

STATE OF MAINE
LAND USE REGULATION COMMISSION

IN THE MATTER OF DEVELOPMENT)	Pre-Filed Rebuttal Testimony of
APPLICATION DP 4889)	Adam Gravel, Dale Knapp, and Joy
CHAMPLAIN WIND, LLC)	Prescott on behalf of Champlain Wind, LLC
BOWERS WIND PROJECT)	

On behalf of Champlain Wind, LLC (“Champlain”), Adam Gravel, Dale Knapp, and Joy Prescott are submitting this pre-filed rebuttal testimony in support of DP 4889 for the Bowers Wind Project (“Project” or “Bowers Wind Project”) and in response to pre-filed direct testimony submitted by David Corrigan, David Tobey, Gary Campbell, and Kevin Gurall.

I. REBUTTAL TO TESTIMONY OF DAVID CORRIGAN

A. Bald Eagles

In his testimony Mr. Corrigan raises questions about the sufficiency of bald eagle surveys and the likelihood of adverse impacts to eagles in the Project area. As noted in our direct testimony, all wildlife surveys, including bald eagle surveys, were developed through an iterative consultation process with MDIFW and USFWS representatives. These surveys, specifically those that evaluated impacts on raptors including bald eagles, were consistent with survey techniques and protocols Stantec has used in Maine, New England, and nationally, to assess potential impacts to bald eagle and other raptor species, and which have been approved by state and federal agencies in these regions. As acknowledged by Mr. Corrigan, the closest bald eagle nest is more than 4 miles away (MDIFW Nest #189 and #258). See Exhibit A Maps of Designated Habitat and Elevation Areas. Additionally, the overall mean raptor passage rate during the spring was 1.56 birds/hour, including 7 bald eagles (3 observed in Project area) during 84 hours of survey, and during the fall was 0.90 birds/hour, including 6 bald eagles (2 observed in Project area) during 105 hours of survey, which indicates relatively low use of the area by

eagles. Even at other wind energy projects throughout the United States with passage rates higher than those observed at the Bowers site, there has not been a single turbine related bald eagle fatality.

Finally, in reviewing potential impacts to eagles from this Project, USFWS concluded that “[t]he survey data suggests that current use of the project area by migrating and resident bald eagles is lower than many proposed or existing Maine wind projects.” See May 11, 2011 Letter from Laury Zicari, Maine Field Office, USFWS, which is attached as Exhibit B. USFWS has not requested any additional data or studies.

In summary, based on pre-construction survey results at Bowers, a comparison of those results to pre-and post-construction results at proposed, permitted, and operational projects in Maine, and overall low raptor mortality at operational wind energy projects in the U.S., we do not expect any undue impacts to bald eagles or other raptors as a result of the construction and operation of the Bowers Wind Project.

B. Canada lynx

In David Corrigan’s testimony, he suggests that the Project may adversely affect the Canada lynx, which is a federally-threatened species and a species of special concern in Maine. As described in the Application, the Project is located 29 to 35 miles from the nearest edge of critical habitat designated by USFWS. The nearest critical habitat is located northwest of the Project and is shown on Exhibit A. Moreover, the presence of Interstate 95, along with the Penobscot and Mattawmkeag rivers and other state roads located between the Project area and designated critical habitat may limit lynx movements into the Project area from existing designated habitat. Approximately four miles of the express collector is located north of Route 6, which is at the very southern boundary of the area identified as the historical range of the lynx

by the Maine Field Office of USFWS. Additionally, Canada lynx have been documented in Washington County. Thus, although designated Critical Habitat is distant and will not be affected by the Project, Stantec has conducted an assessment of potential lynx habitat in the general vicinity of the Project. A copy of the habitat assessment is attached as Exhibit C.

The results of the habitat assessment demonstrate that the Project area provides limited potential habitat for Canada lynx. Specifically, snowshoe hare are the preferred food of lynx and therefore habitat that supports high hare populations may be potential lynx foraging habitat as well. The preferred forest habitat for snowshoe hare typically includes dense stands of regenerating coniferous forest that provide food and cover, although dense deciduous and mixed regenerating stands may also provide suitable snowshoe hare conditions. Our habitat assessment did not document any large stands of dense softwood regeneration within the vicinity of the Project area. There are a few patches of regeneration located within 1,000 feet of the proposed roads and turbines, and although there is one larger stand of deciduous regeneration located near the southern edge of the Project, due to lack of softwood cover, it is not expected to support high hare populations. Thus, overall the Project area does not provide preferred habitat for populations of Canada lynx.

Although lynx could occasionally disperse through the Project area, the potential adverse effect of wind projects is related to the presence of traffic and construction of roads. As USFWS has previously commented in their letters for the both the Kibby project (located in part within designated critical habitat) and the Oakfield project (located outside of critical habitat), “adverse effects to Canada lynx could occur from loss of habitat, disturbance from road construction, direct road mortality (construction phase and post-construction operation), and indirect road-related mortality (public traffic on roads, increased access for hunting and trapping).” Copies of

these two letters are attached as Exhibit D. None of these effects are expected from the roads at the Project, as described below.

First, the Project will result in minimal loss of potential habitat. Specifically, only 0.41 miles of new road construction are located in an area of potential moderate-value habitat and, as noted above, that habitat may not contain sufficient winter cover to support hare populations. Second, direct lynx mortality is not likely during or after construction. There is minimal new road construction associated with the Project and although there will be increased traffic on roads during construction, there will be only limited use of the roads after construction is completed. See Application at 15. Additionally, the roads will be posted to limit speeds less than 30 mph, thereby limiting the risk of collision with lynx and other wildlife.

In summary, USFWS concluded construction of 17.4 miles of new road associated with the Kibby Project, which was located partially within and otherwise adjacent to designated critical habitat, would not adversely affect the Canada lynx. See Exhibit D. Likewise, USFWS concluded that construction of 15.3 miles of new road associated with the Oakfield Project, which was located outside designated critical habitat, was unlikely to adversely affect the Canada lynx. Here, the Project is located more than 29 miles from designated critical habitat and a habitat assessment demonstrates that the Project does not provide the preferred habitat for Canada lynx. Additionally, to the extent there is potential moderate value habitat, there is minimal impact to that habitat and the new road construction and use of existing roads is not anticipated to adversely affect Canada lynx that might move through the area. Consistent with the conclusions reached by USFWS in other wind power projects, we do not expect the Project to adversely impact Canada lynx.

C. Bats

Mr. Corrigan has also questioned the sufficiency of the information that has been submitted to the Commission regarding potential adverse impacts to bat populations. We appreciate the concerns that have been raised concerning potential bat mortality, but for the reasons set forth in the Application and our Pre-Filed Direct testimony, we believe that this site presents minimal risks, including risk to species of the genus *Myotis*.

First, the pre-construction survey results, including level of bat activity and detection rates in the rotor swept area, are consistent with and on the low end of the range observed at other wind projects in the region. See Gravel et al. Pre-Filed Direct Testimony, Table 3. Second, given the similarity with other projects, such as Stetson I, Mars Hill, and Lempster, we can compare actual bat mortality data to further refine predictions about mortality from the Bowers Project. See Exhibit 12A of Application as well as Gravel et al. Pre-Filed Direct Testimony, Table 5. As a result, the pre-construction data, confirmed by post-construction studies at Stetson I, suggest bat mortality at Bowers is likely to be low. Third, mortality of *Myotis* species, which is the species group adversely impacted by White-nose Syndrome, is expected to be even lower than potential mortality of the long-distance migrants. *Myotis* species normally feed at lower altitudes, often below tree line. As a result these species are not as likely to be impacted by turbine operations. This may explain why the great majority of bat mortality at operational wind projects (75% of all fatalities at 19 surveyed projects) is to “long-distance migrants,” which fly at higher elevations. Fatalities of more local species, including *Myotis* species, were relatively low (0% to 13.5%) (Arnett et al. 2008). Additionally, *Myotis* species also depend on caves and abandoned mines for winter hibernation, and no known hibernacula are located in the Project area.

Even though the existing mortality data and Project-specific survey data indicate a low risk to bats generally and to *Myotis* species in particular, Champlain has committed to implementing a post-construction study that will evaluate mortality and the effectiveness of curtailment in reducing bat mortality. (Curtailment involves increasing the cut-in speed of the turbines from 3 m/sec to 5 m/sec.) Champlain has been discussing the parameters of the post-construction curtailment study with MDIFW and Bat Conservation International to ensure that it is robust and will yield meaningful results.

Working with MDIFW, the results of this survey will be used to design and implement any operational modifications that Champlain and MDIFW determine are necessary to protect bat species in the Project area. A similar survey plan has been proposed for the Bull Hill Wind Project, and MDIFW has concluded that such a study is appropriate given the concerns with potential bat mortality. See June 15, 2011 MDIFW Response to Commission Questions attached as Exhibit E.

In summary, based on pre-construction survey results at Bowers, a comparison of those results to pre-and post-construction results at proposed, permitted, and operational projects in Maine, and overall low bat mortality at operational wind energy projects in Maine, we do not expect any undue impacts to bats as a result of the construction and operation of the Bowers Wind Project. Nonetheless, in recognition of the particular threat to the *Myotis* species and the potential effectiveness of increasing the cut-in speed of turbines from 3 m/sec to 5 m/sec, Champlain will implement a post-construction study that includes curtailment of some portion of operating turbines to evaluate the effectiveness of curtailment in reducing bat mortality in Maine.

D. Catastrophic Events

Mr. Corrigan has suggested that Champlain Wind has not provided sufficient data to

show that a “single catastrophic event” will not occur that could result in a one-time significant avian mortality event. These catastrophic events at other projects have been primarily weather-related and in areas of higher migration activity. Improper lighting (steady-burning red lights or white flood lights) have also been associated with significant mortality events. These will not be present at the Project which reduces the risk of mortality.

In contrast, no catastrophic event has been documented at a single operating wind project in Maine or New Hampshire. Post-construction mortality surveys have been conducted throughout the year at these projects to monitor in all weather conditions, included following foggy nights with low-pressure, and no large-scale mortality events have been documented.

Finally, contrary to Mr. Corrigan’s testimony neither MDIFW nor USFWS have raised concerns regarding catastrophic mortality events or avian mortality generally. Although MDIFW and USFWS have requested post-construction monitoring, this is standard for wind power projects in Maine and Champlain intends to conduct such monitoring. As requested by MDIFW, the applicant has agreed to conduct at least two years of surveys designed in consultation with MDIFW and USFWS to identify the level of project impact on migratory species. If a large-scale fatality event (i.e. more than five carcasses at one turbine or more than twenty carcasses across the Project area in one survey day) is observed, MDIFW and USFWS will be contacted within 24 hours, such that appropriate measures can be identified and implemented. An adaptive management plan that involves close coordination with state and federal agencies will also be implemented if significant impacts to migratory species occur as a result of the project.

II. REBUTTAL TO TESTIMONY OF DAVID TOBEY

A. Salmon and Fisheries

Mr. Tobey raises general concerns regarding fisheries impacts, including landlocked salmon. With respect to his concerns about impacts to landlocked salmon, the nearest lake containing this fishery is located more than 2.1 miles from the Project and therefore there will be no Project-related impacts to that fishery.

Additionally, as stated in our Pre-Filed Direct testimony and acknowledged by USFWS in its review of the Project, the Project is not located within the Gulf of Maine Distinct Population Segment of Atlantic Salmon. See Exhibit A. The Project area is located within two watersheds, Baskahegan Stream (HUC-10 0102000304) and West Grand Lake (HUC-10 0105000103). Although the Baskahegan Stream watershed is part of the Gulf of Maine Distinct Population Segment (GOM DPS), it is not listed as critical habitat.

As noted in the Pre-Filed Direct Testimony submitted by Sewell, the Project was designed to meet the State's water quality standards and a number of construction techniques are incorporated into the stormwater and erosion and sedimentation control measures for the Project, which will ensure that groundwater hydrology is maintained and erosion during construction is minimized. As a result, construction and operation of the Project is not likely to result in any appreciable sedimentation to any headwaters areas, streams, rivers or other water bodies.

B. Deer Wintering Areas

Finally, Mr. Tobey has raised concerns regarding the impact of the Project on deer wintering areas, including areas near Bowers Mountain. As noted in Exhibit 11A of the Application and as confirmed by MDIFW, there are no Deer Wintering Areas (DWAs) in the Project area.

III. REBUTTAL TO TESTIMONY OF GARY CAMPBELL

A. Fisheries

Mr. Campbell raises general concerns regarding fisheries impacts, including land-locked salmon, and Brook trout at Trout Lake. The salmon hatchery in Grand Lake Stream is located over 17 miles from the nearest turbine and there will be no Project-related impacts to this fishery. Similarly, West Grand Lake, characterized by Mr. Campbell as one of only five lakes in the State with native landlocked salmon, is located more than 8 miles from the Project. Trout Lake, located over 3 miles from the nearest turbine, is not located in the same watershed as the Project and, as such there will be no Project-related impacts to this fishery at this location. In addition, although Trout Lake is classified by LURC as a Remote Pond, it is not rated as a scenic lake, and because there will be no visibility of turbines from the lake, its remote status, natural value and primitive recreational experience in a remote setting will not be affected.

IV. REBUTTAL TO TESTIMONY REGARDING LAKE CLASSIFICATION AND EXISTING CONDITIONS AND USES

Throughout their testimony, Mr. Lawrence, Mr. Campbell, and Mr. Gurall include references to lakes of statewide significance, rather than those lakes “designated as outstanding or significant from a scenic perspective.” As Mr. Lawrence acknowledges, the rating “statewide significant” is based on seven categories, including fisheries, wildlife, scenic, shore character, botanic, cultural, and physical characteristics. Only the scenic rating is relevant for consideration of scenic impacts of wind projects. 35-A M.R.S.A. § 3451(9) (definition of scenic resource of state or national significance). The Resource Class of a lake is simply a classification system based on the total number of outstanding or significant values identified for the lake. Resource Class 1A means that a lake has two or more outstanding values; there are 114 Class 1A lakes,

some of which include a scenic rating of Outstanding (n=70) or Significant (n=18). Resource Class 1B means that this lake has one outstanding value; there are 211 Class 1B lakes, some of which include a scenic rating of Outstanding (n=39) or Significant (49).

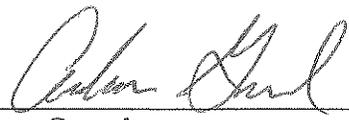
Mr. Gurrall and Mr. Campbell go on to assert that this region (although they are not specific in the boundaries of this region) includes the “single largest concentration of Class 1A and Class 1B lakes in the State,” and provide tables and maps listing various lakes in support of this statement. See Campbell Pre-Filed Direct Testimony at 7; Gurrall Pre-Filed Direct Testimony at 3, 7. Many of the lakes they reference are more than eight miles from the Project. Moreover, as shown on Exhibit F, the concentration of Class 1A and Class 1B lakes in the West Grand Lake watershed is similar to many other areas of LURC’s jurisdiction and, in fact, there are seven watersheds with greater concentrations and numbers of Class 1A and Class 1B lakes, including the West Branch of the Penobscot, North Branch Dead River, Pleasant River, Moosehead Lake, and Mooselookmeguntic Lake. Only four of the lakes identified by Mr. Gurrall and Mr. Campbell will have visibility of turbines within 8 miles.

In addition, the concentration of scenic lakes (rated as Outstanding or Significant) is similar to many other areas of the state, as shown on Exhibit G, and the majority of scenic lakes in LURC jurisdiction are located more than three miles from the Expedited Wind Permitting Area.

In his testimony, Mr. Campbell includes a map of “the downeast watershed showing locations of public boat launches and public campsites,” (page 6) and Mr. Lawrence includes a similar map as Exhibit 15 to his testimony. Although there are inconsistencies in the data (for example, Mr. Lawrence shows a boat launch on Keg Lake, Mr. Campbell does not, and to our knowledge, there is no public boat launch on this lake), Mr. Campbell asserts that there are 32

campsites and 33 public boat launches on the lakes. However, as described in the Application, and shown on Exhibit H, there are only 6 boat launches and 9 campsites located on lakes that are scenic resources of state or national significance and which have visibility of the Project within 8 miles.

Date: 6/17/2011


Adam Gravel

STATE OF Maine
County of Sagadahoc

Date: June 17, 2011

Personally appeared before me the above named Adam Gravel, who, being duly sworn, did testify that the foregoing testimony was true and correct to the best of his knowledge and belief.

Before me,


Notary Public *ATTORNEY AT LAW*
My commission expires: #3347

Date: 6/17/11



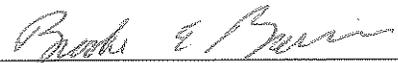
Dale Knapp

STATE OF Maine
County of Sagadahoc

Date: June 17, 2011

Personally appeared before me the above named Dale Knapp, who, being duly sworn, did testify that the foregoing testimony was true and correct to the best of his knowledge and belief.

Before me,



Notary Public *ATTORNEY AT LAW*
My commission expires: # 3347

Date: June 17, 2011



Joy Prescott

STATE OF Maine
County of Sagadahoc

Date: June 17, 2011

Personally appeared before me the above named Joy Prescott, who, being duly sworn, did testify that the foregoing testimony was true and correct to the best of his knowledge and belief.

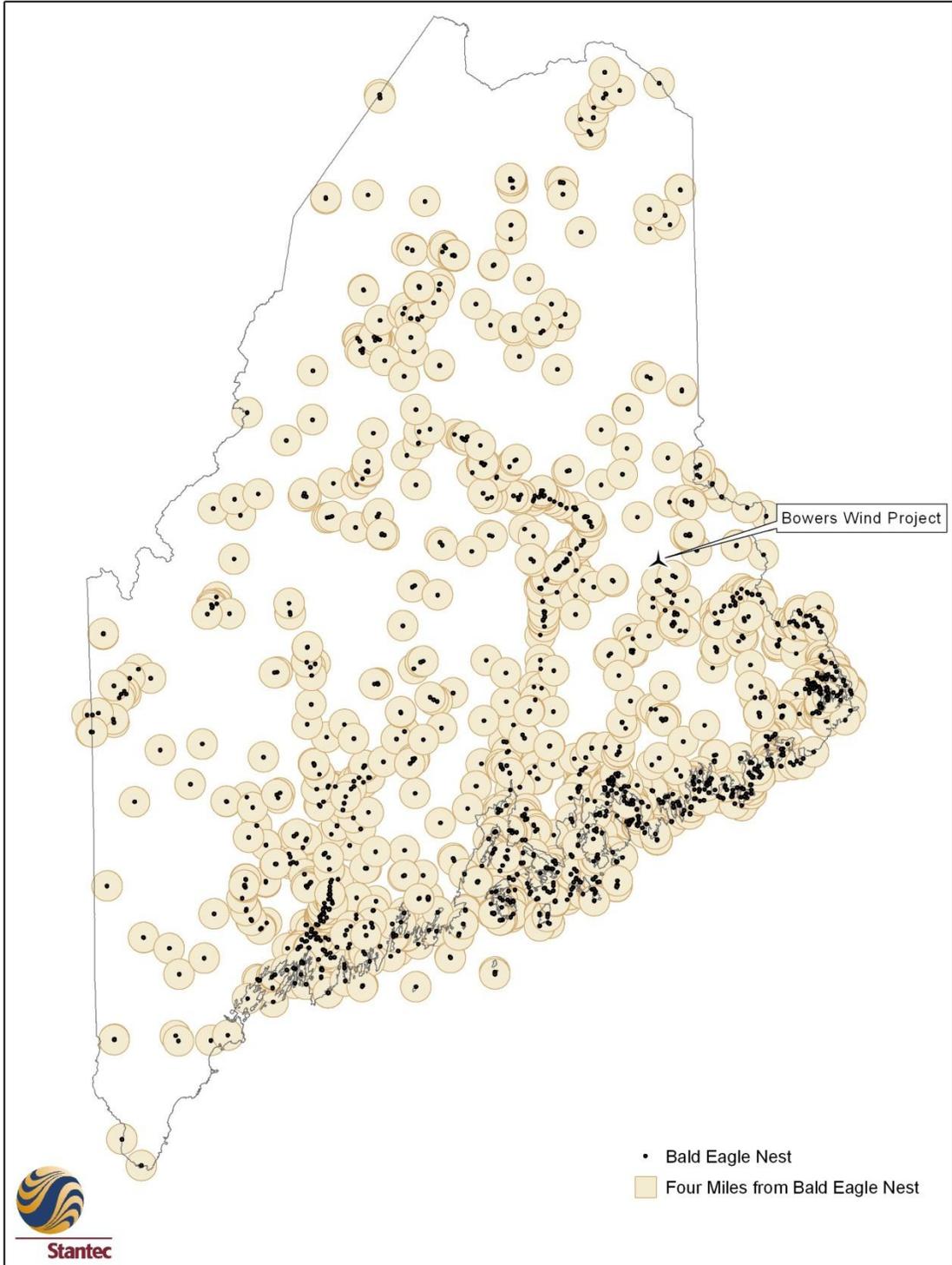
Before me,

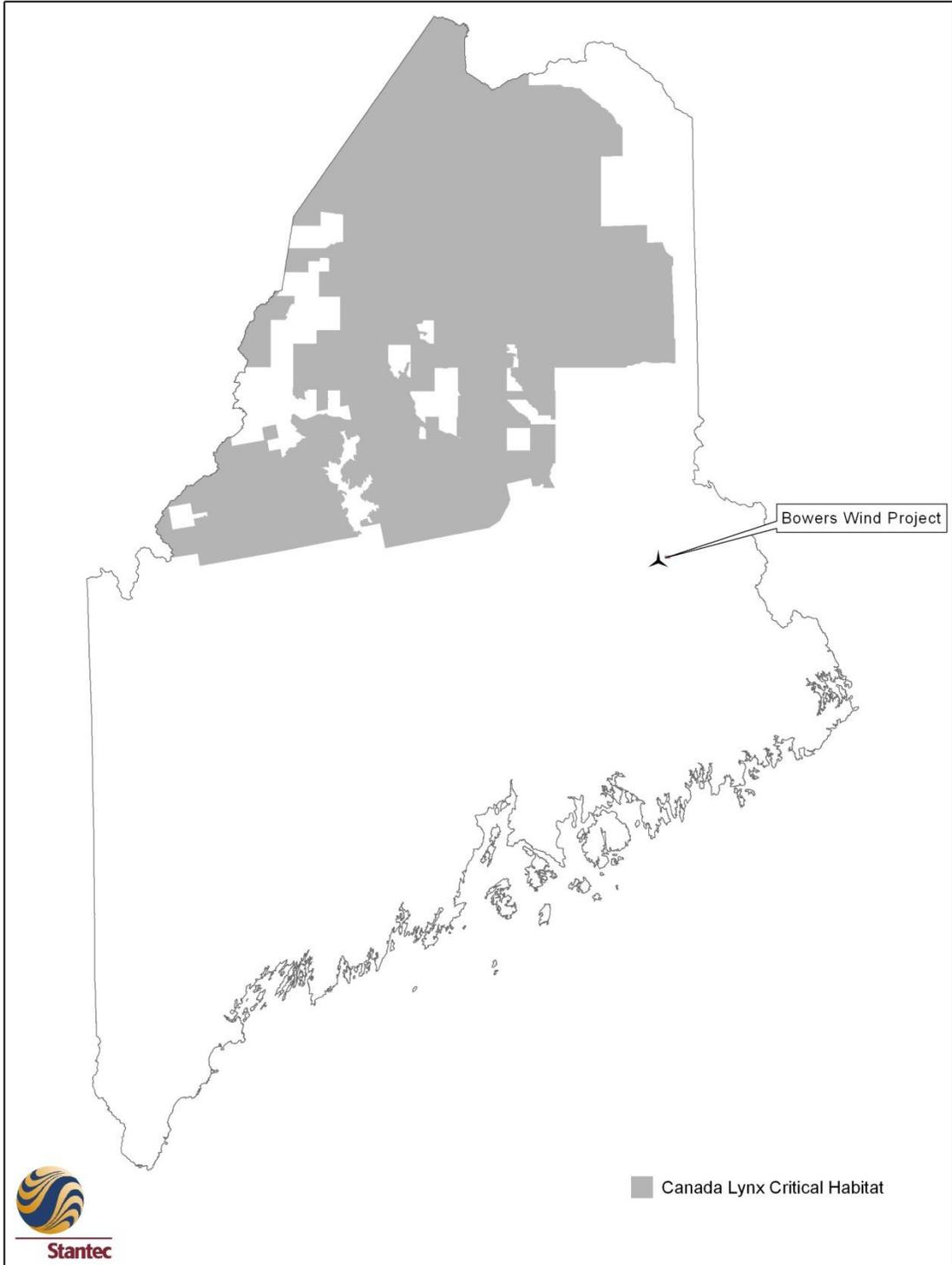


Notary Public *Arrived at LAO*
My commission expires: * 3/3/17

Gravel, Knapp, and Prescott Pre-Filed Rebuttal Testimony Exhibits

- Exhibit A: Maps of Designated Habitat and Elevation Areas
- Exhibit B: May 11, 2011 USFWS Corps letter for Bowers
- Exhibit C: Lynx habitat assessment
- Exhibit D: USFWS Corps letter for Kibby
USFWS Corps letter for Oakfield
- Exhibit E: June 15, 2011 MDIFW Response for Bull Hill
- Exhibit F: Map of Resource Class 1A and 1B Lakes
- Exhibit G: Map of Outstanding and Scenic Lakes
- Exhibit H: Map of Recreation Resources and Shoreline Ownership

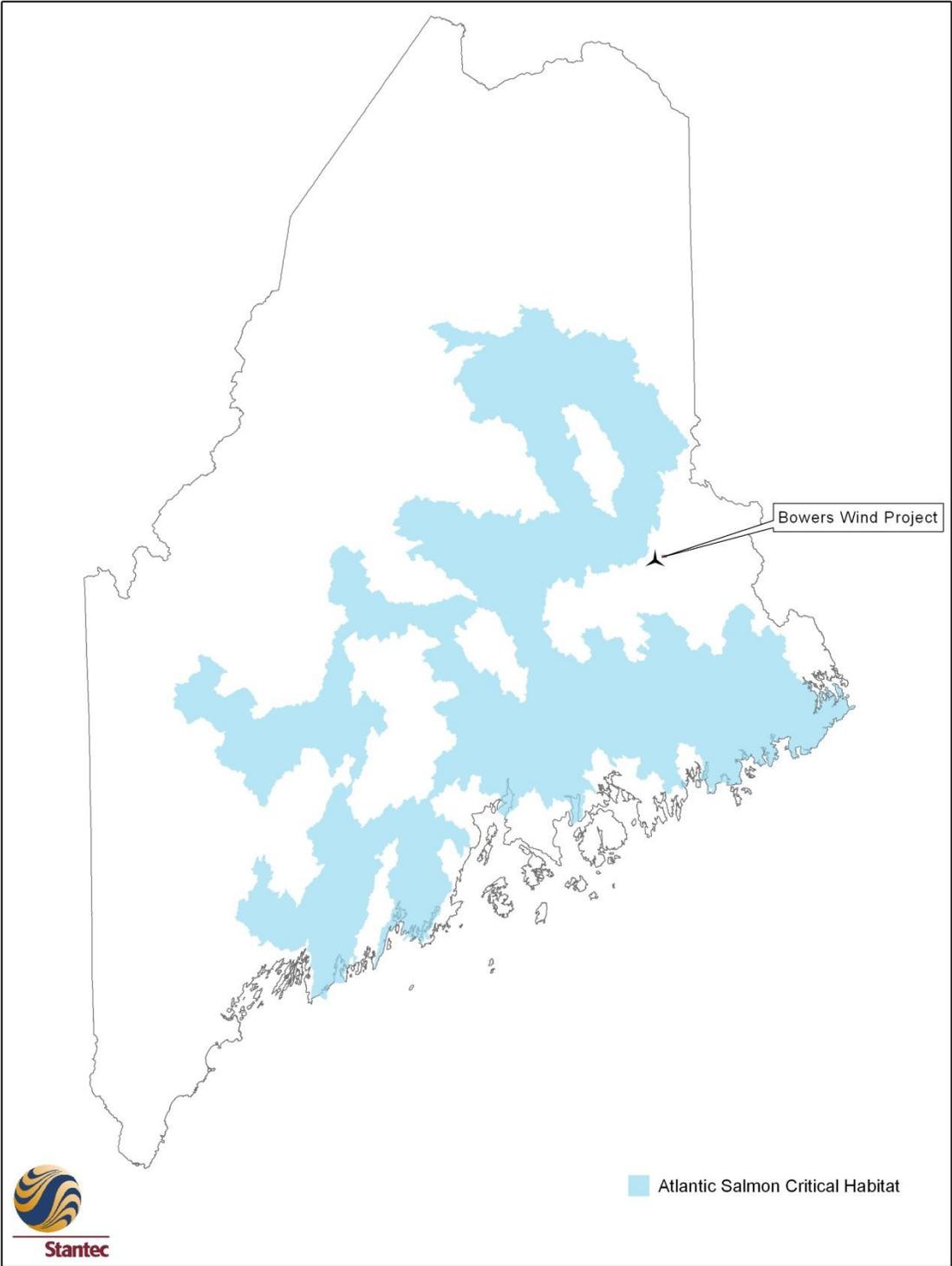


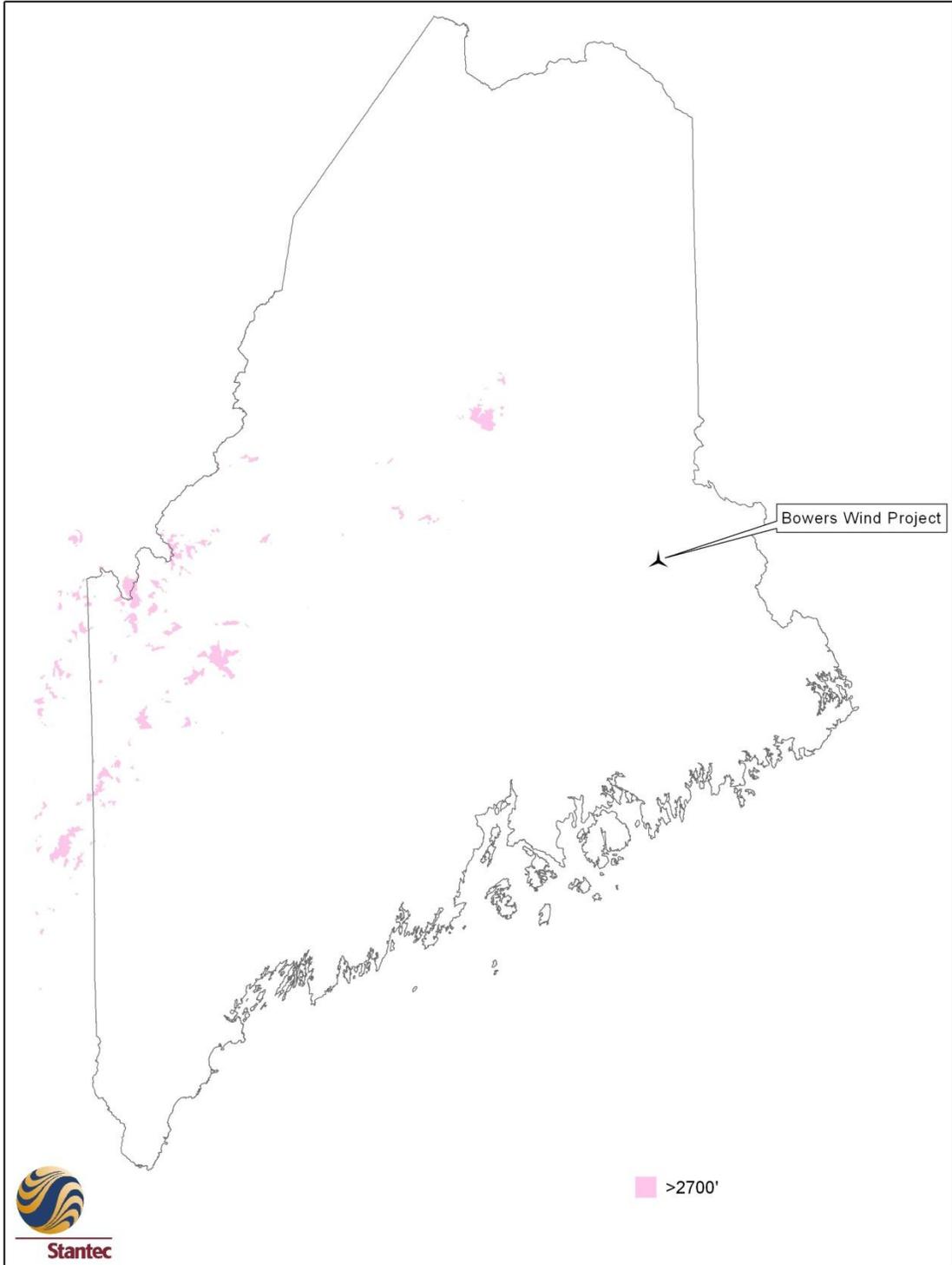


Bowers Wind Project



Canada Lynx Critical Habitat







United States Department of the Interior



FISH AND WILDLIFE SERVICE

Maine Field Office – Ecological Services
1168 Main Street
Old Town, ME 04468
(207) 827-5938 Fax: (207) 827-6099

In Reply Refer To: 53411-2009-SL0374 and 2011-SL-0077
FWS/Region5/ES/MEFO

May 11, 2011

Jennifer McCarthy, Chief
Regulatory Branch
Department of the Army
New England District, Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

Dear Ms. McCarthy:

This letter is in response to the Army Corps of Engineers review for the Bowers, wind project in Penobscot and Washington Counties, Maine. Champlain Wind, LLC has proposed construction of a utility-scale wind energy facility to be located in Carroll and Kossuth Townships. The project will include up to 27 turbines, associated access roads, and a 34.5 kV electrical connector system, electrical substation, and associated maintenance buildings.

We have reviewed the fall 2009 and spring 2010 Avian and Bat Surveys, 2010 bald eagle aerial surveys, and wildlife habitat report. We are providing comments in accordance with Section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1543), Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250)(Eagle Act), Migratory Bird Treaty Act (16 U.S.C. 703-712)(MBTA), and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667d).

Federally listed species

The project is located outside of the range of the Gulf of Maine Distinct Population Segment (GOM DPS) of Atlantic Salmon in Maine. No other federally listed species occur within the project area.

Other protected species

Bald eagles

Migratory, transient, and nesting bald eagles occur in the project area. Stantec Consulting completed fall migrating raptor surveys 2009 and spring raptor surveys in 2010. Aerial bald eagle nest surveys were conducted during the spring of 2010 and 2011. Final reports were

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provided to the Service January 2010, June 2010, and September 2010. Six bald eagles (2 in project area) were observed during the fall 2009 migration period and 7 bald eagles (3 in project area) were observed during the spring 2010 migration.

Bald eagle surveys conducted within 4 miles of the project area in 2010 and 2011 did not locate new eagle nests. The closest eagle nests are located on Junior Lake and Scraggly Lake, approximately 4.2 and 4.8 miles from the nearest proposed turbine location, respectively. Both nests are active and recently produced young.

The survey data suggests that current use of the project area by migrating and resident bald eagles is lower than many proposed or existing Maine wind projects. In accordance with the Service's new *Draft Eagle Conservation Plan Guidance (Guidance)* for wind power projects we would consider the Bowers project to be of moderate risk to bald eagles (p. 22 of *Guidance*), i.e., the project is located where there are multiple nesting territories within 10 miles, eagle populations are increasing in the area, and substantial potential habitat occurs close (within 4 miles) to the project area (e.g., Baskahegan Stream, Lowell Lake, Duck Lake, Mill Privilege Lake, Lindsay Bog, Shaw Lake and Pleasant Lake are all within 4 miles of the project). Eagle use of the area could change in the future if nests are established on these lakes. Therefore, post-construction eagle monitoring and planning are warranted.

The Service's new *Draft Eagle Conservation Plan Guidance* recommends that an Eagle Conservation Plan (ECP, p. 27-30 of guidance) should be prepared to document survey methods for documenting new eagle nests, methods for detecting eagle mortality from collisions, adaptive management to address uncertainty and changed circumstance, and to identify measures to avoid and minimize take of eagles. The project applicant did not provide a quantitative assessment of the risk of bald eagle mortality from the project, a statement of risk to bald eagles, or an indication of whether they intend to pursue an incidental take permit under the BGEPA. Although risk to eagles may not warrant pursuing an Eagle Act permit at this time, conditions could change in the future, especially if new nests are established close to the project. In this circumstance, additional monitoring, surveys, and a quantitative risk assessment would be warranted.

According to the *Guidance*, an ECP should become an integral part of the permit process. An ECP can be incorporated into an Avian and Bat Protection Plan (ABPP), (see Migratory Bird and Bat section below).

In this instance, the Service's *Draft Eagle Conservation Plan Guidance* was developed after the applicant completed most of their pre-construction surveys. The Service recommends that an ECP and/or ABPP that addresses eagles be completed and reviewed by the Service prior to commercial operation of this wind project to include the following:

- Methods for periodic survey of bald eagle nests and habitat once every three years within 4 miles of the project for the life of the project to monitor nest occupancy, productivity, and locate new nests.
- A commitment to monitoring for eagle mortality for the life of the project. This effort should include:

1. Weekly inspections of the areas around turbines from February through November by trained operations personnel to document evidence of eagle take. Inspections should start when the turbines are operational.
 2. Immediate reporting of any observed eagle fatalities, injuries or other apparent take to the Service and Maine Department of Inland Fisheries and Wildlife.
 3. Provisions for adjusting the frequency of inspections and changes in methods based in response to eagle activity periods.
- Contingencies for initiating new research, monitoring, and surveys, that will be employed if risk to eagles increases to moderate or high levels, i.e. a new nest occurs within 4 miles of the project, a bald eagle is killed, or an increase in eagle use of the project areas occurs. The ECP or ABPP should describe field study methodologies and quantitative risk assessment methods used (i.e., Stage 2 and 3 analyses p. 20 in the *Guidelines*). Contingencies/thresholds for applying for a BGEPA take permit should be articulated. Potential Advanced Conservation Practices (Appendix E in Guidance) that may be employed to avoid take should be described.
 - A commitment to incorporate new research findings concerning eagle mortality at wind power projects and additional mitigation measures depending on the best available scientific information, severity of impacts at this project, cost benefit considerations, and practicality.

We recommend that an ECP and/or ABPP incorporating the elements above be reviewed and approved by the Service prior to commercial operations.

Migratory Birds and Bats

Passage rates, flight heights, proportion in the rotor swept zone, raptor migration rates, etc. collected at the Bowers site were comparable or less than similar measures obtained at other wind projects in Maine. However, pre-construction survey data do not always correlate with the potential for bird and bat mortality at wind projects.

The potential for avian and bat mortality by collisions with turbines is one of the primary wildlife effects expected from this project. All wind power projects will take birds and bats. In February, 2011 the Service announced draft *Land-based Wind Energy Guidelines* to guide development of wind projects that minimizes take of migratory birds. Voluntary adherence to these guidelines will provide evidence of due care with respect to avoiding, minimizing and mitigating adverse impacts to species protected under the MBTA and Eagle Act. Implementation of these draft guidelines may best be accomplished through development of Avian and Bat Protection Plans (ABPP) or similar plans that highlight an adaptive approach to reduce the operational risks resulting from bird and bat interactions with a wind energy facility. Typically, a project-specific ABPP will document the analyses, studies, and reasoning that support progressing from one tier to the next in the tiered approach described in these draft guidelines. Often, an ABPP will be developed in stages, over time, as analysis and studies are undertaken for each tier. It will also address the post-construction monitoring efforts for mortality and habitat effects.

The Service recommends at least two years of post-construction bird and bat mortality studies.

New research and post-construction mortality studies of wind projects suggest that migratory bats could be at greater risk of collision than birds. Most fatalities in the Northeast occur during the fall migration (August to November). Bat studies from this location and others in Maine suggest substantive bat activity in July as well. The Service is considering federal listing for several bat species found in the Northeast.

Recent research has shown that increasing cut in speeds of turbines (e.g., at wind speeds of 5 or 6 m/sec) at night during late summer and early fall may be an effective way to reduce bat mortality at wind power projects. We request that Bowers considers implementing this operational adjustment in their ABPP to minimize take to bats. Measures to avoid and minimize take of bats will be particularly important should additional species of bats be federally listed.

Although the Service's *Draft Land-Based Wind Energy Guidelines* will not likely be in effect until 2012, many wind projects in Maine and elsewhere are developing ABPPs as a standard operating procedure. We recommend that an ECP and/or ABPP incorporating the elements above be reviewed and approved by the Service prior to commercial operations.

Conclusion

We are comfortable with the Corps issuing a permit for the Bowers project. We recommend that the suggestions above be incorporated into permit conditions for this project. Please contact Mark McCollough or Wende Mahaney at 207 866-3344 if you have further questions or concerns.

Sincerely,



Laury Zicari, Project Leader
Maine Field Office

cc: Sean Mahaney, ACOE Maine
Steve Pelletier, Stantec Consulting
Charlie Todd, MDIFW
Steve Timpano, MDIFW



Memo

To: Joy Prescott
Topsham ME Office

From: Adam Gravel
Topsham ME Office

File: 195600552

Date: June 15, 2011

Reference: Assessment of Potential Canada Lynx Habitat, Bowers Wind Power Project, Carroll Plantation and Kossuth Township, Maine

As requested, we have completed an assessment of potential Canada lynx (*Lynx canadensis*) habitat in the vicinity of the Bowers Wind Project area (Project). The purpose of the assessment was to respond to a recent request by Mark McCullough of the U.S. Fish and Wildlife Service (USFWS) regarding the status of the federally-endangered lynx and its habitat in the area of the proposed Project.

Lynx in Maine prefer to use regenerating spruce-fir habitats with high stem densities because these cover types can support high populations of snowshoe hare (*Lepus americanus*), their preferred and primary food source. This type of habitat is typically found in regenerating timber management clear-cuts or partial-cuts where the tree canopy has been removed. Optimum snowshoe hare cover typically develops 10 to 30 years after the cutting as softwood (coniferous) regeneration becomes dense enough and large enough to provide both food and cover for the hare. Dense hardwood (deciduous) regeneration can also provide suitable hare habitat. Though forested wetlands (i.e., bogs and swamps) and late-successional forests can contain dense softwood cover, the literature indicates that snowshoe hare densities are lower in these cover types.

In response to the USFWS request, we reviewed recent aerial photography with the intent of mapping stands of dense regenerating softwoods, with the assumption that these areas would be more likely to support higher populations of snowshoe hare and thus would have a reasonable potential to support lynx. Note that habitat associations such as this will not necessarily or accurately predict the presence of lynx in the study area. Many other factors such as existing development patterns, highways, ongoing human disturbance, habitat fragmentation, regional and local lynx and hare population densities, and individual animal home ranges likely play an equally important role in the distribution of lynx.

Methods

To identify the stands of regenerating softwoods, as well as similarly-appropriate dense mixed wood and deciduous stands, we reviewed available orthophotos comprised of true color, high resolution digital aerial imagery. These photos were acquired specifically for this Project, dated November, 18, 2009, and depict leaf-off conditions for deciduous vegetation. The imagery was viewed on-screen in 2-D using AutoCAD software. Habitat types known to be preferred by snowshoe hare and Canada lynx were identified on the imagery and digitized into polygons representing potential high-value, moderate-value, and low-value habitats, as existing at the time the imagery was

Reference: Potential Canada lynx habitat in vicinity of Bowers Wind Project

collected. Given that hare are the preferred food of lynx, it is assumed that if habitat could support hare populations, it can be potential lynx foraging habitat. The preferred habitats for snowshoe hare typically include dense stands of regenerating coniferous forest that provide them with food and cover. Dense deciduous and mixed regenerating stands may also provide suitable habitat conditions, and as such were included in the mapping of potential lynx habitat. The habitat value assignments (i.e. high, moderate, and low) represent the differences in vegetation density, size, and spatial distribution, and relate to the relative ability to provide potential food and cover for hare.

Results

The attached Figure 1 illustrates the results of the habitat assessment for potential lynx habitat (as described above). As noted, the primary objective was to identify regenerating softwood stands. Though the optimum habitat conditions are reported to be 10 to 30 years post-harvesting, we found it difficult to determine the age of regeneration in most cases with the desktop review. Rather, we opted to map areas of observable softwood regeneration regardless of age-class. In this way, the mapped areas depict a range of age-classes that could provide suitable hare habitat currently, or would be expected to provide it within the next few years as tree height and/or density increase. Some of the mapped stands may also be past the appropriate age for suitable hare habitat.

As shown on Figure 1, it appears that there are no large stands of dense softwood regeneration within the Project area, and a very limited amount will be directly impacted by the proposed development. A few patches of regeneration are located within 1,000 feet of the proposed roads and turbine towers. One larger stand of deciduous regeneration is located near the southern area of the proposed Project, but due to the lack of softwood cover, it is questionable as to whether this habitat would be able to provide sufficient winter cover to support high hare populations.

The permanent footprint for this Project (66 acres) represents a small amount of habitat loss for lynx, considering the size of a lynx home range and because of the limited hare habitat. The Project will include construction of 11.13 miles of new roads (included 1.31 miles of upgrades to existing roads). As shown on Figure 1, the vicinity of the Project area includes a network of existing roads. Only 0.41 miles of 11.13 miles (4%) of new roads intersect with habitat classified as potential moderate-value lynx habitat. These new roads do not intersect with any potential low-value or potential high-value lynx habitat.

The Project is located over 29 miles from the border of the designated Critical Habitat (Figure 2). The interstate highway appears to form the eastern boundary of the designated Critical Habitat. The interstate's corridor, along with the presence of the Penobscot River, Mattawamkeag River, Route 2, Route 169, and Route 6 are obvious features that could present a barrier to lynx movements into Project area from the north and west. In addition, there is a network of existing roads (paved and unpaved) as well as residential development in the vicinity of the Project as well as in the nearby organized towns of Springfield and Topsfield. These factors should be considered in any the evaluations of lynx presence/absence in the Project area.

Stantec

June 15, 2011

Page 3 of 3

Reference: Potential Canada lynx habitat in vicinity of Bowers Wind Project

In summary, there appears to be little regenerating softwood habitat within or near the proposed Bowers project area (Figure 1). Much of the Project area consists of deciduous forest cover types, either intact or recently cut, as this is an actively managed and dynamic landscape.

Please let me know if you need any further information for this Project.

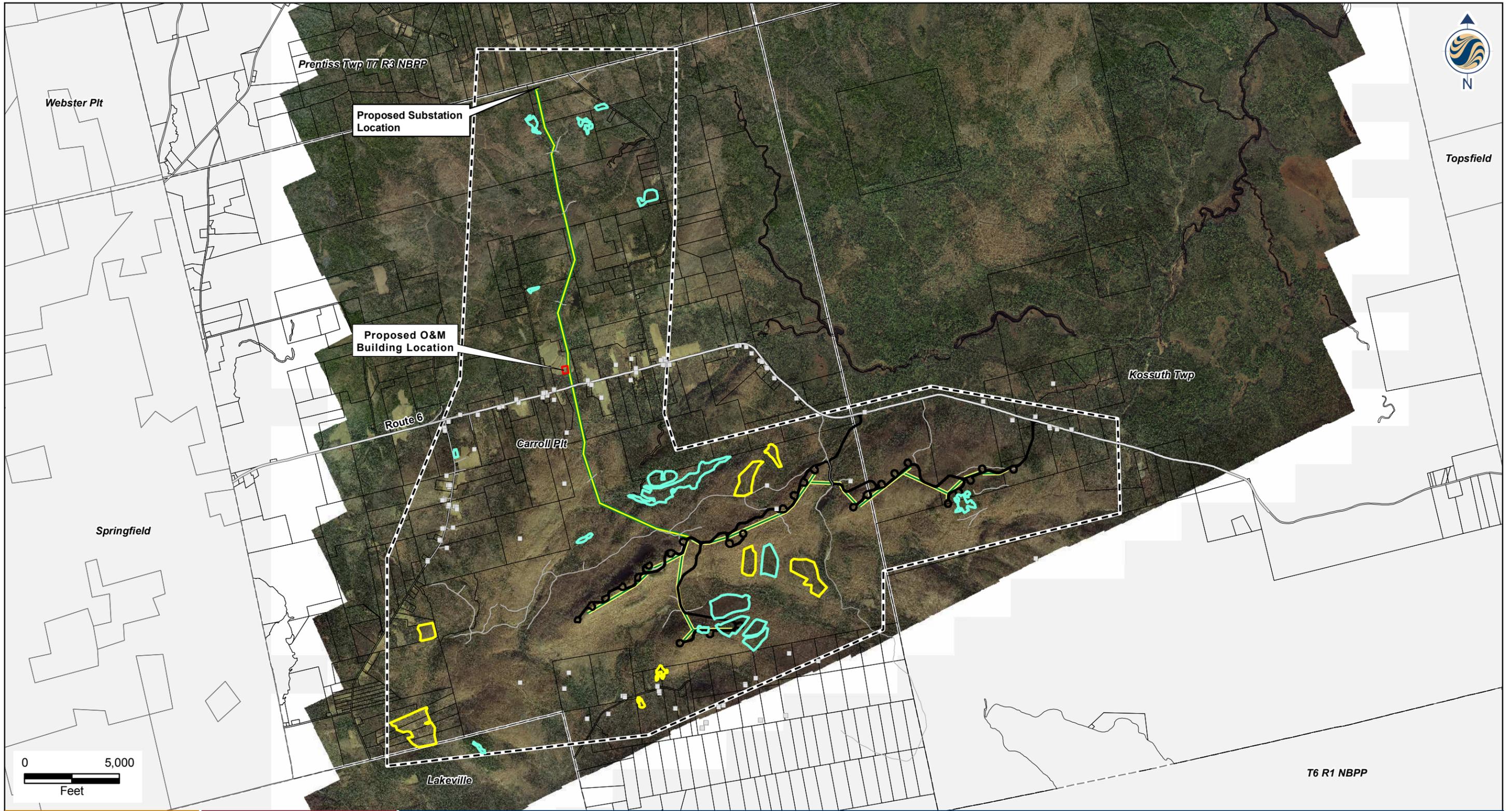
STANTEC CONSULTING SERVICES INC.

Adam Gravel

Adam Gravel

Associate, Certified Wildlife Biologist

Attachments: Figures 1 and 2




Stantec Consulting Services Inc.
 30 Park Drive
 Topsham, ME USA
 04086
 Phone (207) 729-1199
 Fax: (207) 729-2715
 www.stantec.com

00522-F001-LynxHabitat-11x17

Legend

- Structures
- ▭ Potential High Value Hare Habitat
- ▭ Potential Moderate Value Hare Habitat
- ▭ Potential Low Value Hare Habitat
- Road Alignment and Turbine Pads
- Express Collector
- Mountain Top Collector
- ⬡ Study Area

Note:

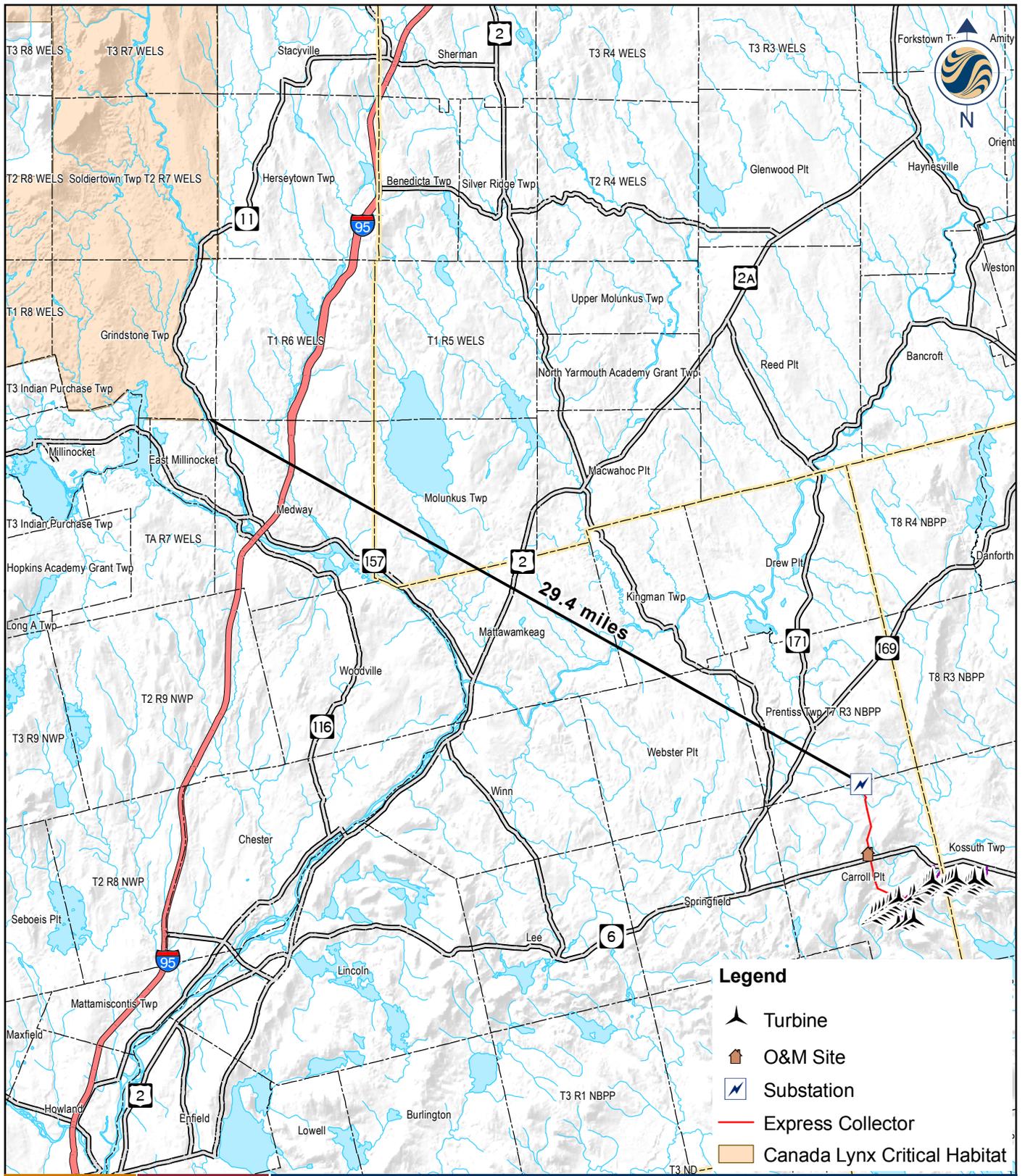
To identify potential Canada lynx habitat, Stantec reviewed available orthophotos comprised of true color, high resolution digital aerial imagery acquired specifically for this project and dated November 18, 2009. The imagery was viewed on-screen in 2-D using AutoCAD© software. Habitat types known to be preferred by snowshoe hares and Canada lynx were identified on the imagery and digitized into polygons representing potential high-value, moderate-value, and low-value habitats, as existing at the time the imagery was collected. Given that hares are the preferred food of lynx, it is assumed that if a habitat could support hare populations, it is a potential lynx feeding habitat. The preferred habitats for snowshoe hares typically include dense stands of regenerating coniferous forest that provide them with food and cover. Dense deciduous and mixed regenerating stands may also provide suitable habitat conditions, and as such were included in the mapping of potential lynx habitat. The habitat value assignments (i.e., high, moderate, and low) represent the differences in vegetation density, size, and spatial distribution, and relate to the relative ability to provide potential food and cover for hares.

Client/Project
Champlain Wind, LLC
Bowers Wind Project
Carroll Plt & Kossuth Twp, Maine

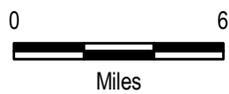
Figure No.
1

Title
Potential Snowshoe Hare/Lynx Habitat
Identified by Remote Sensing
 June 15, 2011

195600522



Stantec Consulting Services Inc.
 30 Park Drive
 Topsham, ME USA
 04086
 Phone (207) 729-1199
 Fax: (207) 729-2715
 www.stantec.com





United States Department of the Interior



FISH AND WILDLIFE SERVICE

Maine Field Office – Ecological Services
1168 Main Street
Old Town, ME 04468
(207) 827-5938 Fax: (207) 827-6099

In Reply Refer To: 53411-2008-I-0263
FWS/Region 5/ES/MEFO

August 4, 2009

Steven Andon
Acting Deputy District Engineer
Department of the Army
New England District, Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

Dear Mr. Andon:

Thank you for your letter dated July 17, 2009 requesting informal consultation from the U.S. Fish and Wildlife Service. This letter provides the Service's response pursuant to Section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1543), and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667d).

Project Name/Location/County: Request for informal re-consultation, TransCanada Maine Windpower, LLC: Kibby Windpower Facility

The Corps of Engineers permit no. NAE-2005-03179 authorized TransCanada Maine Windpower, LLC to place temporary and permanent fill in waterways and wetlands between Kibby Township and Carrabasset Valley, Maine in order to facilitate the construction of a mountain top wind project with an associated aerial transmission line. Construction of the project is underway.

On June 23, 2008 the Maine Field Office of the U. S. Fish and Wildlife Service (Service) concluded informal consultation with the Maine Office of the Army Corps of Engineers (Corps) on this project. In our letter, the Service noted that the wind power project had the potential to adversely affect the federally-threatened Canada lynx from loss of habitat, disturbance from road construction, direct road mortality (construction phase and post-construction operation), and indirect road-related mortality (public traffic on roads and increased access for hunting and trapping). In our letter we made recommendations to avoid adverse effects. The Corps incorporated these recommendations as conditions to the permit, and we concurred with the Corps that the project was not likely to adversely affect the Canada lynx. Special Condition 8 of the permit contained the following minimization measures (paraphrased):

**TAKE PRIDE
IN AMERICA** 

- Post-construction snow track surveys 2-3 years post-construction to document occurrence of lynx;
- Traffic speeds during and after construction be kept less than 30 mph to minimize risk of collision;
- TransCanada will investigate the possibility of gating new roads to vehicle traffic during the fall hunting and trapping seasons to further reduce the likelihood of incidental take of lynx

The permittee has indicated they remain committed to compliance with these conditions.

Since our June 23, 2008 informal consultation with the Corps, critical habitat was designated for the Canada lynx. This designation under the Endangered Species Act became effective on March 27, 2009 (74 FR 8616: February 25, 2009). A small portion of the wind power project (7.3 acres) occurs in Skinner Township within the designated lynx critical habitat. The majority of the project occurs in Kibby Township, which is located outside of the lynx critical habitat. In your July 17, 2009 letter the Corps requests to reopen informal consultation with the Service and seeks concurrence with the Service with a determination that the project is not likely to adversely affect designated lynx critical habitat. The permittee's agent, TRC Engineering, provided additional information to the Corps and Service to assist with an analysis of the effects to critical habitat. The nature of construction activity is summarized as follows:

Construction within Skinner Township includes 1,940 feet of new road, two wind turbine pads, associated electric collector lines, and a meteorological tower. The collective footprint of construction within Skinner Township will be 7.3 acres. The forest that was cleared is a mature softwood/hardwood mix. Species composition includes spruce, fir, and paper birch with a sparse understory of hobblebush, saplings and herbaceous growth. Canopy height is generally 40-50 feet and the trees are >40 years old. Some coarse woody debris was likely removed by construction activities, but there is no shortage of coarse woody debris in the project vicinity.

During construction, roads between turbines will be 34 feet wide to accommodate the travel of cranes between turbines. The two turbine pads in Skinner Township are approximately one acre in size. Per Land Use Regulation Commission permit conditions, roads will be allowed to revegetate to be approximately 20 feet wide, and turbine pads will be allowed to revegetate leaving approximately 0.3 acres of clearing. Thus, the permanent footprint of the area that will be maintained unvegetated in Skinner Township will diminish from 7.3 acres to approximately 1.5 acres. Areas will be allowed to revegetate with native vegetation such as balsam fir and paper birch. Areas under and adjacent to transmission lines will also be allowed to revegetate and will be maintained as shrub growth.

The Service's final rule designating critical habitat lists the primary constituent elements (PCEs) essential to the conservation of the Canada lynx that may require special management. Section 4-34 in our Section 7 manual states, "In evaluating project effects on critical habitat, the Service must be satisfied that the constituent elements of the critical habitat will not be altered or destroyed by proposed activities to the extent that the survival and recovery of the affected species would be appreciably reduced." The PCEs and analysis follow:

1. boreal forest landscapes that support hare densities able to support lynx populations;

Temporary project effects on lynx habitat in Skinner Township during the construction phase will be 7.3 acres and will diminish to 1.5 acres post-construction. The habitat impact will be miniscule in relation to the average home range of lynx in Maine (12-26 mi.²).

The mature mixed softwood-hardwood forest lacking dense understory currently in the project area would be expected to support low densities of snowshoe (~0.2 hares/ha). Minimum landscape hare densities of 0.7-1.4 hares/ha are believed to be necessary to support lynx. Optimal conditions for snowshoe hares occur 12-30 years after cutting. The affected forest stands in Skinner Township are past the age of supporting high hare populations. Revegetation under turbines, road edges, and transmission line corridors may improve habitat conditions for snowshoe hares in the project area. This project will not affect local and landscape hare densities or reduce the capability of habitat to support lynx populations.

2. deep, fluffy snow conditions;

This project will not affect snow conditions.

3. denning habitat; and

Average amounts of coarse woody debris occur on the site, and some debris was removed for project construction. Coarse woody debris is generally not limiting in northern Maine, and removal of some coarse woody debris will not affect the ability of lynx to den in the area. Operation of the wind turbines will have an unknown effect on lynx movements and habitat use in the area. TransCanada Maine is bound by Corps permit conditions to document lynx movements in the area via snow tracking studies. This project will not affect lynx denning habitat in the area.

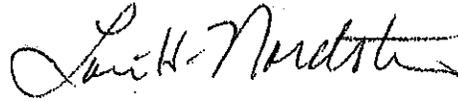
4. habitat connectivity;

Large forest openings (>300 ft.) can deter lynx movements. Openings associated with turbine pads, roads, and transmission line corridors are much smaller than this threshold and will not deter lynx movements in the area. Lynx in Maine have been regularly observed crossing and travelling on logging roads of this size. This project will not affect habitat connectivity.

We have reviewed your request for concurrence for effects on lynx critical habitat in Skinner Township. We concur with the Corps that this project is not likely to adversely affect critical habitat as a result of the proposed actions. Accordingly, no further action is required under Section 7 of the ESA; unless: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

If you have any questions, please contact Mark McCollough, endangered species specialist, at (207) 827-5938 x12.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lori Nordstrom". The signature is written in black ink and is positioned above the printed name.

Lori Nordstrom, Project Leader

cc: Jay Clement, Army Corps of Engineers
Dana Vallieu, TRC



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Maine Field Office – Ecological Services
17 Godfrey Drive, Suite #2
Orono, ME 04473
(207) 866-3344 Fax: (207) 866-3351

In Reply Refer To: 53411-2009-I-0314
FWS/Region5/ES/MEFO

November 23, 2009

Jennifer McCarthy
Chief, Regulatory Division
U. S. Army Corps of Engineers
696 Virginia Road
Concord, Ma 01742-2751

Dear Ms. McCarthy:

Thank you for your letter dated October 13, 2009 requesting informal consultation for an application for Evergreen Wind Power II, LLC, Oakfield Wind Project (#NAE-2009-00386) in Aroostook County, Maine. This letter provides the Fish and Wildlife Service's (Service) response pursuant to Section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1543), Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667d).

Evergreen Wind Power II, LLC proposes construction of the Oakfield Wind Project in Oakfield Maine. The project is expected to consist of 34 GE 1.5 MW turbines in Oakfield Hills. There will be four permanent 80-meter met towers and temporary 80-meter met towers at certain turbine locations during initial testing. There will be a total of approximately 15.3 miles of project roads of 12- or 32-foot width based on use. Power from the turbines will be collected in an overhead 34.5 kV lead collector line that will connect to an upgraded 69-kV line at the north end of the project. Total project footprint (clearing for turbines, new roads, transmission lines) is 256.5 acres of which 211 acres will be allowed to revegetate.

After construction all roads will be allowed to revegetate to a 12-foot width. Turbine pads and transmission line corridors will be maintained in a native shrub cover type and will provide early successional habitat for wildlife.

Federally listed species

Canada lynx

The federally-threatened Canada lynx could occur in Oakfield Township in the vicinity of the proposed project, however, no confirmed occurrences of lynx are known from this township. Oakfield abuts, but is outside of the designated lynx critical habitat. Maine Inland Fisheries and



Wildlife conducted lynx snow track surveys in Herseytown (two townships to the west) and did not find lynx, but did find lynx in T7 R5 (two townships to the northwest).

Evergreen contracted with Stantec to identify lynx habitat in the project area. Maps of potential lynx habitat (regenerating softwood, dense mixed wood and deciduous stands) were developed for the entire town of Oakfield and overlaid with the project footprint. Potential lynx habitat is limited in Oakfield and is located primarily scattered areas across the southern portion of the town. Most suitable habitat occurs along the eastern border of the town, approximately three miles from the project area. The ridgetops in the Oakfield Hills and most of the project area (245.9 of 256.5 acres) is dominated by deciduous forest cover types. Potential lynx and snowshoe habitat occurs at the southern portion of the area and is comprised of 10.6 acres of softwood/mixed forest of which 1.4 acres is believed to be in conditions that currently support high hare densities. The size and distribution of patches of potential habitat at the southern portion of the project area not sufficient to support a lynx home range and lynx, however lynx may be present as they disperse through the project area.

Adverse effects to Canada lynx could occur from loss of habitat, disturbance from road construction, direct road mortality (construction phase and post-construction operation), indirect road-related mortality (public traffic on roads, increased access for hunting and trapping). The effect of wind turbine operations (sound, visual impacts) on lynx or closely-related carnivore species is unknown.

Loss of habitat - The project impacts 256 acres of which 211 acres will be allowed to revegetate into early successional forest. Transmission line rights of way will be allowed to revegetate into early successional forest. These areas may create small patches of snowshoe hare habitat that may be of benefit to lynx, however, much of the habitat will be dominated by hardwoods. Transmission line corridors should not present a dispersal or movement barrier to lynx. A habitat map showed that lynx habitat (boreal forest with preferred snowshoe hare habitat) is rare on ridgelines where towers, roads, and transmission lines will be constructed. About 45 acres will be converted to non-forest habitat. There will be about 10.6 acres of potential lynx habitat temporarily lost during construction, and much of this area will be allowed to revegetate after construction. The permanent footprint of this project (45 acres) represents as small amount of habitat loss for lynx in a township which already has limited potential for lynx habitat.

The construction of 15.3 miles of new roads could provide forest land owners access into new areas to harvest. However, much of the project area already has logging roads and has been recently logged.

Only 0.65 miles of 15.3 miles (4%) of new roads intersects with potential softwood-dominated lynx habitat. Habitat loss to roads will only be a few acres and is insignificant.

Disturbance from road construction – Most townships on industrial forestlands in northern Maine are heavily roaded with single-lane logging roads (typically 80-120 km of road per 100 km² township). Lynx occur in northern Maine in heavy roaded townships. (Usually heavily roaded townships have more intense forest management, which, in many instances have benefitted lynx.) Forest road work is common in townships where lynx occur. Maine Inland

Fisheries and Wildlife has documented lynx dens have often been found less than ¼ mile from roads. It is unlikely that new road construction will disturb lynx to a point that will adversely affect or harm (kill or cause injury) as lynx are expected to be rarely encountered in Oakfield.

Direct road mortality (construction and post-construction) - Lynx road mortality is not likely during or after construction. There will be hundreds of trips by large trucks and smaller vehicles to the site to construct the wind facility over a two year period. Traffic speeds (especially for large trucks) will be <20-30 mph on logging roads. About 15 lynx have been killed on logging roads in Maine from 2000-2009. Post construction traffic will be several vehicles/day. We believe risk of incidental take insignificant because lynx are expected to rarely occur in the project area.

Indirect road-related mortality – There will be about 15.3 miles of new road construction in Oakfield. This project will increase roads in the township by a small amount. In Maine from 2000-2009, four lynx were shot illegally and 47 lynx were reported incidentally trapped during the trapping season (about 5 to 8 reported each year). Because of the number of landowners and existing access in the project area, it is the intent of the landowner to keep all roads open to the public. Creating new roads will increase access to new areas by hunters and trappers. However, the increased probability of take by hunting for this project is insignificant and discountable. Lynx may occasionally disperse through the township and the increased likelihood of trapping a lynx in Oakfield as a result of increased access from 15.3 miles of new roads is very low.

Minimization measures

The Army Corps of Engineers proposes the following measures to minimize potential impacts to the Canada lynx and its habitat as special permit conditions:

1. Upon completion of construction, the turbine pad sites (with the exception of the area within 25' radius of the turbine, and adjacent crane pad, which will remain a gravel surface), temporary shoulders of the access roads created for the crane access and lay down areas shall be stabilized, loamed, and seeded with native species to promote natural revegetation. Thos areas shall be allowed/encouraged to develop a dense growth of low ground cover and shrub species.
2. The effects of installing and operating wind turbines on Canada lynx and other carnivores is unknown. Anecdotal lynx track sightings should be documented by project personnel for a three year period after construction. The location of tracks should be mapped, photographed, and provided in a report annually to USFWS at the U. S. Fish and Wildlife Service, Maine Field Office, 17 Godfrey Drive, Suite #2, Orono, ME 04473.
3. Routine vegetation maintenance of the collector line corridor shall occur in accordance with and as outlined in the Post-Construction Vegetation Management Plan for the Oakfield Wind Project.
4. Traffic speeds during and after construction shall be kept less than 30mph (road design speed) to minimize collisions with lynx and other wildlife.

Additional recommendations

The Service has no additional recommendations to minimize effects to Canada lynx.

Atlantic salmon

The Oakfield Wind Project occurs within the range of the Gulf of Maine Distinct Population Segment of Atlantic salmon and within a watershed that is designated as critical habitat. During a June 11, 2009 site visit by Norm Dube, an Atlantic salmon biologist with the Maine Department of Marine Resources, it was determined that the unnamed tributary of Downing Brook (where a new stream crossing is proposed) provides suitable habitat for juvenile Atlantic salmon but not adults. A section of ledge outcroppings downstream of the proposed road crossing present a cascade that is impassable to juvenile Atlantic salmon. Because of the presence of a natural barrier to fish passage downstream of the proposed road crossing, this stream location does not contain critical habitat. Because Atlantic salmon are routinely stocked into the East Branch Mattawamkeag River (into which Downing Brook flows), it is possible that Atlantic salmon occur in the general project area. Downing Brook and its tributaries, however, have never been surveyed for the presence of salmon.

Since there is no critical habitat present at the proposed road crossing and a natural barrier prevents juvenile Atlantic salmon from reaching the project site, the Service would not expect any effects from the construction of the road crossing. Further, the Corps will require standard sediment and erosion control measures during all construction activities that could affect the stream. On October 9, 2009 LeeAnn Neal of your staff discussed potential effects of this project on Atlantic salmon and critical habitat with Wende Mahaney of my staff; we concurred with your determination that this project (in particular the proposed construction of a stream crossing) would have no effect on Atlantic salmon or critical habitat.

Summary

Based on the information and recommendations above, the Service concurs with your determination that the Oakfield Wind Project may affect, but is unlikely to adversely affect the Canada lynx. The project would have no effect on Atlantic salmon or designated critical habitat. Accordingly, no further action is required under Section 7 of the ESA, unless: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

We plan to comment on the bald eagle and migratory bird surveys in a separate letter.

If you have any questions, please call Mark McCollough, endangered species biologist, at (207) 866-3344, Ext. 115.

Sincerely,

A handwritten signature in cursive script, appearing to read "Erin Williams".

Erin Williams for
Lori Nordstrom, Project Leader
Maine Field Office

cc: Steve Timpano, MDIFW

Jay Clement, USACOE



PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
317 WHITNEYVILLE ROAD
PO BOX 220
JONESBORO, ME 04648
TEL: 207-434-5927

CHANDLER E. WOODCOCK
COMMISSIONER

June 15, 2011

Maine Department of Inland Fisheries and Wildlife response to questions from Sixth Procedural Order In the Matter of Development Permit DP 4886 Blue Sky East, LLC , Bull Hill Wind Project, June 3, 2011

Question to MDIFW:

“1.Does the 50/50 operational curtailment program proposed by the Applicant sufficiently reduce the risk of bird and bat mortality? Why or why not? In what way is the Applicant’s approach different from that proposed by the agency for the same two-year period to study the effects of operational curtailment on bird and bat mortality?”

MDIFW Response:

As expressed in MDIFW’s pre-filed comments and at the hearing, non-migratory populations of cave-dwelling bats remain a very serious concern for the Department. Since the Public Hearing on May 16 and 17, 2011, Maine has confirmed the presence of White Nose Syndrome in bat hibernacula inside the state for the first time. Any additive risk factors, including wind turbine mortality, may place these populations in jeopardy. Published studies, cited in the March 10, 2011 submission by IF&W, show that operational curtailment at low wind speed reduces bat mortality as a result of either collision with a turbine blade or barotrauma from extreme pressure changes near a blade. At the same time, IF&W understands that operational curtailment of the Bull Hill wind facility comes at a financial price for the applicant, so any program of curtailment should be targeted at the time periods when bats are present in the area and active. As described in First Wind’s letter of June 2, 2011, IF&W and the applicant have agreed to pursue a rigorous study of operational curtailment at the Bull Hill facility to determine the dates and conditions in which the practice is likely to substantially and effectively reduce bat mortality. This study is expected to closely follow the methods and pursue the same objectives as the study at the Sheffield wind facility, currently under construction in Vermont. Additional studies at comparable projects at other locations may be coordinated and pooled to improve analysis of statistical significance of study results. At the conclusion of the study(ies) all turbines at the Bull Hill facility should be operated under an agreed upon, LURC-approved operational regime including curtailment as may be determined by the studies. Specific dates and environmental conditions will depend on the study results. In the event that a final study design can not be agreed on, IF&W restates our recommendation that all turbines be curtailed from April 20 to October 15 from 30 minutes before sunset to 30 minutes after sunrise whenever wind speeds are below 5.0 mps.

Although a single treatment study plan has been discussed, under which 50% of the turbines would be curtailed up to 5.0 meters per second (mps) wind speed and the other 50% would operate normally, IF&W and the applicant have agreed that the final design of the study should be finalized in consultation with the Principal Investigator from Bat Conservation International or the University of Maine. IF&W would prefer to test multiple treatments, in which some of the turbines would be curtailed at 3.0 mps, some at 5.0 mps, others at 6.5 mps and the remaining turbines would operate normally. However, we understand that to produce statistically significant results that will withstand peer review, it may only be feasible to study the single treatment rather than the more thorough multiple treatments. As stated above, IF&W and the applicant are in agreement that the particular study protocols should be developed by the Principal Investigator in consultation with IF&W and the applicant.

Any final study design should include a “short-circuit” provision in case of specific high-mortality events or higher than expected bat mortality rates at non-curtailed control turbines. Under these conditions, the study would be suspended, and all turbines would be curtailed at wind speeds less than 5.0mps pending consultation with IF&W and/or US Fish and Wildlife Service.

Curtailed is not designed specifically to avoid or minimize bird mortality, and we are not aware of any data that shows that it will have that effect. However, it is reasonable to expect mortality of nighttime migrant species to be lower on nights when the turbines are not rotating.

“2. How does IF&W recommend that bird and bat mortality monitoring and oversight be conducted on an ongoing basis throughout operation at the wind power facility? Include a discussion of the thresholds that should trigger specific mitigation procedures, including curtailment, and how the results of those procedures would be evaluated.”

MDIFW Response:

Adequate population data are not available to determine mortality thresholds at which impacts to a bat species become significant on a population level. We do know that populations of many bat species are in steep decline for a number of reasons, including White Nose Syndrome, therefore any avoidable mortality is cause for concern. Rather than identifying a specific threshold, IF&W has recommended that all possible means to avoid bat mortality be implemented from the beginning of the project, including curtailment, and avoiding nighttime lighting of the facility.

At present, operational curtailment of all turbines during periods of bat activity as recommended, or as to be determined by the curtailment study described in Question 1, is the best method we have of avoiding and minimizing bat mortality.

Regarding birds, IF&W has not requested studies beyond the initial post-construction monitoring that has become standard on wind power facilities in Maine. However, any discovery of state or federally listed species should be reported to the appropriate agency and mitigation measures, if any, should be decided at that point. Similarly, any unusual mortality

event at a specific turbine or across the facility in a short period of time should be reported and mitigation measures considered.

“3. Provide written comments on the additional vernal pool information submitted by the applicant on May 16, 2011.

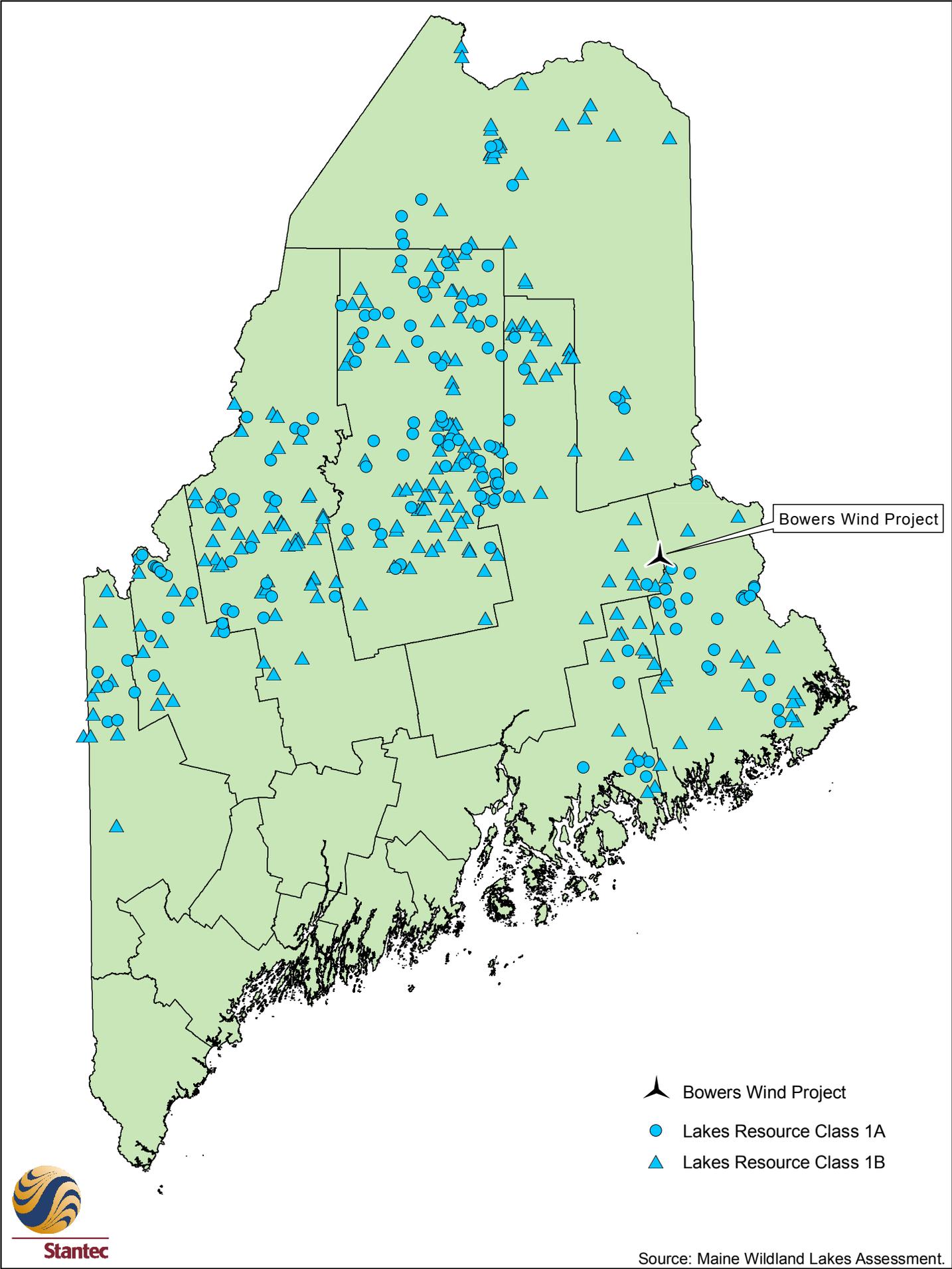
MDIFW Response:

IF&W has reviewed the additional survey forms and information provided by the applicant on May 16, 2011. The applicant has provided all the necessary information and has sufficiently avoided or minimized impacts to Significant Vernal Pools (SVP) and Potentially Significant Vernal Pools (PVP). Impacts to all SVP and PVP buffers will be less than the 25% threshold (see #4 for a discussion of the one exception), so no further recommendations or mitigation are necessary.

“4. Summarize the agency’s position that was discussed at the hearing on the impacted significant vernal pool located near the proposed Operation & Maintenance site in the Bangor Hydro Transmission Line corridor.”

MDIFW Response:

The 250 foot buffer zone around SVP 34CF-N is currently 39% cleared, as a result of existing forestry roads and a cleared powerline Right of Way. IF&W initially flagged this vernal pool as being unduly impacted by the change of use from forestry roads to wind farm operations roads. However, in consultation with the applicant, it appears that only a very small portion of the existing road and none of the powerline Right of Way will be under the operational control of First Wind. To be consistent with the way this issue is handled under DEP jurisdiction, IF&W only calculates impacts to a vernal pool buffer that are under the control of the applicant. We have not been given an exact percentage of the impact that will be under First Wind’s control, but it appears to be a fraction of the allowable 25% of the buffer zone. Given this information, IF&W does not consider impacts to SVP 34CF-N to be unreasonable and we are not suggesting any form of mitigation.



Bowers Wind Project

▲ Bowers Wind Project

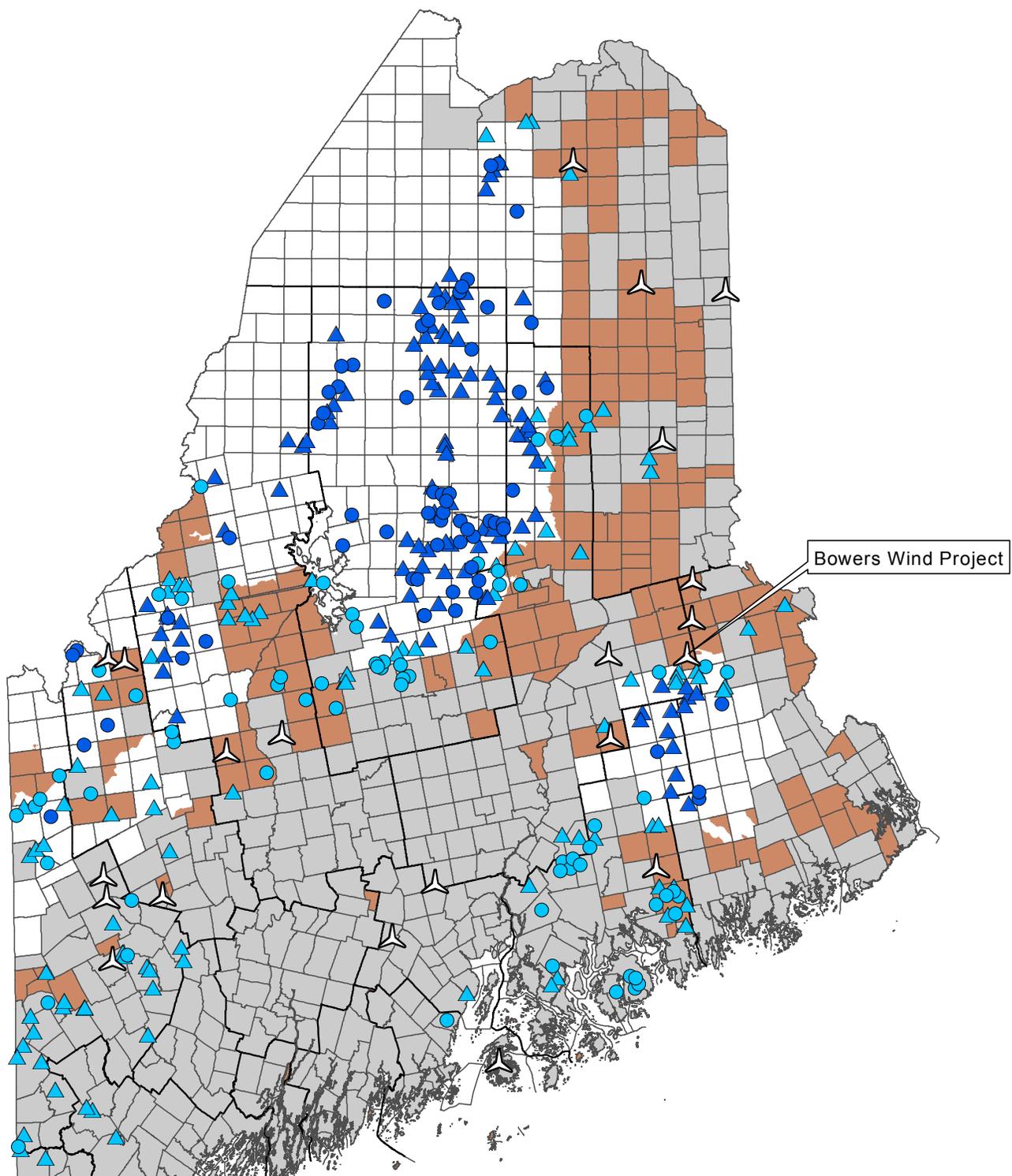
● Lakes Resource Class 1A

▲ Lakes Resource Class 1B



Stantec

Source: Maine Wildland Lakes Assessment.

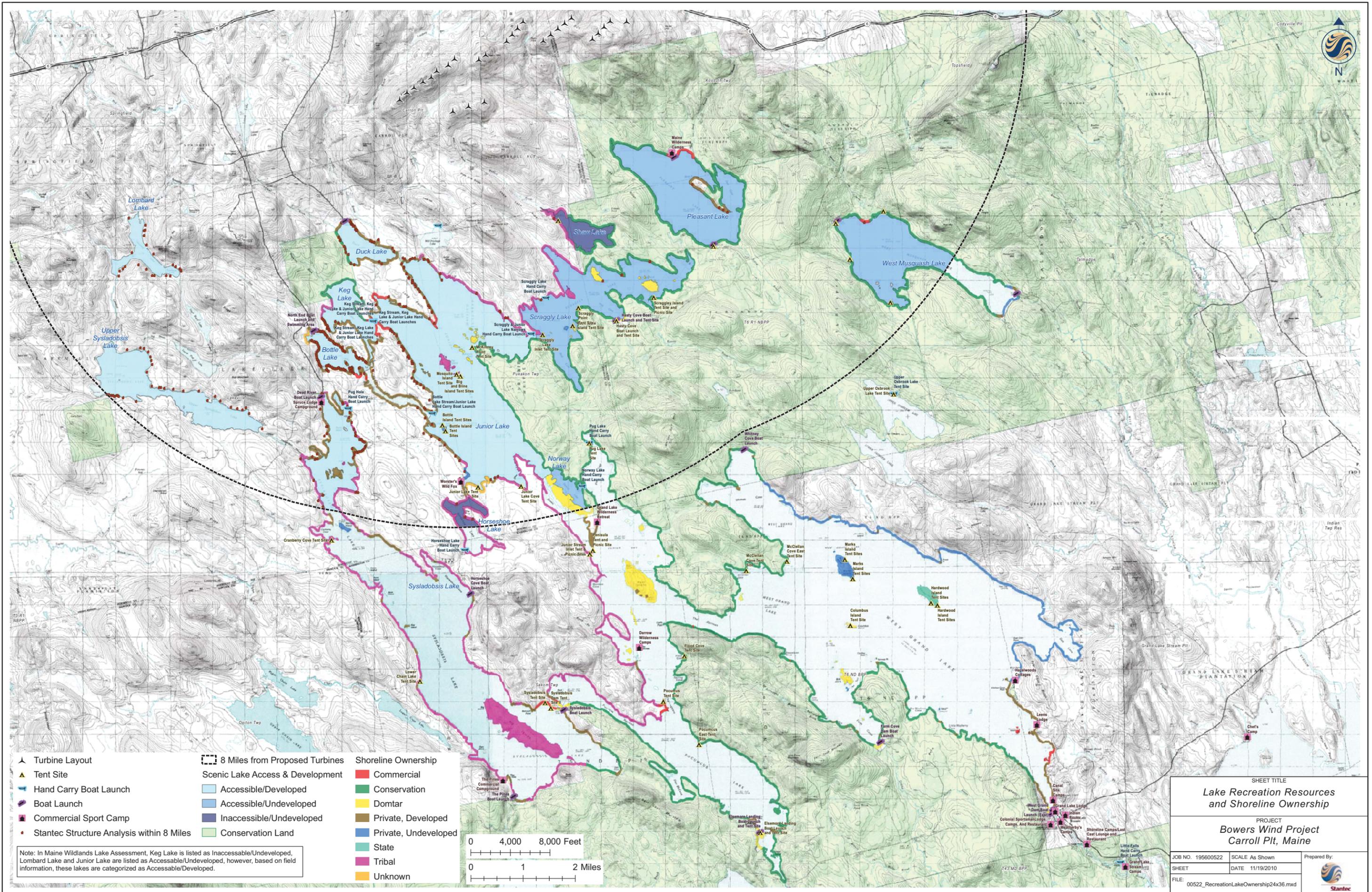


Bowers Wind Project

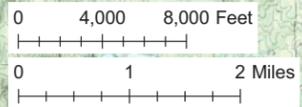
- ⚙ Wind Projects Operational or in Development (as of 01/10/2011)
- Outstanding scenic lake within 3 miles from expedited area
- Outstanding scenic lake greater than 3 miles from expedited area
- ▲ Significant scenic lake greater than 3 miles from expedited area
- ▲ Significant scenic lake within 3 miles from expedited area
- DEP Wind Expedited Area
- LURC Wind Expedited Area



Source: Maine Wildland Lakes Assessment.



▲ Turbine Layout	⬜ 8 Miles from Proposed Turbines	Shoreline Ownership
▲ Tent Site	Scenic Lake Access & Development	Commercial
Hand Carry Boat Launch	Accessible/Developed	Conservation
Boat Launch	Accessible/Undeveloped	Domtar
Commercial Sport Camp	Inaccessible/Undeveloped	Private, Developed
Stantec Structure Analysis within 8 Miles	Conservation Land	Private, Undeveloped
		State
		Tribal
		Unknown



Note: In Maine Wildlands Lake Assessment, Keg Lake is listed as Inaccessible/Undeveloped, Lombard Lake and Junior Lake are listed as Accessible/Undeveloped, however, based on field information, these lakes are categorized as Accessible/Developed.

SHEET TITLE		
Lake Recreation Resources and Shoreline Ownership		
PROJECT		
Bowers Wind Project Carroll Pit, Maine		
JOB NO. 195600522	SCALE As Shown	Prepared By:
SHEET	DATE 11/19/2010	
FILE: 00522_RecreationLakeOwnership24x36.mxd		