

# Maine Department of Inland Fisheries and Wildlife Wildlife Division Review Comments for LURC DP-4862: Highland Wind Power Project, Highland Plantation

April 13, 2011

MDIFW has reviewed the application for development of the Highland Wind Power Project, in Highland Plantation. Use of preconstruction studies is critical to our evaluation of potential impact to sensitive wildlife resources. Avoidance of sites with high risk remains the primary focus for site-specific guidance on wind energy development. Based on pre-construction surveys, existing scientific studies, and internal review among several staff species specialists we have strong concerns about potential wildlife impacts resulting from this proposed project. Furthermore, we believe that the substantial collective risk to wildlife resources indicates that the proposed site locality is not appropriate for intensive wind power development. Specifically, the Highland Wind Power project is likely to have negative impacts on two State Endangered and Threatened species, one state Special Concern species, three Significant Wildlife Habitats, and potential direct mortality to as many as eight state Special Concern species of bats. As such, we conclude that this project, as currently proposed, will likely have undue adverse impacts to multiple high value wildlife resources. Specific impacts are as follows:

**Northern Bog Lemming:** The applicant identified six wetlands having habitat characteristics suitable for the State-listed Threatened Northern Bog Lemming. The Department has not previously reviewed a proposed Wind Power development with this much occupied and potentially occupied habitat for this species. cursory surveys to determine presence of this species indicated that three of the wetlands (W134, W068, and W011) are currently occupied by Bog Lemmings (undetermined species). In lieu of trapping (likely causing mortality to the species) or expensive genetic analysis, MDIFW and the applicant agreed to treat all wetlands with documented presence of Bog Lemmings as occupied by the Northern Bog Lemming species. Additionally, we believe that W068 is part of a wetland complex containing wetlands W072, W073 (identified as suitable habitat), W066, and W069, which likely provides habitat for dispersing lemmings and could become occupied through natural colonization processes. In these higher-elevation sites, MDIFW assumes that these wetlands support a metapopulation allowing for immigration, emigration and the dynamics of gene flow in the Northern Bog Lemming. We have significant concerns that the proposed development will have undue adverse impacts to this series of wetlands along Witham Mountain and believe that maintaining the integrity of this complex is critical to the local population of this Threatened species.

**Roaring Brook Mayfly and Spring Salamander:** The applicant conducted limited surveys to determine the presence/absence of both the Roaring Brook Mayfly (State-Endangered) and Spring Salamander (State Special Concern) within the project area. Despite this limited effort, both species were documented in the Stoney Brook watershed. In lieu of conducting additional surveys, the applicant agreed to consider all potentially suitable streams within the project area as occupied by Roaring Brook Mayfly and Spring Salamander and adhere to MDIFW's guidelines for avoiding and minimizing impact to these two rare species and their habitat. There are 44 perennial streams within the project area, of which 20 are associated with the transmission line and 24 with turbines and/or access roads. The applicant identified five of these streams, all within Stoney Brook watershed, as potentially suitable habitat. MDIFW subsequently requested and reviewed photo documentation of all perennial streams within 500 feet of a potential project impact. While the information provided was not sufficient to adequately assess all 44 streams, we believe a larger subset could meet suitable habitat standards and possibly include streams outside of the Stoney Brook watershed. MDIFW reviews projects of this scale for endangered and threatened species concerns following Site Location Law standards of no adverse environmental effect or unreasonable disturbance to habitat. To avoid take and maintain integrity of streams occupied by the Roaring Brook Mayfly and Spring Salamander, we recommend that stream crossings be avoided to the greatest extent possible and a 250-foot forested riparian buffer be maintained on both sides of the stream. Within this buffer, 60-70% forest canopy should be maintained and permanent land use conversion should be prohibited. As currently proposed, this project includes new or upgraded crossings over occupied and potentially occupied streams which will require implementation of higher crossing standards to meet MDIFW's guidelines. It also includes a widening and upgrade of an existing haul road that runs parallel and immediately adjacent to Stony Brook and its major tributary for approximately 0.4 miles. Along this section of stream, which is where both Roaring Brook Mayfly and Spring Salamander were found, the amount of forest cover within the 250-foot riparian buffer would be further reduced by

permanent conversion to impervious surface. The magnitude of project area within occupied stream habitat is of great concern and poses a high potential for undue impact to both species.

**Bats:** Results from the applicant's acoustic monitoring for bat activity within the project area show the highest recorded bat sequences for any previously proposed project in Maine. In fact, monitors located at tree height recorded 11,516 sequences during fall 2008 surveys. This is more than seven times higher (1,576 sequences) than tree height detectors at the permitted Record Hill facility in Roxbury. The detected sequences during the Highland Wind preconstruction surveys were distributed throughout the project area and not just restricted to individual detector sites. Likewise, all guilds of bats presented in Maine have been documented at this site, representing eight bat species (all State Special Concern). Furthermore, bats are included in the high numbers of observed nocturnal migrants described below. MDIFW is greatly concerned that this proposed project poses a significant long-term mortality risk to both resident and migrant bats. Confounding these results are unknown effects that white nose syndrome (WNS) will have on the viability of regional bat populations. The majority of calls recorded during the Highland studies were identified to the genus *Myotis*. In Maine, little brown bats (*Myotis lucifugus*) and northern long-eared bats (*Myotis septentrionalis*) are the most abundant species in this genus. Little brown and northern long-eared bat populations are being severely impacted by WNS, and are currently under consideration for emergency listing by the U.S. Fish and Wildlife Service under the Endangered Species Act. Therefore, MDIFW believes that the currently proposed Highland Wind development poses an undue risk to bat populations.

**Nocturnal Migrants and Diurnal Raptors:** The passage rates of nocturnal migrants and diurnal raptors through the project area are among the highest reported for projects in Maine. Furthermore, a high proportion of nocturnal migrants and diurnal raptors pass the project area at altitudes equal to or less than the maximum turbine heights, greatly increasing the risk of collision. Observations revealed that over 80% of spring diurnal raptors (260) and nearly 50% of fall diurnal raptors (301) flew within the height of the proposed turbines, and approximately 60% of spring raptors and nearly 90% of fall raptors flew along or crossed the project ridgelines during passage. Both the potential for direct mortality with turbines and displacement from preferred flight corridors are concerns. Similar concerns for nocturnal migrants exist at the proposed site. On average more than 23% of spring migrants passed through the rotor swept zone (RSZ) during the applicant's pre-construction surveys. Further, over 60% of the 21 nights surveyed showed a passage rate of at least 20% through the RSZ. On those nights, approximately 75% of the total documented nocturnal migrants (176,993) passed through the project area. These data are much higher than at the Saddleback Ridge project in nearby Carthage, which was also surveyed during the spring of 2009. An average of 16% of documented migrants passed through the RSZ at Saddleback Ridge, with only 29% (11/38) of the days surveyed having greater than 20% of passage through the RSZ. Furthermore, on those 11 days, only 15% of total documented nocturnal migrants passed (223,765) over the site. Similar results were documented at the Kibby Wind Power Expansion Project (Sisk Mountain) also conducted during spring 2009. Studies from Sisk Mountain showed that on average 18% of nocturnal migrants passed through the RSZ. On twelve of twenty days (60%) surveyed >20% of nocturnal migrants flew below RSZ, but those days accounted for less than half (48%) of total documented migrants (51,294). The proposed Highland Wind Project has some of the highest recorded passage rates through the rotor-swept zone, and is among the highest passage rates (targets/km/hour) of any project reviewed by MDIFW. We acknowledge that no correlation between preconstruction counts and mortality caused by an operational facility has been demonstrated. However, results from the applicant's radar surveys suggest that the proposed site poses a higher risk to nocturnal migrants, especially a single catastrophic mortality event, than of any project proposed in Maine to date. MDIFW's conclusion based on these combined observational data is that there is a relatively high risk of collision mortality to birds over the life of the project. Absent a commitment by the applicant for significant operational mitigations (e.g., seasonal curtailment of turbines during migration periods), there are no plausible strategies to mitigate risks to migrating birds at this time.

**Vernal Pools:** The applicant conducted vernal pool surveys within the project area and submitted datasheets to MDIFW for determination of significance. Currently, MDIFW recommends applying Natural Resources Protection Act - Significant Vernal Pool standards for evaluating impacts to vernal pools in both organized and unorganized townships. The NRPA rules only provide protection for vernal pools that are determined to be Significant Vernal Pools (SVP). While, NRPA rules are used to determine pool significance, the scale of the current project is consistent with that of a Site Location Law review, thus invoking higher performance standards for avoiding and minimizing impacts to Significant Wildlife Habitat. As such, MDIFW recommends a preferred strategy of avoidance of the SVP habitat, including the 250 ft life zone

critical terrestrial habitat zone surrounding the pool depression. If, upon detailed alternative layout analysis by the applicant, complete avoidance of impacts to SVP habitat is not reasonable then MDIFW recommends that a 100 ft buffer be applied to the pool depression and not more than 25% conversion to the area from 100-250 ft from the pool edge. The applicant identified 46 vernal pools in the project area, of which three were determined to be SVPs. The applicant proposes approximately 9% impact to the 250-ft terrestrial habitat zone associated with SVP 04AA. However, as mitigation the applicant has proposed to discontinue the use of a portion (2%) of the original forest management road to permit natural revegetation. SVP 05ED has a proposed 10% impact to the terrestrial habitat zone from construction of an access road and Turbine 36E. Similarly, SVP 08ED would have approximately 5% impact to the terrestrial life zone as a result of constructing Turbine 39E and associated access road. MDIFW contends that the applicant has not yet provided enough information demonstrating that impacts to SVPs cannot be avoided entirely.

**Conclusion:** MDIFW has provided technical assistance and consultations to this project since 2007. Despite considerable discussions and previous project modifications, an array of concerns remain unresolved and are evident in the application now before LURC. As proposed, we feel the project in Highland Plantation is not an appropriate site for this development and consequently poses a significant adverse impact for wildlife resources. Piecemeal minimization and mitigation measures for some impacts are plausible, but are not consistent with the conditions of the Comprehensive Land Use Plan (no undue adverse effect) nor Maine's Site Location Law (no adverse environmental effect), those Laws which govern permitting standards for a project of similar scope throughout the state. We conclude that the collective wildlife concerns detailed above demonstrate that this is not an appropriate locality for an intensive wind energy installation such as that currently proposed by Highland Wind Power.