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GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
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AUGUSTA ME 04333-0041

CHANDLER E. WOODCOCK
COMMISSIONER

May 31, 2016

Bob Patton
Horseshoe Valley Wind

RE: Information Request - Horseshoe Valley Wind, Roxbury

Dear Bob:

Per your request, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat concerns within the vicinity of the *Horseshoe Valley Wind Project* in Roxbury.

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

Endangered, Threatened, and Special Concern Species

Bats

Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (*M. lucifugus,* State Endangered); northern long-eared bat (*M. septentrionalis,* State Endangered); and eastern small-footed bat (*M. leibii,* State Threatened). Four of the remaining bat species are listed as Special Concern: red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and tri-colored bat (*Perimyotis subflavus*). It is MDIFW's position that the only adequate protection for bats at this time is seasonal curtailment of turbines under appropriate conditions.

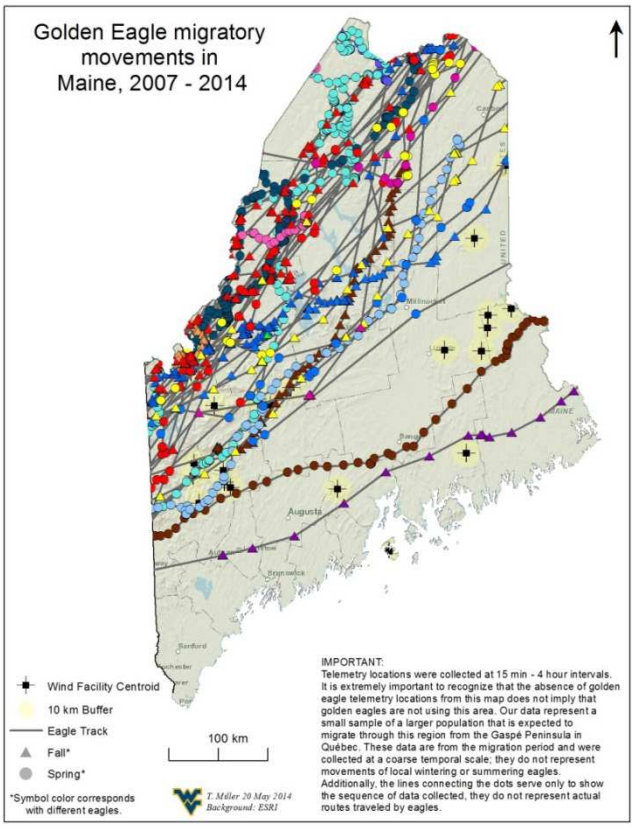
MDIFW's curtailment recommendations are based on project and resource specific considerations, research on effective procedures for avoiding and minimizing bat fatalities, recent recommendations for other similar facilities, and other relevant factors. MDIFW's recommendations take into account Agency objectives and goals for the protection of our seven vulnerable at-risk species in consideration of their particular needs and characteristics, including but not limited to migration routes and patterns, proximity to known habitats of concern (e.g. hibernacula, maternity roosts), seasonal activities, associated behaviors, population trends, etc. In recent reviews of wind power projects in Maine, MDIFW has recommended that turbines operate only at cut-in wind speeds of at least 6.0 meters per second each night, while our most recent recommendation was for turbines to operate at cut-in wind speeds of at least 6.5 meters per second. This period is from at least ½ hour before sunset to at least ½ hour after sunrise during the period April 1 – November 15 to account for the full season of bat activity

in Maine. Cut-in speeds are determined based on mean wind speeds measured at hub heights of a turbine over a 10-minute interval. MDIFW also recommends that turbines be feathered during these low wind periods to minimize risks of bat mortality. These cut-in speeds are independent of ambient air temperature.

Finally, we also recommend that you contact the U.S. Fish and Wildlife Service Maine Field Office (Wende Mahaney, 207-866-3344) for further guidance, as the northern long-eared bat is also listed as a Threatened Species under the Federal Endangered Species Act.

Golden Eagle

At present, there is no definitive evidence of golden eagle nesting activity in the Project area or elsewhere in Maine. That said, most documented golden eagle sightings have occurred in northwestern Maine although some have been documented in the Project vicinity via radio telemetry (see figure below). Golden eagle activity likely peaks during fall and spring migrations and while a few golden eagles overwinter in Maine, none are known to overwinter within the Project area. Reports of sightings during the spring/summer breeding season occur, but are rarely validated. The difficulties include the immense home range (approximately 2,000 square miles) of breeding eagles, the highly mobile nature of subadult eagles, widespread misidentification of juvenile bald eagles, and the certainty that golden eagles are a very rare bird in Maine.



1. Golden eagles (residents and visitors) have been designated as an Endangered species in Maine since 1986, pursuant to the Maine Endangered Species Act (MESA). The currently transient

nature of golden eagles in the Project area (and Maine generally) precludes a meaningful judgment of potential impacts of this Project.

2. This MDIFW review provides no assurances to the applicant from liabilities related to the Bald Eagle – Golden Eagle Protection Act and associated "Eagle Conservation Plan – Wind Energy Guidance." The U.S. Fish and Wildlife Service, Division of Migratory Bird Management has sole authority for oversight and implementation of this law; see: http://www.fws.gov/northeast/EcologicalServices/eagleact.html and http://www.fws.gov/migratorybirds/PDFs/Eagle%20Conservation%20Plan%20Guidance-Module%201.pdf

Northern bog lemming

Our Agency's traditional view of northern bog lemmings, a State Threatened Species under MESA, is that they typically occur in moist, wet meadows or boggy areas, often in conjunction with artic or alpine tundra and spruce-fir forests at elevations >2,700 feet. However, recent research in New Brunswick indicates that northern bog lemming may not only be restricted to wetlands with sphagnum mats as northern bog lemmings have been found in New Brunswick associated with riparian areas with no sphagnum present. Based on this information the species may be found in Maine at any riparian area with abundant streamside herbaceous vegetation at elevations around 1,000 feet. Therefore, based on our data from northern Maine and nearby New Brunswick there is likelihood that northern bog lemming are present within the Project area.

In addition, the US Fish and Wildlife Service announced that a formal "twelve-month" review of the status of northern bog lemming is currently underway for consideration of listing under the Federal Endangered Species Act.

MDIFW continues to recommend that surveys for northern bog lemmings are necessary to determine what impacts the Project may have on this listed species, if any. Therefore, we recommend that you work closely with MDIFW staff to design a project that minimizes the risk for potential Take and Harassment of MESA-protected species.

Roaring Brook Mayfly

Roaring Brook mayfly, a State Threatened Species, may occur in the project area. Any instream work in perennial or intermittent streams, or clearing in the vicinity of these streams, has the potential to impact this species. This species can occur in high elevation, headwater streams draining off forested (hardwood or mixed) slopes at or above 1,000 feet (including unmapped streams) within or adjacent to the currently documented range (northern Appalachian Mountain Range, stretching from Mt. Katahdin to western border with New Hampshire and Quebec).

MDIFW continues to recommend that surveys for Roaring Brook mayflies are necessary to determine what impacts the project may have on this listed species. Please contact MDIFW biologist Beth Swartz (207- 941-4476) with our Reptile, Amphibian, and Invertebrate Group for survey protocols and guidance should any instream work or work within 250 feet of streams be anticipated in the project area.

Bicknell's thrush

It is possible that Bicknell's Thrush, a Species of Special Concern, occur in the vicinity of the project area. Bicknell's thrush can be found in sub-alpine forests usually dominated by balsam fir and red spruce at elevations >2,700 feet, that typically have a history of disturbance resulting in a stunted dense understory. Because breeding individuals are known to abandon their nests as a result of even the most miniscule disturbance, please consult Regional Wildlife Biologist Bob Cordes (207-778-3324) for site-specific planning prior to implementing any clearing activities.

In addition, the US Fish and Wildlife Service announced that a formal "twelve-month" review of the status of Bicknell's thrush is currently underway for consideration of listing under the Federal Endangered Species Act.

Northern Spring Salamander

Northern spring salamanders, a Species of Special Concern, may occur in the project area. Any instream work in unmapped perennial or intermittent streams has the potential to impact this species (i.e., high elevation headwater streams) but they are also found in larger third order streams and rivers with suitable substrate (large cobble and/or gravel bars) within the documented range of primarily the western Maine mountains north and east into mountains of central Penobscot County.

MDIFW continues to recommend that surveys for northern spring salamanders are necessary to determine what impacts the project may have on this species. Please contact MDIFW biologist Beth Swartz (207- 941-4476) with our Reptile, Amphibian, and Invertebrate Group for survey protocols and guidance should any instream work or work within 250 feet of streams be anticipated in the project area.

Significant Wildlife Habitat

Significant Vernal Pools

At this time, MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs within the project area, which include Waterfowl and Wading Bird Habitats, Deer Wintering Areas, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. That said we understand that a survey for vernal pools was completed during wetland delineations and that no vernal pools were documented. Please forward the vernal pool report to our Agency as soon as it becomes.

Fisheries Habitat

Without project-specific details, it is difficult to know what impacts your project may have on the mapped streams within the search area. That being said, MDIFW makes the following general recommendations as they pertain to streams.

We recommend that a 100-foot undisturbed vegetated buffer be maintained along any streams. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining buffers along coldwater fisheries is critical to the protection of water temperatures, water quality, and

inputs of coarse woody debris necessary to support conditions required by brook trout. Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide adequate fish passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis and undersized crossings may inhibit these functions. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e. natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in not only providing habitat connectivity for fish but also for other aquatic organisms. We encourage you to contact our Region D Fisheries staff (207-778-3322) for crossing design recommendations that best maintain fish passage. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts to stream habitat. In addition, we recommend that any necessary instream work or work within 100 feet of streams occur between July 15 and October 1.

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

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

Best regards,

John Perry
Environmental Review Coordinator