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April 15, 2011

Enclosed please find comments from Maine Department Inland Fisheries and Wildlife (MDIFW) regarding the LURC Application for the Bowers Wind Project. Comments are specifically for Section 12 which addresses Wildlife. The comments enclosed address eagles, great blue herons, vernal pools, inland waterfowl/wadingbird habitats (IWWH), bats, and post-construction monitoring.

Bald Eagles:

MDIFW has reviewed the application for development of the Bowers Wind Project in Carroll Plantation and Kossuth Township. Consideration relative to federal law (Migratory Bird Treaty Act, U.S. Endangered Species Act, or Bald Eagle/Golden Eagle Protection Act) are under the jurisdiction of the U.S. Fish and Wildlife Service.

Great Blue Heron Colonies:

MDIFW requests clarification on the survey effort conducted for colonies. Were surveys only conducted along the shores of waterbodies, or were smaller wetlands and beaver flowages included as initially requested? MDIFW requested that "all wetlands with the potential of containing snags be searched as well". If there is a second season of eagle surveys to be conducted and all potential wetlands were not searched as requested, then MDIFW would request that these smaller wetlands and beaver flowages be searched during the June eagle survey effort.

Vernal Pools:

MDIFW has no additional concerns at this time regarding vernal pools.

Inland Waterfowl/Wadingbird Habitats (IWWH):

MDIFW has worked alongside the Applicant to address any issues regarding IWWHs and has no further comments to provide on this habitat.

Bats:

Recent studies (Arnett et al. 2009 & 2010, Baerwald et al. 2008) at operating wind facilities have indicated that increasing the cut-in speed (the wind speed at which the turbine is allowed to begin rotating) for operating turbines to 5.0 meters per second has significantly decreased turbine-caused fatalities for bats. Therefore, in order to minimize risk of mortality to bats MDIFW recommends that operational control measures be established. These measures should be employed from April 20th through October 15th, such that the applicant set the turbine cut-in speed to 5.0 m/s starting at



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one-half hour before sunset to one-half hour after sunrise. During this time frame when the wind speed is less than the 5.0 m/s threshold, turbine blades are not allowed to rotate thus reducing risk of fatality for bats. If at any point during this time period the wind speed increases to > 5.0 m/s the turbine blades are free to rotate.

Included below are full citations for the above references:

Arnett, E. B., M. P. Huso, M. R. Schirmacher, and J. P. Hayes. 2010. Altering turbine speed reduces bat mortality at wind-energy facilities. *Frontiers in Ecology and the Environment*. : 101101071900096 DOI: [10.1890/100103](https://doi.org/10.1890/100103)

Arnett, E. B., M. R. Schirmacher, M. P. Huso, and J. P. Hayes. 2009. Effectiveness of changing wind turbine cut-in speed to reduce bat fatalities at wind facilities. An annual report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas, USA.

Baerwald, E. F., J. Edworthy, M. Holder, and R. M. R. Barclay. 2009. A Large-scale mitigation experiment to reduce bat fatalities at wind energy facilities. *Journal of Wildlife Management* 73:1077-1081.

Post-Construction Avian and Bat Fatality Monitoring Protocol:

MDIFW will be requesting a minimum of two years of post-construction monitoring with an option for a third depending on results from the previous two years. Exhibit 19 of the Application provides a good starting point however as stated by the Applicant, the final work plan will be developed in consultation with MDIFW if and when the project is approved by LURC. The post-construction monitoring plan must be finalized and approved by MDIFW prior to the approval for the permit. Of note in the Avian and Bat Survey Reports, the proportion of targets flying below the maximum turbine height was quite high during the spring surveys.

Respectfully Submitted,

Mark A. Caron

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