; Allen, Brad; Damon, Jessica
Subject: Number 9 Wind Project Raptor Migration 10/8/14 Meeting Notes

Hello All,

Please find attached notes from the 10/8/14 raptor migration survey meeting. As always, feel free to follow up and contact us at any time with additional comments or ideas.

Kind Regards,
Erynn

Erynn Call
Raptor Specialist, Bird Group
Maine Dept. Inland Fisheries & Wildlife
650 State St., Bangor, ME 04401

Phone: (207) 941-4481

Cell: (906) 630-0266

Fax: (207) 941-4450

Email: erynn.call@maine.gov

Website: <http://www.maine.gov/ifw/>

DRAFT - MEETING NOTES

MEETING DATE: October 10, 2014

LOCATION: MDIFW Office, Bangor ME

ATTENDEES: **EDPR**
Erin Johnston
Katie Chapman (phone)
Kellen Ingalls (phone)

MDIFW
Erynn Call
Bob Stratton
Shawn Haskell

WEST
Dave Young

STANTEC
Joy Prescott (phone)
Steve Pelletier (phone)

SUBJECT: **Number Nine Wind Project – Raptor Surveys**

NOTES BY: Erin Johnston

Introductions/Status of Project

Erin Johnston and Dave Young presented the agenda for the meeting and meeting goals:

- Provide an overview of the objectives, methodology, and results of the Number Nine raptor and eagle surveys to date
- Discuss any questions or comments regarding the surveys that Maine Department of Inland Fisheries and Wildlife (MDIFW) has
- Discuss the analysis and next steps to address raptors for the project

Spring Raptor Migration Survey (RMS) and Eagle and Raptor Observation Survey (EROS)

Dave presented the methods and results of the spring 2014 raptor migration survey; summary slides based on information from the reports were reviewed. The survey was conducted according to recommendations of the MDIFW and used survey methods of established hawk migration organizations [Hawk Migration Association of North America (HMANA) and Hawk Watch International (HWI)]. The spring survey took place from March through May and was generally two surveys per week of 6-8 hours long between 9:00 a.m. and 6:00 p.m. from one

survey point (Number Nine Mountain) with good visibility over long distances. A fall survey is currently underway for September through early December.

A total of 34 raptors and 54 vultures were recorded during the spring surveys. The most common raptors observed were red-tailed hawk (14 individuals) and sharp-shinned hawk (7 individuals). Three bald eagles were observed during the surveys. Most raptor migrants were observed in the month of April and there were no clear trends in terms of time of day. The overall number of migrant raptors was low and less than ten times lower than passage rates recorded at the only other spring migration sites found for Maine which covered the same survey period.

A comparison of the spring 2014 raptor migration data was made with the spring migration surveys from 2008. Those surveys were conducted from two survey stations and according to MDIFW recommendations at that time in order to investigate the potential for spatial differences in migration across the site. The methods of the surveys and approximate number of survey hours per day were the same in both years. No differences were found between the survey stations in 2008 so the data were combined. The overall raptor passage rate in spring 2008, 0.34 individuals per observer-hour, was similar to the 2014 spring raptor passage rate of 0.24 individuals per observer-hour. The vulture passage rate in 2008, 0.21 individuals per observer-hour, was roughly half the vulture passage rate in 2014, or 0.44 individuals per observer-hour.

Dave also gave a summary of the eagle and raptor observation surveys (EROS). These were started in the fall 2013 season and were continued again in the spring and summer 2014. Access to the study area is difficult in the winter due to snow cover so no EROS have been conducted during the winter season (December, January, February). The number of survey locations was determined based on the USFWS Eagle Conservation Plan (ECP) guidelines and was the number of plots, defined as the point and the area within an 800 m radius circle, that was needed to provide 30% coverage of the area within 1000 m of the proposed turbine locations. Twenty-four stations/plots were surveyed in the fall 2013 and 32 were surveyed in the spring/summer 2014. The survey effort per plot varied (due to access constraints) but the target was one hour of survey per plot per month. The survey target was at least 200 hours of survey.

Over the three seasons of study, 250 survey hours were conducted. A total of 13 eagle minutes, based on observations of 9 bald eagles, were recorded during the surveys. Other common raptors recorded were red-tailed hawk (19 individuals), broad-winged hawk (8 individuals), and sharp-shinned hawk (6 individuals).

Important conclusions were the low number of raptors seen in both surveys, no areas or times of concentration were found, and species composition was typical for the region with no unusual raptors seen and no golden eagles seen to-date. Results could be based on site characteristics that may not be conducive the raptor migration and/or dense concentrations of resident/breeding raptors.

Discussion

Erynn Call read from a list of comments regarding the RMS consisting primarily of questions about the RMS report and requests for additional information to be included in the RMS report. Erynn subsequently provided the comments to EDPR in writing. The below focuses on discussion that occurred during the meeting, but does not describe the discussion for each comment Erynn listed. EDPR will provide a response to each of Erynn's comments in a separate document.

The Survey protocol for the on-going fall RMS surveys was discussed. Dave stated the intent is to continue surveys into early December to ensure we capture the timing of potential golden eagle migration through Maine. Erynn Call requested that EDPR provide a detailed survey protocol for the fall RMS. EDPR agreed to do so.

The spring surveys were reviewed against the MDIFW recommendations; discrepancies were noted related to the dates of surveys and number of years of surveys. Dave noted that RMS surveys provide temporal coverage while EROS meets spatial coverage, so results from both should be used to evaluate the Project. None of the data collected to date and including that from 2008 suggests that the site has a concentration of raptor use either during the migration seasons or breeding seasons. Dave added that even if data was not collected 100% in the way that MDIFW might want to see, it is still data that can be evaluated and that there is value in being able to evaluate all data for meeting the objectives for collecting data.. A weight of evidence approach is commonly taken where multiple data sources are used to address questions, and both the Project and MDIFW need to be sure we are looking at all data available.

Steve Pelletier indicated that data regarding raptor use of the site gathered thus far was generally at, below, or well below observations at other projects in Maine, and when considered in conjunction with the overall low rate of wind-related raptor mortality, he does not see a need for high concern about impact to raptors at the Project site.

Discussion occurred regarding the limitations of the data and surveys that should be included in the report so that they are evaluated in the proper context. Erynn commented that the dates and times of each survey should be included in the report.

The need for surveys beyond this year was discussed in the context of the permitting/project development schedule. Erin explained that due to the Power Purchase Agreement, the Project must be operational by the end of 2016. In order to meet this schedule, we are submitting our application in late November 2014. Studies in 2015 will be completed too late to be considered in the application. Erin inquired as to how we can proceed given that timeframe. Bob Stratton replied that MDIFW will be cognizant of the timeframe for the Project and suggested MDIFW help identify which turbines may be of higher concern based on raptor surveys. Bob added that perhaps surveys can be conducted after issuance of the permit (post-construction surveys). Erin noted that the Bird and Bat Conservation Plan (BBCS) for the Project, currently under development, will address responses to possible impacts after construction, for example, the BBCS will prescribe a response if a higher number of raptor fatalities than expected occur at the Project. Erin added that the BBCS may be the best way to address MDIFW's concerns about raptors, rather than continuing pre-construction raptor surveys in 2015. Bob agreed.

Dave added that determining the questions/objectives to be addressed with post-construction studies is important for determining what data to collect and what actions will be taken based on the data - an adaptive management approach.

Shawn Haskell inquired as to where EDPR is with the federal agencies and whether they are comfortable with the effort. Erin replied that the EROS protocol was provided to Sarah Nystrom, USFWS, for review and approval, and she is comfortable with the effort and protocol. Erin added that EDPR met with USFWS in September to discuss the results of the RMS and EROS.

Next Steps

Erynn

- Send comments on September aerial survey meeting and on EDPR notes from that meeting
- Review the 2008 results to fully understand the observation schedule
- Provide meeting notes and list of comments for the RMS
- Provide feedback on whether she will attend a site visit – can provide a raptor-specific site visit during Oct 22-23 or later

Erin

- Will send revised nest survey report

Dave

- Address Erynn's list of comments on the RMS report
- Call Erynn to follow up on the field trip and identify projects she would like to include in comparison.

10/8/14 EDPR NUMBER NINE WIND PROJECT MEETING COMMENTS

Erynn Call, MDIFW
(EDPR responses in red)

- A meeting was convened on 10/8/14 by EDPR to present the spring raptor migration survey report. Attendees included: Erynn Call, Shawn Haskell, Bob Stratton (MDIFW), Erin Johnston (EDPR), Dave Young (West), Joy Prescott, Steve Pelletier (Stantec, by telephone). The following comments were discussed and MDIFW committed to providing them to EDPR in writing to facilitate responses. Applicable sections of West’s 9/5/14 Raptor Migration Report are noted in parentheses after each comment for ease of reference.
- It is particularly imperative that MDIFW obtain all monitoring protocols and work with the applicant to develop an agreed upon methodology prior to data collection.
- As requested in prior communications, MDIFW emphasized the importance of:
 - obtaining monitoring proposals based upon minimum recommendations outlined in the Maine wind guidelines for pre-construction (and corresponding post-construction) studies prior to data collection. MDIFW species specialists need to receive a developed and detailed sampling plan in order to provide feedback on timing of surveys, site selection, sample size, sampling methodology, etc. The applicant should work closely with MDIFW to arrive at an agreed upon site-specific (e.g. accounts for extent of project, cumulative impacts) sampling work plan prior to initiating data collection.
EDPR and consultants previously met with MDIFW and USFWS to discuss proposed surveys and get feedback from the agencies (October 1, 2013; March 5, 2014). The survey protocols were adjusted based on comments from the agencies.
 - applicant responding to comments, questions, and concerns MDIFW discusses during meetings and subsequently outlines and delivers to applicant as meeting notes.

Please see comments and questions below:

1. Number 9 Wind Project will be the largest in New England, thus it is imperative that the applicant at least meet minimum data requests by MDIFW to infer impacts to migrating raptors. EDPR has collected less than the minimum. (Page 5, West Report).

SAMPLING	MDIFW RECOMMENDATION	EDPR DATA COLLECTED
Survey dates	March 1 – June 15	March 18 – May 29
Days per week	2 or more days per week	Approximately 2 days per week
Days per spring season	30 or more	22
Time per day	9 a.m. – 2 hrs before sunset (avg over season ~ 8 hrs/day), or later if birds are moving through the area	9 a.m. – 6 p.m. (approx. 6 hrs/day)
Number of years of spring migration data	2 or more years	1 year (note: 2008 data insufficient – see comment #21)

It is noted that field conditions may be difficult in early March. But, could the observation site be accessed by snowmobile? If not, could an alternate site that is more accessible but which offers similar observation opportunities be used in early March to enable West to meet MDIFW’s recommended observation period? It was also noted that West began fall observations in early September 2014, though MDIFW’s recommendations, which were previously provided, recommend

that fall observations occur between August and November 30. This repeated shortening of recommended observation periods is of significant concern to MDIFW in its ability to assess potential project impacts to raptors.

Based on HMANA reports, spring raptor migration rarely continues past the month of May (HMANA Eastern Flyway Seasonal Summaries). Most raptors have actually begun breeding activities by April. Similarly, HMANA Eastern Flyway reports describe the fall “early season” as the period from Sept 10-26; raptors are rarely actively migrating in August. By extending spring surveys too long and starting fall surveys too early, the data set on raptor migration is confounded by resident breeding birds and may not be representative of true raptor migration. However, with the Number Nine Project (“Project”) this is not likely a big issue as passage rates were very low in the spring in both 2008 and 2014, and the summer use estimate (reported in the same metric of individuals per observer-hour) was also very low. Therefore mixing in observations of resident birds with migrants really doesn’t change the overall assessment of the results of low exposure to raptors in the migration seasons and breeding season.

In addition to the raptor migration surveys (RMS), eagle and raptor observation surveys (EROS) were conducted every month from March through November providing data on raptor use in the “tails” of the recommended survey period. The benefit of having the EROS survey data is that it can be reported in the same metric as RMS data (individuals per observer-hour) and it provides good spatial coverage over the study area, and provides greater temporal coverage in that more days are surveyed.

2. Would the cases where the tally of observations represents repeated sightings of the same individual occur when the observer didn’t realize it was the same individual? (Page 7, West Report).

Yes – this is true for any field survey no matter what is being surveyed unless individual animals are uniquely marked.

3. In the calculation of mean use (raptors detected within an 800-m radius of the observer at any time at each plot), how many potential turbines (or what percentage of the total project area) were you evaluating from the 2014 spring survey station? Given the expansive footprint of the project area and the many turbines, it may be important to evaluate raptor migration movement and abundance patterns at more than one location. MDIFW recommends consecutive data collection at two survey stations during the second year of spring migration surveys. (Page 8, West Report).

For RMS an unlimited view shed is used to record individuals (p.5 of the report). A viewshed analysis is being conducted for the RMS to determine the number of turbines and percent of the Project area that could be seen from the survey station.

The surveys from 2008 used two points to investigate potential spatial differences in raptor migration. There was no difference in the passage rate for raptors from the two stations in 2008, in either the spring or fall seasons, and the overall raptor passage rate at both survey locations was low suggesting that the site does not experience high raptor migration and that raptor migration over the site is likely broad-front and not concentrated in any one location. [Note: the section referred to in the comment is being edited out of this report based on review and comment on the draft report. The relevance of standardizing RMS data to an 800-m radius plot is in comparing to other studies that used different survey methods.]

4. Your standardization to a 20 minute survey seems quite narrow and may result in low values the more the data are subdivided. It is important to capture and report variation as part of full survey days. To make comparisons to other studies, you would need to have data of similar daily, weekly, and spatial extents. If observers from other studies are out for more or less time it will be reflected in an averaged birds per hour value. Were you able to distinguish birds observed within 800 m in the other studies? (Page 8, West Report).

Subdividing the data does not result in low values – it simply scales the values to the amount of survey time. When making comparisons to other studies it is rare to find studies which have data from similar daily, weekly, and spatial extents; therefore, it is important to standardize the metrics from the analyses so that valid comparisons can be made. We are continuing discussions with MDIFW related to what other studies they would like to see results compared too.

[Note: the section referred to in the comment is being edited out of the report based on review and comment on the draft report. The relevance of standardizing RMS data to an 800-m radius plot is in comparing to other studies that used different survey methods.]

5. Frequency of occurrence may not be the only or best way to estimate risk to particular species. Flight height and path through the rotor swept height (RSH) may be more informative. It is also important to assess site specific landscape features and how this influences raptor flight height and path through RSH as well as the size and number of turbines across the project area (see next statement). (Page 8, West Report). Dave Young offered that West can combine a digital elevation map with prominent wind direction data to provide another tool for evaluating potential impacts.

Frequency of occurrence is only one of many analyses used to help interpret risk to birds or species. As stated in the report (p. 8) exposure to facility infrastructure is more accurately assessed by evaluating both percent of use and frequency of occurrence. The combination of use (individuals per unit of time), overall percent of all bird use, frequency of occurrence and time spent in the potential rotor swept area all help interpret risk to any given group or species of bird. However, based on the results of surveys to date, overall raptor use or passage rate for the site are low and even lower for individual species. Therefore, it is difficult at best to estimate risk to particular species because the sample sizes are generally low and may not represent what would be normal behavior for any given species.

A DEM has been prepared for the site that shows the varied topographic nature of the region. See further discussion on the site topography below for comment number 16.

6. The last statement of the report does not acknowledge Number 9's larger impact in terms of size and number of turbines and thus potential risk as compared to other projects in the region. How do you incorporate the size and number of turbines into your risk evaluation? (Page 8, West Report).

The number of turbines can be factored into the evaluation when estimating impacts. Risk is based on exposure of birds to the facility, i.e. what is at risk of an impact. This is typically based on what occurs in the project area and is determined from the results of the surveys. The number of turbines does not necessarily increase risk (i.e., does not change what birds are present) but can increase impacts, that is, a 100 turbine project would be assumed to have greater impacts than a 10 turbine project.

7. In the Raptor Flight Height and Behavior section you stated that the percentage of individuals flying within the RSH at any time was calculated using the lowest and highest flight heights recorded. Why wouldn't you use all values to get mean value and better capture the variation of behavior within the RSH?

Values for all observations are used. For the RMS, the point of first observation is used to calculate the percent of migrant raptors flying within the rotor swept heights (RSH). For EROS, the lowest and highest flight heights are evaluated to determine if any give report observed was within the RSH at some point. Given the nature of wildlife surveys each observation of an individual bird or animal varies in space and time so therefore are not consistent in regards to duration or the amount of information that can be recorded. However, each bird seen does have a point of first observation. Utilizing the consistent data from each observation helps reduce variability introduced by weighting observations differently. Please report measures of variation (standard deviation) along with the mean. (Page 8, West Report). Meeting notes suggest that West indicated that it does consider all heights for reports that enter the RSH. West further indicated that

their small data set may result in an inflated standard deviation. Please verify if these understandings are accurate and elaborate.

We are working on developing measures of variation for the analyses and will report them in the final report as appropriate.

8. Survey effort should be consistent among visits in terms of time spent per day. Daily mean and standard deviation should be reported in addition to average mean use per hour. (Page 8, West Report).

We are working on developing measures of variation for the analyses and will report them in the final report as appropriate.

9. In the results section, does 22 “times” mean 22 days? (Page 9, West Report). West indicated that it does.

Yes – edits were made to the report in this section to clarify.

10. Please provide the dates and time frames each survey was conducted to reflect the temporal distribution of sampling effort. (Page 9, West Report).

This is being added to the report.

11. Do you have any ideas on how you might use the temporal use data to mitigate impacts to migrating raptors? (Page 10, West Report).

No – raptor use/passage rate was so low at the site there is really no way to determine if/when impacts would be greater either seasonally or daily.

12. Please provide a measure of sample size (number of surveys) as part of Table 4 and as part of a table of daily summaries. (Page 10, West Report).

This is being added to the report.

13. How do the flight height characteristics compare to other studies? MDIFW didn’t see this mentioned in the Discussion. How did you incorporate these data into estimating risk? (Page 10, West Report).

No comparison with other studies has been made at this time. Raptor use/passage rate was so low at the site it did not indicate a large concern so the comparison with other sites was not made. The other studies to be compared to are being determined with MDIFW. The appropriate reports to use for comparison will be requested from MDIFW.

14. For the mean flight height reported in Table 5, see again question 7 above. (Page 11, West Report).

See response above to #7.

15. Prior to comparing raptor observations per hour to regional HawkWatch sites, I would subset their data to match a similar survey effort completed at the project site. The more time spent in the field there is a potential for the mean birds per hour to increase exponentially due to the clumped nature of migrating raptors. (Page 13, West Report).

This has been done and Table 8 has been expanded. The surveys are a sample of raptor migration through the Project. While more or less sampling could change the results some it is not likely to result in an exponential increase, unless the sampling effort was inadequate to represent reality. The sampling effort was based on the recommendations of MDIFW – 2 days per week, 6-8 hours per day – which they believe is a large enough sample to represent raptor migration in any given area.

16. Please provide a topographic map of the project area and position of turbines. Will raptors tend to migrate along ridgelines that run-north south for this project area? (Page 14, West Report).

The Project area does not have any north-south trending ridgelines – see the DEM for the project area and region. In addition the prevailing winds are from the WNW and it does not appear likely that elongated areas of “ridge lift” winds would be created in the Project. If ridge lift is created it will be localized at various hills/mountains and would not be in a manner that would be conducive to raptors moving north or south.

17. Sample size at inland sites (Number 9 and Cooper) is significantly less than the coastal location (Bradbury), thus limited inference can be made regarding migrating raptors. There is some evidence that inland sites may be as important as coastal areas for nocturnal migrants and thus more data are needed to evaluate raptor migratory behavior within inland regions. (Page 14, West Report).

Sample size was based on that recommended by the MDIFW, and it was not suggested that there were different sample sizes for inland versus coastal sites. Most raptors migrate during the day - drawing inferences about diurnal migration from nocturnal migration may be tenuous. Nocturnal migration is broad front (i.e. nocturnal migrants pass overhead in all locations on the landscape). In some locations, diurnal migrants tend to be concentrated by physiographic features (ridges, coast lines), however, large diurnal migrant birds will also utilize weather patterns (e.g. thermals) to assist with migration which likely results in less use of specific locations as weather changes and moves across the landscape. Data collected to date at the site over two years and different survey types suggests low migrant raptor passage rates.

18. Why did you exclude vultures in your comparison of the number of raptor observations per hour collected from the HMANA website? Vultures are included and reported as part of their migration protocol. Please include vultures in the HMANA baseline and as part of the monthly average number of raptors per observer hour at the #9 Project. (Page 14, West Report).

The analysis is being revised to include vultures.

19. Why comparing data only from April? Please expand on comparisons throughout the entire spring migration period (March – June 15) or identify limited scope of inference in terms of comparing to other sites. (Page 14, West Report). During the meeting, West indicated that the Cooper Site only had data for April.

The Cooper site was only surveyed in April, and the Bradury Mountain site was discontinued in mid-May which is the end of the typical spring raptor migration survey period for organizations such as HMANA. Comment number 15 above requests that the regional raptor migration data be sub-setted to the surveys dates at the Project. We can do both if needed – provide comparisons for the entire spring migration period and subset the data to the same survey dates.

20. Given above concerns, we are unable to best assess the level of impacts to raptors at the Project site. (Page 14, West Report).

The concerns above do not address the results of surveys but are directed more at the methods, analyses, or recommendations of the MDIFW. When actually looking at the results of the surveys to date, we see that different survey types (RMS and EROS) and over three different study years are all suggesting low raptor use or passage through the Project. These results suggest that relatively low numbers of raptors will be exposed to the Project. These results are likely explained by the topography and land management of the site which are not conducive to large number of migrant raptors moving through or breeding raptors resident to the site.

21. To best assess the exceptional potential impacts (e.g. project footprint, number of turbines, and consideration of cumulative impacts from adjacent wind facilities), project sampling design should include 1-2 survey stations with

minimum data collected in terms of hours per day, per week, and per season. The strength of inference of data from 2008 is limited due to sampling shortcomings. This was communicated to EDPR during the 3/5/14 meeting and outlined in the meeting notes (see below): (Page 14, West Report).

1. Raptor migration data:

a. Important to collect because:

- i. the extent/impact of the Number 9 project

Impacts will be estimated during operations - post-construction monitoring

- ii. to assist in micro-siting turbines

RMS data is not useful in micro-siting turbines as it is not collected in a manner to address spatial variation in use over a study area. Other surveys such as EROS, BBS, and aerial surveys for nests provide data better suited for helping project design considerations

- iii. lack of raptor migration data for this area of Maine

b. Concerns with EDP approach:

- a. 2008 and 2013 EDP raptor migration data are insufficient in terms of time spent per day, per week, and per season.

- b. 2008 EDP spring raptor migration survey protocol as described in section the Number Nine 2008 Baseline Study Report:

- i. Need to report the number of times visited per week, not just the total number of times the site was visited. Should visit sites 2 or more times per week to distribute effort throughout migration period.

- ii. Timeframe of surveys too narrow (collected data from May 1 to May 31, 2008) and fall season (August 16 to October 31).

The report is being revised to add this in to the extent possible.

- c. 2013 EDP fall raptor migration survey protocol:

- i. Incidental observations of raptors during 1 hour/point/month bald eagle surveys do not equate to raptor migration data.

When these surveys are conducted during the migration period many or most of the raptors observed are migrants so it does equate to raptor migration data.

- d. Because of the timing of consultation in the midst of the 2014 spring migration survey period, we recommend additional surveys in 2015 to obtain at least 1 year of spring and fall (2014) data collection (*note*: 2 or more years of pre-construction raptor migration data is recommended due to inter-annual variation in migration activity, Strickland et al. 2011).

This was discussed at the October 2014 meeting with MDIFW. The project timeline does not allow MDIFW review additional pre-construction surveys performed in 2015. The BBCS and PCM plan being developed for the Project will address impacts.

The data from the studies in 2008 is useful in corroborating the results from 2013 and 2014. The 2008 studies were based on agency recommendations at that time and used similar field survey methods. No RMS surveys were conducted in fall 2013 but are being conducted in fall 2014. The overall strength of results from multiple survey types and years should not be overlooked because of minor differences between the surveys conducted and recommendations.

22. Considering a small proportion of the study site was evaluated, it is difficult to ascertain whether the topographic and physiographic features of the site concentrate raptors in space and time. (Page 15, West Report).

The proportion of the study site evaluated varied based on the survey type and was based on recommendations from the agencies. Based on the results of the studies in 2008, 2013, and 2014 and from multiple surveys (RMS, EROS) there is no concentration of raptors in space and time in the Project area. A DEM was prepared to compare the site with regional features which does not show linear ridges or features that are commonly thought to concentrate raptor movement (e.g. ridge lines, coast lines).

23. Many challenges with carcass searches to assess raptor mortality rates (e.g. how often are turbines searched, proportion of turbines searched). (Page 15, West Report).

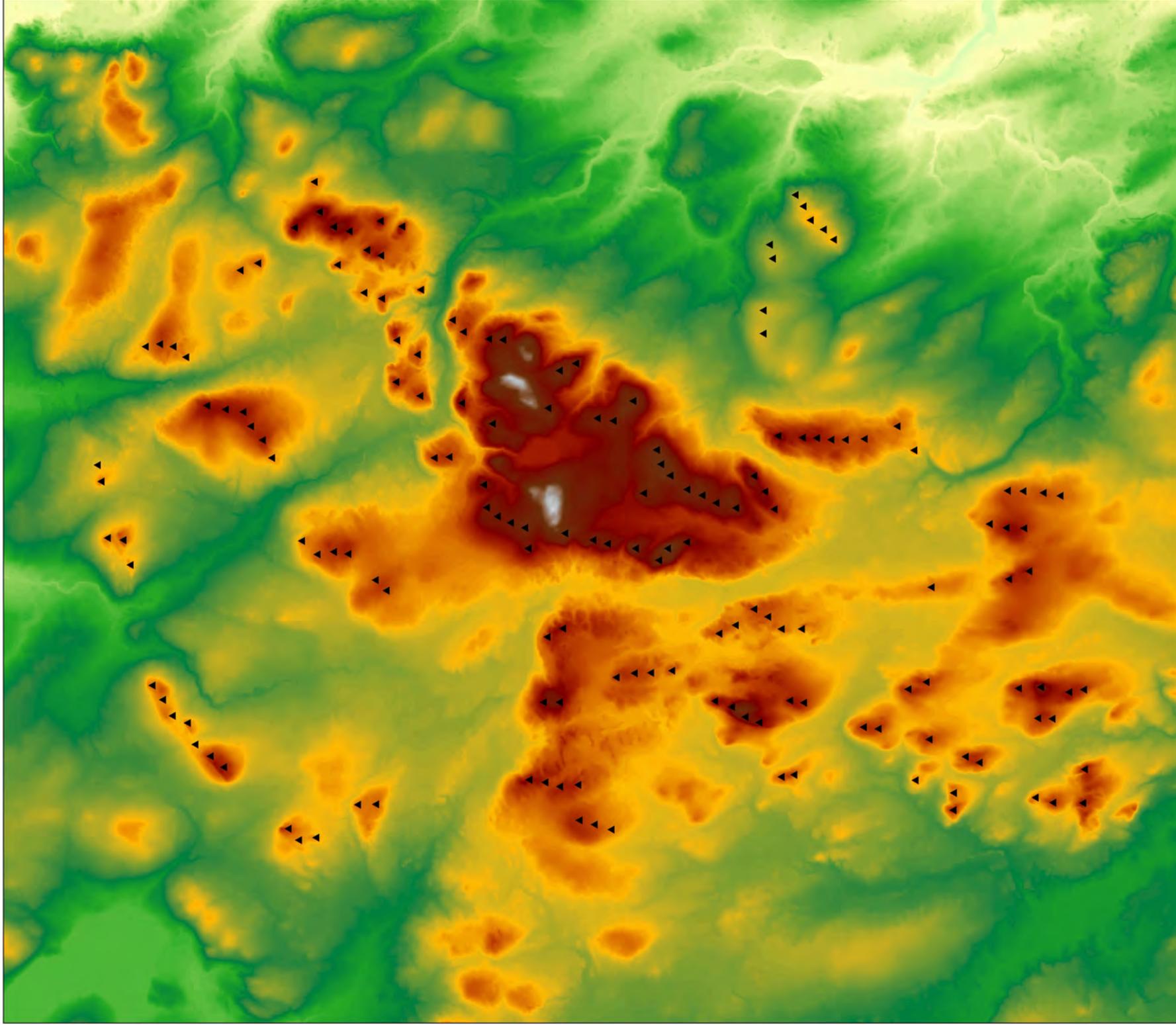
Operational impacts from wind projects have been studied extensively since the mid to late 1990's. The protocols used are specifically designed to address all factors that may affect the analyses and results such as the sample size (number of turbines), the search interval, the search area, observer bias, carcass persistence time, and taxa being studied.

24. Please refer to comment #20 regarding concluding remarks made in Discussion pertaining to low risk to migrating raptors. Additionally, it may be that the Project will have a greater impact than any other in the region given that it will be the largest. Please consider /report/compare the number of turbines and size of turbines to other projects in the region to provide a more appropriate in your evaluation of relative project risk. (Page 15, West Report).

The comment is related to both risk and impacts. Because a bird may be at risk it is erroneous to assume it will be impacted. Any sized project can be a risk to birds in an area or region, and yes presumably larger projects would have a greater impact than smaller projects. The site surveys determine what birds/species are at risk or exposed to the project. Risk and/or exposure can then be used to help estimate what the impacts could be when compared with other studies where impacts have been measured. Based on the pre-construction studies to date risk/exposure is low for the Project.

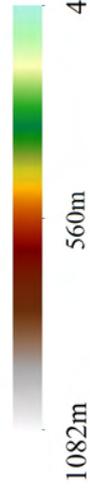
25. MDIFW informed West that the references to bald eagle as a state-threatened species are not current. Bald eagles (*Haliaeetus leucocephalus*) are currently a species of special concern in Maine and updated lists are available on MDIFW's website. (Pages 12, 13, 17, West Report).

Changes made to the report.



▲ Turbines

Elevation



Number Nine Wind Project, Maine



Data Source: USGS DEM, ESRI
Projection: Universal Transverse Mercator
Datum: North American Datum 1983
Author: GPG Date: 10/21/2014



From: [Prescott, Joy](#)
To: [john.perry@maine.gov](#); [Frank.Frost@maine.gov](#); "D'Auria, Danielle"; [Amanda.J.DeMusz@maine.gov](#); ["erynn.call@maine.gov"](#); [wende_mahaney@fws.gov](#); [Jessica.damon@maine.gov](#); [MacLean, Billie J \(Billie.J.MacLean@maine.gov\)](#)
Cc: [Swartz, Beth \(Beth.Swartz@maine.gov\)](#); [Richard.Hoppe@maine.gov](#); [Robert.d.Stratton@maine.gov](#); ["charlie.todd@maine.gov"](#); [Mahaney, Shawn B NAE \(Shawn.B.Mahaney@usace.army.mil\)](#); [Chapman, Katie \(Katie.Chapman@edpr.com\)](#); [Johnston, Erin \(erin.johnston@edpr.com\)](#); [Calabrese, Christina \(Christina.Calabrese@edpr.com\)](#); [Ingalls, Kellen \(Kellen.Ingalls@edpr.com\)](#); "Chris Smith" ([CSmith@FisherAssoc.com](#)); [Tetreau, Thomas](#); [Pelletier, Steve](#); [Emerson, Bryan](#); "David Young"
Subject: Number Nine - Site Visit 10/27-28 Meeting Summary
Date: Friday, October 31, 2014 2:33:00 PM
Attachments: [Number Nine - Site Visit 102714_102814.pdf](#)

All – Thanks to those that were able to join us on Monday and Tuesday for the site visit to the Number Nine Wind Farm. It seemed like there were productive discussions and I hope it was helpful to see the project area and visit some of the locations that will be included in the permit application.

Attached is a summary of the highlights and action items from the site visit. Please let me know if you have any questions.

If you were not able to attend the site visit, but are interested in a tour and/or seeing particular site and/or resource, EDPR is willing to arrange additional site visits at any point this fall or winter – just let me know and I can help to coordinate that.

Thanks. Have a good weekend. - Joy

-----Original Appointment-----

From: Prescott, Joy
Sent: Friday, September 26, 2014 1:56 PM
To: Prescott, Joy; [john.perry@maine.gov](#); [Frank.Frost@maine.gov](#); [Amanda.J.DeMusz@maine.gov](#); 'erynn.call@maine.gov'; [Jessica.damon@maine.gov](#); [MacLean, Billie J \(Billie.J.MacLean@maine.gov\)](#); [wende_mahaney@fws.gov](#); [Mahaney, Shawn B NAE \(Shawn.B.Mahaney@usace.army.mil\)](#); [Chapman, Katie \(Katie.Chapman@edpr.com\)](#); [Johnston, Erin \(erin.johnston@edpr.com\)](#); [Ingalls, Kellen \(Kellen.Ingalls@edpr.com\)](#); 'Chris Smith' ([CSmith@FisherAssoc.com](#)); [Tetreau, Thomas \(Tom.Tetreau@stantec.com\)](#); [Pelletier, Steve](#); 'David Young'
Cc: [Swartz, Beth \(Beth.Swartz@maine.gov\)](#); [Richard.Hoppe@maine.gov](#); [Robert.d.Stratton@maine.gov](#); 'charlie.todd@maine.gov'; [Calabrese, Christina \(Christina.Calabrese@edpr.com\)](#); [Oliver, Lisa \(Lisa.Oliver@edpr.com\)](#); [Emerson, Bryan](#); 'D'Auria, Danielle'
Subject: Number Nine - Site Visit Rescheduled to 10/27-28
When: Monday, October 27, 2014 12:00 AM to Wednesday, October 29, 2014 12:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Bridgewater

All – Based on feedback from John Perry on availability of MDIFW staff, we are rescheduling the site visit to 10/27-28 (Mon/Tues).

Monday will focus on on-the-ground resources. Tuesday will continue any remaining on-the-ground resources and also visit raptor/eagle survey locations.

I understand that the following MDIFW staff are planning to attend:

John Perry (Mon-Tues)

Frank Frost (Mon)

Amanda deMusz (Mon-Tues)

Erynn Call (Tues)

Jessica Damon from MDEP and Billie MacLean from LUPC will also likely join on one of the days.

I have included other staff on the invitation – you are welcome to join us on one or both days, if you are available.

Please reply to let me know if you plan to attend. I will send a message with final logistics next Thursday – I generally expect that we will meet at the Bridgewater Town office at 11am on Monday and ~8am on Tuesday.

Thanks. We look forward to another productive site visit.

- Joy

Prescott, Joy

From: Johnston, Erin <erin.johnston@edpr.com>
Sent: Sunday, November 02, 2014 5:50 PM
To: Wende_Mahaney@fws.gov
Cc: Shawn.B.Mahaney@usace.army.mil; Todd, Charlie (Charlie.Todd@maine.gov); Perry, John (John.Perry@maine.gov); Stratton, Robert D (Robert.D.Stratton@maine.gov); jessica.damon@maine.gov; Chapman, Katie; Ingalls, Kellen; Prescott, Joy
Subject: Number Nine - northern long-eared bat presence/absence survey
Attachments: NumberNine NLEB Acoustic Report_Final.pdf

Hello Wende,

Attached is the northern long-eared bat presence/absence survey report for the Number Nine Wind Farm project. I hope to discuss the results during our meeting on December 5.

Best,
Erin



Erin Johnston
EDP Renewables, North America
Environmental Affairs
134 N. LaSalle Street, Ste. 2050, Chicago, IL 60602
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www.edpr.com www.horizonwind.com

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Prescott, Joy

From: Johnston, Erin <erin.johnston@edpr.com>
Sent: Friday, December 05, 2014 8:49 AM
To: sarah_nystrom@fws.gov; Wende_Mahaney@fws.gov; Call, Erynn (Erynn.Call@maine.gov); Perry, John (John.Perry@maine.gov); Robert.D.Stratton@maine.gov; DeMusz, Amanda J (Amanda.J.DeMusz@maine.gov); Hoppe, Richard (Richard.Hoppe@maine.gov); jessica.damon@maine.gov
Cc: Prescott, Joy; David Young (dyoung@west-inc.com); Chapman, Katie; Ingalls, Kellen
Subject: Number Nine Eagle Observation Survey report
Attachments: NN 2014 EOS Final Report (12032014).pdf

Hello all,

Attached is the final eagle observation survey report for the Number Nine Wind Farm.

Best,
Erin



Erin Johnston
EDP Renewables, North America
Environmental Affairs
134 N. LaSalle Street, Ste. 2050, Chicago, IL 60602
312.533.1051
www.edpr.com www.horizonwind.com

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MDIFW and USFWS – Discussion about Bats

Number Nine Wind Project / 195600919

Date: December 5, 2014
MDIFW : John Perry, Charlie Todd
DEP: Jessica Damon, Maria Lentine-Eggett
USFWS: Wende Mahaney
EDPR: Erin Johnston, Dave Young (WEST), Jeff Gruver (WEST), Joy Prescott (Stantec)

MEETING AGENDA

- Provide an update on project status and schedule
- Review studies completed to date
- Discuss potential project impacts on bats
- Discuss next steps

PROJECT STATUS AND SCHEDULE

Plan to submit application in January. This is a follow-up to the meeting held in August that presented results thru the summer.

STUDIES COMPLETED TO DATE

Jeff Gruver provided an overview of the surveys conducted at the project site, including additional surveys conducted as result of recommendations from MDIFW:

- Acoustic surveys –fixed station and temporary stations
- Driving Transect surveys
- Northern long-eared bat (NLEB) specific presence/absence surveys

Jeff discussed the overall results for these surveys, including:

- Seasonality of the combined stations results, which were consistent across seasons.
- Species composition for temporary stations – most calls were identified as low-frequency bats (hoary bats, silver-haired bats, big brown bats), very few Myotis calls were recorded, and no evidence of any northern long-eared bat calls was found.
- Activity Levels
 - Levels of acoustic bat activity were very low overall
 - Over 90% of all acoustic data recorded were generated by low-frequency echolocating bats (hoary, silver-haired, big brown)
- Species Composition

- No evidence of NLEB presence from any acoustic survey source, including:
 - USFWS presence/absence survey protocol
 - Fixed stations at met towers
 - Temporary stations in canopy gaps, forest edges and wetlands
 - Canopy stations in a forest clearing and along a forested stream corridor
 - Acoustic driving transects
- Very low levels of little brown bat activity were recorded

Attachment A includes a summary of survey effort and results of those surveys.

Discussion

- Charlie Todd asked about the wide variety in the classifications for different software. Jeff explained that this variation is common between the packages and part of the reason that analysis is provided from multiple sources.
- Charlie asked about the effectiveness of surveys for forest-interior bats. Jeff replied that bats still forage within small openings within forests, along forest edges, and in gaps in existing canopy. Charlie indicated he liked the temporary stations to evaluate the potential presence of northern long-eared bats.

POTENTIAL PROJECT IMPACTS ON BATS

Dave Young and Jeff Gruver provided an overview of the research on the potential impacts on bats.

Fatalities in Context

- In the Northeast (Maine to West Virginia), ~80% of fatalities are of hoary, silver-haired, and eastern red bats.
- About 13% of fatalities are Myotis bats. Little brown bat (12.1%), northern long-eared bat (0.5%) and eastern small-footed bat (0.03%)
- Most of these are from southern portion of region (NY, PA, WV)
- 17 little brown bat fatalities known from Maine, but 10 of them (59%) are from one project
- No northern long-eared bat or eastern small-footed bat fatalities known from Maine

Minimizing Impacts

- Results suggest 36%-46% reductions in bat fatalities by feathering below normal cut-in
- Increased cut-in speeds of 5.0 m/s yield results similar or greater than to 6.0 m/s although number of studies of 6.0 m/s is small
- Data suggest that Myotis fatalities can be reduced by ~90% by feathering at or below 4.5 m/s

Fatalities in Maine

Wind Energy Facility	Bat Activity Estimate	Fatality Estimate (#/MW)	Fatality Estimate (#/Turbine)	No. of Turbines	Total MW
Kibby, ME (2011)		0.12	0.36	44	132
Stetson Mountain I, ME (2011)		0.28	0.42	38	57
Mars Hill, ME (2008)		0.45	0.68	28	42
Bull Hill, ME (2014)		0.52	0.94	19	34.2
Stetson Mountain I, ME (2009)	28.5; 0.3	1.4	2.1	38	57
Stetson Mountain II, ME (2010)		1.65	2.5	17	25.5

Discussion

- Charlie Todd asked about the **33% reduction in mean mortality at Bull Hill. Jeff wasn't** certain of the reasons but noted that one difference was that this study included a temperature threshold.
- Charlie Todd requested that Slide 19 include per-turbine estimates, in addition to per-MW estimates.
- Charlie noted a significant difference in mortality at Stetson pre- and post-white nose syndrome.
- Charlie asked what the cut-in speed would be for the project. Erin was not certain and will check.
- Maria asked what a fatality reduction by feathering below cut-in speed study would look like, and Erin and Dave responded that it would depend on the objectives of such a study. For example, to study fatality reduction in comparison to regular operation, the study would consist of control turbines operating normally and turbines with increased cut-in speed(s).

NEXT STEPS

- Erin will check on manufacturer cut-in speed for turbines proposed for Number Nine.
- Manufacturer cut-in speed is 3.0 m/s.

December 5, 2014

Number Nine Wind Project – Bat Discussion with MDIFW and USFWS

Page 4 of 4

ATTACHMENT A – PRESENTATION SLIDES FROM DISCUSSION

Prescott, Joy

From: Emerson, Bryan
Sent: Wednesday, January 21, 2015 2:11 PM
To: Swartz, Beth
Cc: Perry, John; deMaynadier, Phillip; Czapiga, Jason; Prescott, Joy
Subject: RE: Number Nine Wind Project Vernal Pool Assessment Summary

Beth,
Sounds good. That makes sense to me. We will incorporate these changes into our design/mapping going forward for the project.

Thanks,
--Bryan

Bryan Emerson, PWS

Project Manager | Wetland Scientist
Stantec
30 Park Drive Topsham ME 04086-1737
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bryan.emerson@stantec.com



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From: Swartz, Beth [mailto:Beth.Swartz@maine.gov]
Sent: Wednesday, January 21, 2015 11:53 AM
To: Emerson, Bryan
Cc: Perry, John; deMaynadier, Phillip; Czapiga, Jason; Prescott, Joy
Subject: RE: Number Nine Wind Project Vernal Pool Assessment Summary

Thanks Bryan, that does explain why the 2014 forms recommended NSP for these two pools in conflict with the data from the 2014 surveys. However, not having the 2010 data for number of egg masses, survey timing, maturity of egg masses, percent of pool surveyed, observer confidence levels, or presence/absence and numbers of tadpoles observed leaves too many uncertainties in our minds. Consequently, we are more comfortable with these two pools remaining as Potentially Significant based on our assessment of the 2014 survey data rather than relying solely on the original observer's recommendation. As with any PSVP, we certainly are willing to reevaluate the pool's status if a future assessment is done during the recommended timing windows for indicator species.

beth

Beth I. Swartz, Wildlife Biologist
Reptile, Amphibian, and Invertebrate Group
Maine Department of Inland Fisheries and Wildlife
650 State Street, Bangor, ME 04401

ph: (207) 941-4476
fax: (207) 941-4450
beth.swartz@maine.gov

From: Emerson, Bryan [<mailto:bryan.emerson@stantec.com>]
Sent: Tuesday, January 20, 2015 11:00 AM
To: Swartz, Beth
Cc: Perry, John; deMaynadier, Phillip; Czapiga, Jason; Prescott, Joy
Subject: RE: Number Nine Wind Project Vernal Pool Assessment Summary

Beth,
Thanks for sending this along. I reviewed the pools that you changed and just have one comment to make. For the two pools originally surveyed in 2010 (VP_C10VP20_N and VP_E10VP04), these pools did not have enough egg masses to be considered SVPs when they were originally surveyed in 2010. Unfortunately, we don't have any of the data that was collected in 2010, so we don't have specific egg mass counts. All we had was GIS data and associated attributes saying they were non-SVPs. That is why we had to revisit these in 2014, to collect the necessary data. We stuck with the same designation that the other consultants gave them in 2010, assuming that their surveys were appropriately timed to get egg mass counts. I'm not sure if that is convincing enough to keep these as non-significant VPs, but just wanted to explain our rationale for not calling these SVPs, even though there were tadpoles present and our survey was later than ideal.

Thanks,
--Bryan

Bryan Emerson, PWS

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From: Swartz, Beth [<mailto:Beth.Swartz@maine.gov>]
Sent: Thursday, January 15, 2015 11:31 AM
To: Emerson, Bryan
Cc: Perry, John; deMaynadier, Phillip; Czapiga, Jason
Subject: Number Nine Wind Project Vernal Pool Assessment Summary

Bryan,
I have completed MDIFW's review of the Number Nine project's vernal pool assessment forms and they are now being processed for data entry and mapping into our vernal pool database. Formal notification of pool status from DEP will be forthcoming, but in the interim I wanted to send the attached summary of pools determined by MDIFW to be Significant or Potentially Significant under NRPA. Please note there were several instances where our determination differed from the observer's, and I have highlighted those pools in the summary.

Overall the forms were in good shape. Given the volume – we thank you for that! Don't hesitate to contact me if you have any questions.

beth

Beth I. Swartz, Wildlife Biologist
Reptile, Amphibian and Invertebrate Group
Maine Department of Inland Fisheries and Wildlife
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Bangor, ME 04932
207-941-4476

From: [Prescott, Joy](#)
To: [Johnston, Erin \(erin.johnston@edpr.com\)](#); [Pelletier, Steve](#); [john.perry@maine.gov](#)
Subject: Number Nine - MDIFW Mtg Summary 100714
Date: Tuesday, October 07, 2014 4:49:00 PM

John, Steve, Erin – Thanks for a productive call today – below is a summary of the action items and key highlights from the call.

John, somehow you ended up with the majority of the action items – let us know if there is anything we can do to help. - Joy

Action Items

John

- check with Tom Hodgman about a comment he had made about rusty blackbird and olive-sided flycatcher
- schedule conference call with Rich Hoppe to discuss approach to project for DWA
- check with Frank Frost and Beth Swartz (and any other MDIFW staff) about their plans to attend site visit on 10/22-23
- follow-up with Erynn and Bob Stratton after the raptor migration survey mtg on 10/8

Joy

- send reminder to attendees about 10/8 raptor migration survey mtg
- send reminder to attendees about 10/22-23 site visit

Meeting Summary

1. Update on project schedule

EDPR plans to submit in mid-November.

2. Check-in on communications to/from MDIFW (reports for review, info requests, etc)

John requested shp files for turbines and roads to help the review process.

John asked about surveys that had been identified as possibilities earlier in the process, depending on the location of the project. These include wood turtle, bog lemming, tomah mayfly, mystery snail. EDPR/Stantec understood these were identified by MDIFW because early project maps showed potential proximity to St. Croix stream, but the project is more than 2 miles from the stream.

John asked whether breeding bird surveys were conducted. They were not, based on guidance from MDIFW in March that these surveys were not recommended. John will follow-up with Tom Hodgman about comments/questions he made about rusty blackbird and olive-sided flycatcher.

Erin identified the upcoming survey reports to be provided to MDIFW:

- Interim bat survey report
- Northern long-eared bat survey report (primary audience is USFWS, but MDIFW is welcome to review as well)
- eagle observation survey report (primary audience is USFWS, but MDIFW is welcome to review as well)
- edits to aerial raptor nest survey based on feedback from Erynn Call

Joy identified the survey reports/materials that are currently with MDIFW for review:

- DWA report (with Rich Hoppe, EDPR would like to get feedback about the route; John will schedule a conference call with Rich)
- Lynx report (with Jennifer Vashon, no specific feedback requested, but provided to make sure she had the information she needed)
- Vernal pool survey forms (with Beth Swartz, 2 batches provided already, 1 additional batch of ~25-50 forms will be submitted with the application).

John confirmed that he received information from TetraTech about water-quality stream surveys. They are reviewing project layout and picking monitoring sites and will send map to John prior to site visit, so that those locations can be selected at the site visit.

Based on the information provided so far, John does not see any significant issues of concern.

3. Discuss any specific topics of interest

- a. site visit
 - Agreed it will start 10/22 @11 in Bridgewater and continue on 10/23
 - John will check with Frank Frost, Beth Swartz, and Rich Hoppe about whether they plan attend
 - If Erynn Call is interested, it could be expanded to include review of raptor sites
 - at this point, it is just focused on "on-the-ground" topics.
- b. raptor migration mtg
 - mtg with MDIFW tomorrow to discuss the raptor migration survey report.
 - John will check-in with Erynn and Bob after the meeting
- c. other
 - Agreed that this call makes sense and is useful for exchange of information.

4. Identify good time for recurring check-in call

Next call, Monday, 10/20 at 9:30 EST. Subsequent calls will be scheduled at each call.

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From: [Prescott, Joy](#)
To: [Johnston, Erin \(erin.johnston@edpr.com\)](#); [Pelletier, Steve](#); [john.perry@maine.gov](#)
Subject: RE: Number Nine - MDIFW Mtg Summary 102014
Date: Monday, November 03, 2014 2:23:00 PM

I am resending this summary of our last call – when I sent today's call summary, I noticed a bounceback from this summary. Sorry I didn't notice it earlier – however, there no outstanding items from that call, so I'm sending this just for completeness. - Joy

From: Prescott, Joy
Sent: Monday, October 20, 2014 4:11 PM
To: Johnston, Erin (erin.johnston@edpr.com); Pelletier, Steve
Subject: Number Nine - MDIFW Mtg Summary 102014

John, Steve, Erin – Thanks for a productive call today – below is a summary of the action items and key highlights from the call.

Action Items

John

- schedule conference call with Rich Hoppe and Mark Caron to discuss DWA feedback. If they are no available, make sure Amanda has info to share at the site visit.
- check with Erynn Call about status of comments related to raptor nest survey report
- check with MDIFW staff to see if there is interest in riding in van for site visit

Joy

- send logistics details for site visit to attendees
- touch base with John on Friday about any additional details for site visit

Erin

- provide feedback on notes from 10/8/14 raptor migration survey meeting

Meeting Summary

1. Update on project schedule

EDPR plans to submit in early December.

2. Check-in on communications to/from MDIFW (reports for review, info requests, etc)

DWA – As mentioned in email last week, Mark Caron and Rich Hoppe have questions and some concerns. They plan to provide comments by next week. Steve suggested that it may be more efficient to have a phone conversation about it. John will try to schedule conference call with Mark and Rich this week, but they are likely not available. If that doesn't work, John will make sure that Amanda has info from Mark and Rich to share at site visit next week.

Vernal Pool – Beth reported she has completed review for 75% of datasheets.

Interim bat survey report was provided to MDIFW on Friday – Erin will be sending a doodle to schedule a mtg to discuss (Rich/Amanda, John Perry, Charlie Todd).

John will check-in with Erynn Call about status of comments from aerial raptor nest survey meeting.

Erin provided feedback that some of the notes from Erynn Call from the 10/8/14 raptor migration meeting did not fully reflect the discussion - Erin will be providing a response this week.

Erin identified the upcoming survey reports to be provided to MDIFW:

- Northern long-eared bat survey report (primary audience is USFWS, but MDIFW is welcome to review as well)
- eagle observation survey report (primary audience is USFWS, but MDIFW is welcome to review as well)

Water quality - locations for water-quality stream surveys will likely not be available for site visit. There may be discussion at the site visit about potential locations.

3. Discuss any specific topics of interest

a. site visit

- Agreed it will start 10/27 @11 in Bridgewater and continue on 10/28. Monday will be "on-the-ground" resources and Tuesday will continue any remaining "on-the-ground" locations but will primarily focus on raptor survey locations.
- At this point, attendees from MDIFW will include Frank Frost, Amanda DeMusz, Erynn Call (possibly Danielle D'Auria, and possibly Tom Hodgman – John will check with Tom)

4. Next check-in call

Next call, Monday, 11/3 at 9:30 EST. Subsequent calls will be scheduled at each call.

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From: [Prescott, Joy](#)
To: [Johnston, Erin \(erin.johnston@edpr.com\)](#); [Pelletier, Steve](#); [john.perry@maine.gov](#)
Subject: Number Nine - MDIFW Mtg Summary 110314
Date: Monday, November 03, 2014 2:19:00 PM

John, Steve, Erin – Thanks for a productive call today – below is a summary of the action items and key highlights from the call.

Action Items

John

- forward emails from Rich / Mark about DWA feedback.
- check with Jennifer Vashon to see if she has questions/comments on lynx report.

Erin

- schedule call to discuss the interim bat survey reports

Meeting Summary

1. Update on project schedule

EDPR plans to submit in late November, or early December.

2. Check-in on communications to/from MDIFW (reports for review, info requests, etc)

DWA – John has some emails from Mark / Rich and will forward.

Lynx – John will check on whether Jennifer Vashon has questions or would like additional information on the lynx report.

Bat -

- meeting will be scheduled shortly to discuss interim acoustic bat survey report.
- Northern long-eared bat survey report was sent this week (primary audience is USFWS, but MDIFW is welcome to review as well)

Erin identified the upcoming survey reports to be provided to MDIFW:

- eagle observation survey report (primary audience is USFWS, but MDIFW is welcome to review as well)
- revised raptor migration survey report
- revised raptor nest survey report

Water quality – Methods will be sent within next 2-3 weeks and follow-up will occur this winter to confirm sites.

3. Discuss any specific topics of interest

a. site visit

- Summary of site visit sent to attendees on Friday.
- Agreed it was useful, particularly for Frank Frost to see the stream crossings. John noted that MDIFW will be requesting culvert replacements, rather than extensions, unless it is timber-crossing. Their focus on cold-water streams as an opportunity to restore lost connectivity. Erin noted that EDPR does not plan to make improvements to roads/crossings where it is not needed for the project. John and Erin agreed that additional conversation will be needed.
- As follow-up to raptor discussions, Stantec will provide summary of raptor surveys

conducted at other projects, and will invite Erynn Call to visit office and look at reports/data in more depth. Steve and Erin noted that an in-depth review of reports from other projects is not part of the application for this project, but that we can provide information for Erynn to review separately.

4. Next check-in call

Next call, Tuesday, 11/18 at 2:00 EST. Subsequent calls will be scheduled at each call.

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From: [Prescott, Joy](#)
To: john.perry@maine.gov; [Johnston, Erin \(erin.johnston@edpr.com\)](mailto:Erin.johnston@edpr.com); [Pelletier, Steve](#)
Subject: Number Nine - MDIFW Mtg Summary 112114
Date: Friday, November 21, 2014 4:34:00 PM

John, Steve, Erin – Thanks for a productive call today – below is a summary of the action items and key highlights from the call.

Action Items

John

- send doodle to identify date after 12/8 to discuss DWA
- check with Jennifer Vashon to see if she has questions/comments on lynx report.
- confirm availability for next call (12/3 @10:30)

Erin

- send white paper on impacts on bats (next week)
- send 2014 acoustic bat survey report (first week of Dec)

Meeting Summary

1. Update on project and schedule

Erin provided an update on project schedule - EDPR plans to submit by the end of the year.

Erin provided an update on the public meeting last week. She noted that an article in the Bangor Daily News about the public meeting included several inaccuracies, including outdated information about the type of turbines that would be included for the project. As previously discussed with MDIFW, and as described at the public meeting, EDPR intends to use 2 MW turbines.

2. Check-in on communications to/from MDIFW (reports for review, info requests, etc)

DWA – MDIFW has submitted comments on DWA surveys. These are being reviewed by Stantec and EDPR. We understand that MDIFW is not available to discuss until after 12/8. John will schedule a doodle to identify a time to discuss further.

Lynx – John will has not heard from Jennifer Vashon. He will follow-up with whether Jennifer Vashon has questions or would like additional information on the lynx report.

Bat – Meeting is scheduled for 12/5 from 12-2 at USFWS office in Orono. Meeting will include review of the 2014 bat survey report, as well as a white paper that includes a synthesis of the impacts in the Northeast. That white paper will be sent early next week. John will check-in with Rich and Amanda – if they are available, they will participate via conference call.

Water quality – Methods will be sent within next 2-3 weeks and follow-up will occur this winter to confirm sites.

Erin identified the upcoming survey reports to be provided to MDIFW:

- revised acoustic survey report (to include fall, in addition to spring and summer)

3. Discuss any specific topics of interest

None.

4. Next check-in call

Next call, Wednesday, 12/3 at 10:30 EST. Subsequent calls will be scheduled at each call.

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From: [Prescott, Joy](#)
To: [Johnston, Erin \(erin.johnston@edpr.com\)](#); john.perry@maine.gov
Cc: [Pelletier, Steve](#)
Subject: Number Nine - MDIFW Mtg Summary 120314
Date: Wednesday, December 03, 2014 10:45:00 AM

John, Erin – Thanks for the call today – below is a summary of the action items and key highlights from the call.

Action Items

Joy

- follow-up with Steve on availability for DWA meeting and schedule

Erin

- send slides for Friday's bat meeting

Meeting Summary

1. Update on project and schedule

Erin provided an update on project schedule - EDPR plans to submit in January.

2. Check-in on communications to/from MDIFW (reports for review, info requests, etc)

John has received feedback on times for a DWA discussion and sent options to Steve. Possible dates include 12/11 between 8:30-11:30 or 12/18 between 8:30-11:30. Joy will follow-up with Steve and get the meeting scheduled.

At this time, no other reports planned to be sent prior to application submission.

3. Discuss any specific topics of interest

None.

4. Next check-in call

Next call, Monday, 12/15 at 2:00 EST. Subsequent calls will be scheduled at each call.

Joy Prescott

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From: [Prescott, Joy](#)
To: [Johnston, Erin \(erin.johnston@edpr.com\)](#); [Pelletier, Steve](#); [john.perry@maine.gov](#)
Subject: Number Nine - MDIFW Mtg Summary 121614
Date: Tuesday, December 16, 2014 1:21:00 PM

John, Steve, Erin – Thanks for a productive call today – below is a summary of the action items and key highlights from the call.

Action Items

John

- follow-up with Erin/Joy once 12/5 meeting notes are reviewed, if you would like to schedule additional discussion on bats with WEST

Meeting Summary

1. Update on project status and schedule

Erin provided an update on project schedule - EDPR plans to submit in January.

2. Check-in on communications to/from MDIFW (reports for review, info requests, etc)

DWA – Call scheduled for Wed, 12/17, from 9-11. Stantec noted that we received comments on the southern DWA but did not receive comments on materials related to the northern DWA. Hopefully, both can be discussed during the call tomorrow.

Bat – Erin provided overview of meeting on 12/5 with MDIFW and USFWS, which included general discussion about bats – to provide results of surveys and put surveys in context with findings at projects in Maine and in the region. Meeting notes will be distributed this week. John participated via phone for the latter portion of the meeting. John will follow-up with Charlie today and if he has additional questions after he has reviewed the slides and meeting notes, EDPR can schedule follow-up conversation with Dave Young at WEST. Because the meeting was informational, no response or comments is needed from MDIFW, unless there are any comments on the meeting notes.

3. Discuss any specific topics of interest

None.

4. Next check-in call

Next call, Tuesday, 1/6 at 10:30 EST. Subsequent calls will be scheduled at each call.

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From: [Prescott, Joy](#)
To: john.perry@maine.gov; [Johnston, Erin \(erin.johnston@edpr.com\)](mailto:Erin.johnston@edpr.com); [Pelletier, Steve](#)
Subject: Number Nine - MDIFW Summary 010614
Date: Tuesday, January 06, 2015 10:54:00 AM

John, Steve, Erin – Thanks for a productive call today – below is a summary of the action items and key highlights from the call.

Action Items

John

- follow-up with Erin/Joy once 12/5 meeting notes are reviewed, if you would like to schedule additional discussion on bats with WEST
- follow-up with Jennifer Vashon about status of review of lynx report.

Erin

- provide update to John on status of adjustments to guy wires for existing temp met towers.

Meeting Summary

1. Update on project status and schedule

Erin provided an update on project schedule - EDPR plans to submit in late January.

2. Check-in on communications to/from MDIFW (reports for review, info requests, etc)

DWA – MDIFW requested some follow-up info from the call on 12/16. This is in-progress and will be provided once it is available.

Lynx – John checked with Jennifer before Christmas and she had not yet reviewed the lynx report. He will check-in with her again about status of review. Based on conversations with her, he does not expect that there will be any issues.

3. Discuss any specific topics of interest

John asked for an update related to the existing temp met towers where a moose was caught. Stantec has not been involved in this issue; Erin will get an update internally and provide to John.

4. Next check-in call

Next call, Tuesday, 1/20 at 10:30 EST. Subsequent calls will be scheduled at each call.

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From: [Prescott, Joy](#)
To: [Johnston, Erin \(erin.johnston@edpr.com\)](#); john.perry@maine.gov
Cc: [Pelletier, Steve](#)
Subject: Number Nine - MDIFW Status Call 1/26
Date: Monday, January 26, 2015 10:55:00 AM

John, Erin – Thanks for a productive call today – below is a summary of the action items and key highlights from the call.

Action Items

None identified.

Meeting Summary

1. Update on project status and schedule

Erin provided an update on project schedule - EDPR plans to submit in mid February.

2. Check-in on communications to/from MDIFW (reports for review, info requests, etc)

Erin noted that the application will include all wildlife reports, including bat and raptor surveys that continued into the late fall/early winter.

John had indicated in previous calls that he might be interested in follow-up discussion related to bats (since he was not able to attend all of the 12/5 mtg in-person). Since Charlie will be taking the lead on review related to bats, John doesn't think follow-up discussion is needed at this time.

3. Discuss any specific topics of interest

Corey Nelson will be starting on 2/9 as small mammal biologist for MDIFW. John expects that Charlie Todd will continue to take the lead on review for Number Nine, since he has been involved so far, and goal is to provide consistency for applicant.

EDPR has been working with Billie and MDIFW related to the temporary met tower – this issue is separate from the permitting of the wind project. Erin and John discussed the latest update.

4. Next check-in call

Next call, Thursday, 2/13 at 9:00 EST. Subsequent calls will be scheduled at each call.

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