

State of New Hampshire
Site Evaluation Committee
Docket No. 2008-04
Granite Reliable Power LLC

Final Memorandum of Lisa Linowes
On behalf of the Industrial Wind Action Group

April 10, 2009

I. INTRODUCTION

Granite Reliable Power, LLC has petitioned the New Hampshire Site Evaluation Committee for a Certificate of Site and Facility for the construction and operation of a 99 megawatt wind energy facility. The proposed wind facility (the Project) consists of thirty-three (33) wind turbines to be located in the unincorporated places of Millsfield, Ervings Location, Dixville and Odell, and in the town of Dummer. This post-hearing memorandum sets forth the recommendations of the Industrial Wind Action Group (Windaction or IWA) with respect to certain criteria as defined in RSA 162-H:16.

II. FINDINGS OF FACT – PROJECT DESCRIPTION

- 1) Granite Reliable Power, LLC (“GRP”) is a Delaware Limited Liability Company registered to do business in the State of New Hampshire. GRP is majority-owned by Noble Environmental Power, LLC (“NEP” or “Noble”) a Delaware Corporation based in Essex, Connecticut.
- 2) The project as proposed consists of the construction and operation of a 99 MW wind generation facility to be located on private land in a region of central Coos County in Northern New Hampshire. The turbines are proposed to be erected on four summits situated in the unincorporated places of Millsfield, Ervings Location, Dixville and Odell, and in the town of Dummer. The summits are known as Mount Kelsey, Dixville Peak, Owlhead Mountain, and Fishbrook Ridge. The elevations of the turbines range above 2700 feet.
- 3) Access to and between the 33 3.0 MW Vestas V90 turbines will be along approximately 31 miles of gravel roads. Approximately 19 miles will be built along existing logging roads and trails. Construction will involve the erection of 33 Vestas V90 turbines, new overhead and underground electric transmission lines, a switch yard, and associated facilities. All access roads will be constructed within a right-of-way (ROW) defined as the width needed to install the road plus 10 feet on either side. The turbines are

approximately 256 feet in height to the hub, or nacelle, with each turbine incorporating three rotor blades with a rotor diameter of 295 feet and a rotor-swept area of 1.6 acres. Blade rotation speeds at the tip will be over 150 mph.

- 4) Each turbine will be affixed to a concrete foundation. In addition to the construction activities associated with the concrete foundations, each turbine site will require the construction of a “lay-down” area to unload, store, and assembly the towers and other equipment associated with the turbines. This area as designated on the site plans as being 200-feet in diameter.
- 5) Documentation on any blasting studies to determine the amount of blasting needed for the roads, turbine pads, or related construction, or the impact of any blasting on the area was not made available with the application.
- 6) The applicant proposes cutting and clearing approximately 300 acres of land for construction including permanent clearing of land for the onsite construction of the roads and turbine strings.
- 7) The Project, if built, will fill 13.5 acres of wetlands. A compensatory mitigation plan is required involving some wetland restoration, creation, and upland buffer protection.
- 8) Construction and operation of the proposed project will require numerous truck trips, including the use of large transport vehicles or tractor trailers. The applicant has not provided any documentation on the transport route to the site. It is not apparent that any traffic study was submitted to the Committee detailing anticipated counts of traffic, time-of-day traffic patterns, and emergency alternate routes in the event of any unforeseen road obstructions, or possible negative effects on daily or seasonal traffic in the area. Additionally, no information was provided regarding road repair plans to be implemented

by GRP should the State, County, or Local roads degrade due to Project construction vehicles.

- 9) To comply with the US Department of Transportation FAA regulations, the turbine layout will call for seventeen (17) of the 33 turbines to be lit with synchronized pulsating lights. Although the Applicant's supplemental testimony (Petitioner exhibit 2.2) includes FAA *Determination of Hazard to Air Navigation* Reports for each of the 33 turbines, the hazard reviews were conducted based on turbine heights of 389 feet. The Project has not received FAA clearance for turbine heights of approximately 410-feet.
- 10) The Applicant has asserted an average yearly performance of 35% of nameplate capacity, or 34.65 MW of energy, but actual wind data was not analyzed by a third party to confirm this assertion and what the effective capacity for the facility would be. The applicant will be participating in the New England Forward Capacity Market. The Applicant represented under cross-examination that the ISO-NE has assigned the Project an initial Installed Capacity Requirement of 29.9 megawatts.
- 11) The applicant provided a general statement that the project would offset greenhouse gas emissions and fossil fuel use but performed no analysis in the context of a wind project operating within the New England power pool to substantiate gross figures of emission offsets included with the application. Using the marginal emission rates developed by ISO-NE in July, 2007, the Project is estimated to offset over 332,000,000 pounds of carbon dioxide emissions annually.

III. RSA 162-H:16 FINDINGS

RSA 162-H:16 IV provides four criteria, each of which must be met, before the Committee can issue a certificate for the Project. These criteria from the statute are as follows:

- a. Applicant has adequate financial, technical, and managerial capability to assure construction and operation of the facility in continuing compliance with the terms and conditions of the certificate.
- b. Will not unduly interfere with the orderly development of the region with due consideration having been given to the views of municipal and regional planning commissions and municipal governing bodies.
- c. Will not have an unreasonable adverse effect on aesthetics, historic sites, air and water quality, the natural environment, and public health and safety.
- d. Operation is consistent with the state energy policy established in RSA 378:37.

This post-hearing memorandum examines the criteria based on the record and respectfully offers IWA's findings and recommendations to the Committee. With respect to other criteria not addressed herein, IWA does not have any recommended findings.

Findings – Impacts to High-Elevation Habitat

The Applicant has the burden to demonstrate that the Project will not have an unreasonable adverse effect on the natural environmental. With regard to impacts on high-elevation habitat, the Industrial Wind Action Group asserts the Applicant has failed to meet this burden. This finding is supported by the below facts in the record.

- 12) Several elements of the proposed utility-scale wind energy facility present potential significant impacts on wildlife habitats and the wildlife that rely upon them. These include (a) the activity and disturbance associated with project construction; (b) the linear nature and extensive scale of the project; (c) the degree of clearing; and (d) the potential and unknown level of human activity associated with operation and maintenance of the facility.

- 13) High elevation lands are long recognized by the New Hampshire Department of Fish and Game as a critical component of the landscape and provide unique habitat features for a variety of wildlife including state and federally listed species. The forest cover on these lands is characterized by a high percentage of spruce and fir. (NHF&G prefile testimony, 12/08, pg 6 ln 2-4)
- 14) The New Hampshire Wildlife Action Plan defines the project site as High Elevation Spruce Fir forest with associated species including the Spruce Grouse, Bay-Breasted Warbler, Bicknell's Thrush, American Marten, Canadian Lynx, and the Northern Bog Lemming. The State's Action Plan asserts "High elevation spruce-fir forest has a very limited distribution in New Hampshire, covering approximately 4% of the state's land area. This forest type supports 66 vertebrate species in the state, including 2 amphibians, 2 reptiles, 38 birds, and 24 mammals. Threatened and endangered wildlife using this forest type include Canadian lynx and American marten. Blackpoll warblers and Bicknell's thrush breed exclusively in high elevation spruce-fir habitats." (Wildlife Action Plan, pg B-84)
- 15) At elevations of 2700 feet and higher, spruce and fir forest dominate the species composition along the ridgelines and upper slopes of these higher mountains. (NHF&G prefile testimony, 12/08, pg 6 ln 12-13)
- 16) High elevation ridgelines also serve as important migratory routes for songbirds, raptors, and bats. (Wildlife Action Plan, pg B-84)
- 17) Soils at the high elevations are "usually very acidic, resulting in reduced nutrient availability to plants." (Wildlife Action Plan, pg B-84) Shallow soils, steep slopes, and high precipitation "create a high risk of erosion when vegetation is removed. These conditions qualify high elevation spruce-fir forests as sensitive habitat, and served as motivation for the State of New Hampshire to engage industrial forest landowners of

high-elevation spruce-fir forests in special management agreements that limited harvests levels. (NH Audubon Letter, 2/27/09)

- 18) “The project bisects the remaining parcels of high elevation habitat, and as a result, severely compromises the integrity and value of all the high elevation management areas in the project.” (NHF&G prefile testimony, 12/08, pg 12-13 ln 24, 1-2) (NHF&G Progress Report, Nov 13, 2008)
- 19) The high elevation forests on Dixville Peak and Mount Kelsey support several species of conservation concern in the State and region including the American Marten (state threatened), the Bicknell’s Thrush (state special concern) and the Three-toed Woodpecker (state threatened). Turbine placement at elevations above 2700 feet will result in direct habitat loss as well as additional habitat degradation for these species. (NH Audubon Letter, 2/27/09) (NHF&G Progress Report, 11/13/08)
- 20) High-elevation spruce-fir forests of northeastern North America provide the only breeding habitat available to the Bicknell’s Thrush, which has the smallest breeding range of any North American bird. (NH Audubon Letter, 2/27/09)
- 21) The Project site is “prime Bicknell’s Thrush habitat” (Transcript 3/19 pg 15 ln 8-11)
- 22) Forty-five percent of the potential habitat for Bicknell’s Thrush in the world is found in New Hampshire. NH Fish and Game asserted a “global responsibility” for this species. (NHF&G prefile testimony, 12/08, pg 17 ln 20-24) Reduction and fragmentation of the limited habitat for Bicknell’s thrush “may have long term negative impacts on local and regional populations of this species”. (GRP Applicant, Appendix 23)
- 23) GRP testified that edges introduced into the area due to the turbine access roads could draw Bicknell’s Thrush to nesting sites and that these edges “...may be an enhancement of that habitat”. (Transcript 3/11 pg 48 ln 10-12) This point is directly contradicted by

Lloyd-Evans who testified that the fragmentation invites potential predators for many of these interior forest species and adds “This is a problem, and not just Bicknell's thrush, but a suite of other species, many of which are declining in the State of New Hampshire and in New England generally.” He adds that the Bicknell's Thrush is a forest interior bird that has not been exposed to, thus is ill-prepared to protect itself from, predators that prey on species at the forest edges.

- 24) Fish and Game asserts that this level of development into the Bicknell’s Thrush habitat “is not compatible with the long- term health and viability of this species” and that “given the extremely limited global distribution of this species, we cannot afford to take any chances with this extremely rare bird species”. (NHF&G prefile testimony, 12/08, pg 17 ln 15-19)
- 25) Trevor Lloyd-Evans and NH Audubon both concur that while the Bicknell’s Thrush spends most of its time under the forest canopy, the male’s flight display during breeding involves flying at elevations up to 70 meters above the ground and large circles that are greater than 100 meters.” (Transcript 3/19 pg 52 ln 16-24) (NH Audubon Letter, 2/27/09) If this species remains in the Project area post-construction, their display flight will place the birds within the rotor-swept area of the turbines.
- 26) Fish and Game contends that the direct and indirect impacts on high-elevation habitat areas expands well beyond the Project footprint to 3747 acres and includes the “four high elevation areas slated for development”. (NHF&G prefile testimony, 12/08, pg 13 ln 2-5)
- 27) The NHF&G has no experience with a project of this magnitude. There is considerable uncertainty as to how much of the forested habitat area adjacent to the roads and turbine pads will be degraded. (Transcript 3/13 pg 11 ln 9)
- 28) The impacts of the Project’s road construction along the high ridgelines will extend far beyond the specific footprint of the clearing. The effect of turbine noise on wildlife is

unknown including the potential for noise to interfere with prey-predator relationships and the vocal communications of birds during the breeding season. (NH Audubon Letter, 2/27/09).

- 29) There are significant unknowns regarding the impacts of a project of this magnitude on high-elevation species and their habitat. It is not understood the extent of any “zone of avoidance” created by the towers, roads, and related infrastructure where wildlife will not enter or find suitable to habituate to. (Transcript 3/13 pg 171 ln 16-22)

Findings – Project Construction vs. Timber Clear Cuts

- 30) All timber cuts must be permitted by the County. New Hampshire Fish and Game biologist and forester, Will Staats, is consulted on all permit applications. While no language is in the County zoning ordinance requiring State involvement on timber cut applications this has been the process in place for nearly 20 years. (Transcript 3/13 pg 199 , ln 11-15)
- 31) The County Planning board relies on NHF&G’s Will Staats’ expertise “to meet with the forester or land manager who is planning the timber harvest. It is the State’s experience that commercial timber companies seeking a permit to cut are responsive to the State’s comments and concerns about “natural features and wildlife” within the harvest area. (Transcript 3/13 pg 121 , ln 12-16)
- 32) A permit was granted on December 28, 2007 to harvest 223 acres of land on the side slopes of Mount Kelsey. The maximum elevation was capped at 3100-feet in addition to other conditions. NHF&G’s Will Staats, who worked with the forester managing the harvest, was emphatic under cross-examination that not all of the 223 acres would be cut. “...what you have to understand is that doesn’t mean that all 223 acres were going to be cut. In fact, that’s not the case... That’s been talked about here, but that is not the case”. (Transcript 3/17 pg 65, ln 14-19)

33) No timber cuts above 2700-feet have been permitted by the County without involving NHF&G personnel in the decision process. (Transcript 3/13 pg 200 , ln 1-4)

34) NHF&G cites the September 2008 document prepared by the Society for the Protection of N.H. Forests (“North Country Timber Harvest Trends Study”) to show that harvests have been occurring at elevations above 2700-feet particularly during the period prior to the Memorandum of Understanding being adopted (1996). (NHF&G prefile testimony, 12/08, pg 11 ln 19)(Transcript 3/13 pg 195 , ln 6-19)

35) The Forest Society document makes a clear distinction between “Silviculture Clearcuts” and “Liquidation Cutting” where silviculture clearcuts are defined as a legitimate and useful forest management tool utilized by commercial timber companies. The document includes this passage:

Outside of the world of forestry, the term “clearcutting” often carries a negative connotation. Like other large-scale, intensive forestry activities, the visible change that occurs with clearcutting operations may be disturbing to aesthetic sensibilities; this is understandable. However, as a silvicultural practice, clearcutting is a time-tested method of regeneration for even-aged stands of timber by releasing seedlings of desirable tree species. The goal is to create growing space to be filled promptly by a new tree crop. In New Hampshire’s North Country, small-scale clearcutting and its cousins—shelterwood cuts, strip cuts, group selection harvests, and patch cuts—are among the most basic tools available to the forest manager, especially on sites where production of spruce-fir and paper birch-aspen is favorable. These methods are often used not only for regenerating forests, but also to improve the diversity of habitat for certain wildlife.

- 36) The Bayroot LLC and GMO properties are commercial timber lands that conduct managed timber cuts employing silviculture clearcutting. Both Bayroot and GMO are certified under the Sustainable Forestry Initiative (SFI) and adhere to the 13 objectives of the initiative including commitments to a) the conservation of forest resources, b) protective measures to ensure water quality in streams, lakes, and other water bodies, c) management of the quality and distribution of wildlife habitats and d) contribution to the conservation of biological diversity.
- 37) The County and NHF&G are involved in the planning of all cuts on these properties. The County, with the State's input, has the authority to deny permits to cut. Bayroot and GMO risk losing their SFI certification if an independent audit shows the companies have not adhered to the SFI objectives. Loss of this certification has a direct impact on the marketability of their wood.
- 38) No roads currently go to the top of Kelsey. With the exception of tree cutting at the top of Kelsey to place the two met towers, trees have not been cut on the ridgeline in decades. (Transcript 3/13 pg 150 ln 1)
- 39) Logging roads are built incrementally as needed. Typical logging roads at the Project site now are one lane wide, dirt, gravel-surfaced road and generally aren't wide enough to pass somebody. (Transcript 3/13 pg 148 ln 14) The tree canopy encroaches on the timber roads and eventually needs to be cut back. (Transcript 3/13 pg 149 ln 16)
- 40) Road building on the scale represented in photographs of the roads at Kibby Mountain (IWA-X-23a and 23b) is cost prohibitive for commercial logging operations and would not be undertaken to cut a small area.
- 41) Logging operations do not cause the permanent alteration of the earth as building the Project would. "Logging is not the same as a permanent development. ...these forests

have been logged multiple ...times for over the last 100 years. And they do grow back. And that's different than putting a permanent road up there and structures that we're not entirely sure what the long range implications of those are." (Transcript 3/13 pg 196 ln 20)

42) "[T]imber harvesting, in and of itself, may or may not be an extremely harmful thing at those high elevations, depending how you do it. Even before the Memorandum of Understanding was implemented wildlife species survived. (Transcript 3/13 pg 197 ln 9)

43) If the Project were not built, but the site was logged for 25 years instead (the life of the project) it is doubtful that the number of acres of wetlands impacted by the logging operation will equal the number of acres lost (13.5 acres) by the project being constructed. (Transcript 3/17 pg 153 ln 8)

Findings – The High-Elevation Mitigation Agreement

44) NHF&G and AMC, intervenors to the proceedings, negotiated a settlement agreement with GRP to address concerns raised by NHF&G and AMC pertaining to the detrimental impacts of the Project on habitat above 2700 feet elevation.

45) The High-Elevation Mitigation Plan ("Plan") was presented to the other parties including Counsel for the Public, Peter Roth, as well as NH Audubon and The Nature Conservancy. Only AMC and NHF&G supported the Plan.

46) Had this Plan not been negotiated and agreed to by NHF&G and AMC, both parties would have maintained that the Project, as proposed, would produce an unreasonable adverse effect on the natural environment.

47) The Plan has several *significant* flaws that we find to be untenable. We believe these flaws, as detailed below, to be fatal and strongly encourage the Committee disregard the Plan and not adopt it as condition(s) of Certification.

- a. NHF&G and AMC have agreed to the “Retained Land” as defined in Section A of the Plan which allows an area around each turbine that is 18 acres in size (500-foot radius). This is an unprecedented amount of land dedicated to each turbine with no justification for the size. We would expect Dr. Publicover, who characterized himself on cross as “reasonably knowledgeable” about the siting of wind projects, to know that modern turbine installations on ridgelines require no more than 1.6 acres (150-foot radius) for each turbine. GRP has stated in its application that the turbine pads will require a circular area of only 200-feet in diameter.
- b. The Retained Land represents an area for the road that is 150 feet wide (i.e. 75 feet on each side of the road’s centerline). The access roads between the turbines have a travel width of 34 feet. No justification is presented as to why the Retained Land spans an additional 58-feet on both sides of the road. Given the sensitive habitat on Mount Kelsey, we cannot understand why NHF&G and AMC did not insist on GRP agreeing to minimum road widths in this area rather than the substantial land area.
- c. Provision A.5 of the Plan states “only those trees necessary for project construction will be cut.” During cross-examination, GRP was unable to state how much of the Retained Land area would be logged. If GRP deems that all of the land needs to be cut in order to construct the project all of the trees will be cut and NHF&G will have no leverage to change the outcome. (Transcript 3/13 pg 49 ln 6)
- d. It is not clear from the Plan whether the landowner would still need to obtain a permit from the County to cut within the Retained Land and/or whether NHF&G has forfeited its opportunity to advise the County based on the agreement. If the

agreement supplants NHF&G's involvement in the County decision, it will not be invited to influence the extent of cutting. There plan provides for no protections in the area of the Project that was deemed by all parties to be the highest value habitat.

- e. Provision A.8 allows for a one-time payment of \$200,000 to conduct studies on the impact of the Project's development on wildlife species of concern. No information has been proffered by NHF&G on whether the Department scoped out the level of work, the number of years of studies to be conducted or whether the amount of money is even close to covering the costs.
- f. It is not clear when the \$200,000 would be made available to the Department or whether there would be any time for the Department to conduct pre-construction studies to get baseline data from which to compare post-construction results. NHF&G has offered that the money would assist the Department in becoming more informed on the impacts of wind facilities at high-elevation areas. Absent good baseline data, it is not clear what the department will do with any data it collects post-construction or how valuable that data will be.
- g. According to Provision A.8 of the Plan, NHF&G shirks any responsibility for post-construction monitoring for bird/bat mortality as part of the Plan. This omission is remarkable in light of the November 13 2008 progress report submitted to the Committee by NHF&G which states: "*In general, the applicant contends that data (i.e. acoustic bat surveys, radar surveys for birds and bats) collected for this project is consistent with other study sites in the Northeast. However, several uncertainties with methodologies and interpretation of results remain... The US Fish and Wildlife Service recommended additional surveys and provided comments on some limitations of survey methodologies.*" It is apparent

that NHF&G has opted to ignore its jurisdictional responsibility to certain wildlife, namely migratory birds and bats.

- h. Provision A.5 of the Plan asserts that “After project construction the roadbed *shall* be re-vegetated so that the roadbed is limited to 12 feet in width”. According to Petitioner Exhibit 21-3 GRP responded to questions regarding keeping the turbine pads (200-foot diameter) and access road (34-foot wide) cleared of vegetation during the warranty period. GRP has agreed to this provision with no proof in the record that the provision can be honored at least during the first 2-3 years of Project operation.
- i. The Plan is utterly devoid of information defining what the vegetation will be on the roads should growth be permitted. During the hearings there was some discussion on planting of native trees but there was no indication from GRP, NHF&G, and AMC that any of the parties spent time considering what the planting would be or the costs. It was apparent under cross-examination that planting of grass, as proffered by GRP, would be unacceptable. (Transcript 3/13 pg 192 ln 10)
- j. The Plan makes no reference to an Invasive Species Mitigation Plan, a clear omission on the part of NHF&G and AMC.
- k. Dr. Publicover stated on cross-examination that AMC and NHF&G made no effort to evaluate the amount of habitat impacted by the Project as pertains to direct and indirect effects nor did they quantify the amount of mitigation that would be appropriate based on any acreage ratios. Absent even a basic tradeoff analysis we have to assume AMC and NHF&G opted for the mitigation lands based on it “feeling” right with no further consideration. (Transcript 3/13 pg 244 ln 14)

- l. Dr. Publicover confirmed that he had not visited the mitigation lands (Long and Muise) to evaluate the quality of the sites. (Transcript 3/13 pg 245 ln 12)
- m. AMC and NHF&G have continually asserted that turbine development on Mount Kelsey would be acceptable provided the mitigation Plan enforced the permanent protection of Long and Muise from timber cutting above 2700 feet elevation.
- n. The aerial photograph included in Appendix A of this memorandum shows, in fact, that Long Mountain has undergone recent timber cutting at elevations above 2700-feet and the cutting occurred right up to the edge of State Land. The marred condition of Long Mountain as compared to the expansive uncut lands on Mount Kelsey (Appendix C) leaves us questioning how AMC and NHF&G could support the Plan. We have to ask if AMC or NHF&G even knew of the cutting on Long Mountain. Had they known about the cutting, why wasn't it revealed to the Committee and the parties. If they had no knowledge of the cutting, we have to question whether either AMC or NHF&G did their due diligence before negotiating away the pristine and high-value habitat on Mount Kelsey.
- o. Appendix B of this memorandum shows the outline of mitigation land on Muise Mountain. This sixty-acre parcel is minute within a virtual sea of uncut lands leaving us to question why AMC and NHF&G did not negotiate for additional lands given the significant loss of critical habitat on Mount Kelsey and Owlhead. It is our opinion that the land on Muise is of nominal value given its small size relative to the significant land mass around it.
- p. There is no explanation in the Plan for why Exhibit B2 only includes the coordinates for the west site of the mitigation land around Kelsey. This Exhibit is incomplete and largely meaningless.

- q. Finally, the ridgelines of Long, Muise, and Whitcomb Mountains are all located on State lands. AMC and NHF&G were unable to secure the preservation of land on Whitcomb but they took steps to prevent wind development on this peak through Provision A.11 of the Plan. Provision A.11 asserts GRP's agreement to withhold development of wind turbines or associated infrastructure on Whitcomb Mountain. GRP also agrees to prohibit any other party from utilizing its electric collection lines for wind energy facilities on Whitcomb. Whitcomb's summit of 3,350 feet, is located on State land. The land targeted by Provision A.11 spans from the State property line at 2900-foot elevation down to the 2,700-foot. Given the North-South direction of these ridgelines, with the prevailing winds typically blowing in a west-to-east direction, we have doubts about the feasibility of siting turbines on the downward, eastern slope of Whitcomb. Without additional information from GRP regarding the viability of turbines sited on the eastern slope of Whitcomb, it is impossible to determine whether this provision contributes to the justification for impacts on Kelsey.
- r. There is no provision in the Plan that allows for penalties for non-compliance. Should the Committee disallow this agreement as part of any condition of certification, which we pray it does, AMC and NHF&G will have little leverage to enforce the provisions of the agreement.
- s. We strongly encourage AMC and NHF&G to withdraw their participation in the Plan given its gross deficiencies.

Findings – Impacts to Migratory Birds and Bats

48) There is insufficient data in the record to base any raptor populations in the Project area. The raptor survey conducted by GRP was conducted on too few days. The sample size

was too small to establish a population size. Further, since different species of raptors migrate at different times in the fall season -- some early September, others in late November and December -- there is insufficient information in the record to determine what types of raptors breed and fly through the Project area and to assess risk. (Transcript 3/19 pg 49 ln 6)

- 49) GRP asserts in prefile testimony that “recent mortality information found during post-construction surveys at developed wind projects has shown that mortality is generally not numerically significant, depending on the location”. GRP cites Arnett *et al.* 2007. (Gravel Pelletier prefile testimony, July 2008, pg 11, ln 16-19) GRP’s selective quoting from the report is apparent. What GRP failed to include in its testimony was this statement:

"there is a dearth of information upon which to base decisions regarding siting of wind energy facilities, responses by wildlife, and possible mitigation strategies. With few exceptions, most work conducted to date at terrestrial facilities has been relatively short-term (e.g., one year or in some cases only one field season). Longer-term studies are required to elucidate patterns and develop predictive models for estimating fatalities and evaluating possible habitat fragmentation or other disturbance effects."

- 50) Absent adequate pre-construction studies to determine the extent to which migratory and breeding birds use or fly over the site make it impossible to determine the impacts on these species should the Project get built.

- 51) In its March 12, 2009 letter to the Army Corps, US FWS details the deficiencies in the nocturnal radar study conducted by GRP. Absent the data requested of GRP, it will be difficult, if not impossible to determine informed adaptive actions that could be implemented should the operating turbines cause significant mortality.

52) Both Gravel and Lyons of GRP oppose the idea of forming a Technical Advisory Committee to oversee post-construction (and possible additional pre-construction) studies of the Project site. (Transcript 3/13 pg 67 ln 19, pg 69 ln 2) Absent an advisory committee, there is no clear understanding of how this Project will be monitored for negative impacts other than \$200,000 allocated to NHF&G which is not intended to investigate risk to birds or bats. Further, it would be a conflict of interest, thus strongly ill-advised to permit GRP, through its agent Stantec, to define the post-construction studies, implement the protocols, and report the findings.

53) GRP's Gravel and Pelletier complained that the US FWS guidelines for siting of wind energy facilities are out of date and that the pre-construction studies recommended by the US FWS for assessing risk to migrating species were unnecessary. Yet resolutions and guidelines released by national and state entities as recent as summer 2008 and January 2009 recommend more vigorous pre-construction studies than those conducted by the GRP. These include:

- a. Hawk Migration Association of North American July 2008 policy regarding siting and monitoring of wind energy facilities;
- b. American Society of Mammalogists June 2008;
- c. New York State Guidelines for conducting bird and bat studies at commercial wind energy projects" Jan 2009.

It should be noted that the list of references cited in the Gravel/Pelletier prefile testimony is dominated by Stantec's (formerly Woodlot Alternatives) own studies. Stantec informing itself is not good science and subject to clear bias.

Findings – Wetland Creation and Mitigation

54) Without wetland creation, the Project, if built, will result in a net loss of 13.5 acres of wetlands. (Transcript 3/17 pg 99 ln 14)

55) The Project will fill 13.5 acres of wetlands including eight vernal pools. Four of the impacts will exceed 10,000 square feet. The filling of 8 vernal pools will reduce the overall wildlife productivity of the area and adversely affect the food chain of the area. Several of the pools are located in high elevation areas. Eighteen vernal pools are located within 100 feet of the proposed roadway with 18 additional pools located within 400 feet of the roads. (US EPA Letter, 3/9/09)

56) A 620 acre parcel has been set aside as mitigation for the wetland loss.

57) No pre-construction studies have been completed to date that attempt to inventory the wetland habitats that will be lost due to the Project's construction. Dr. Sanford asserts in his prefile testimony that detailed inventories should be made of "each wetland impact area in order to assess loss of habitat characteristics". He further states that "such information will be essential in designing wetland creation and restoration proposals". (Sanford prefile testimony, 12/08, pg 14 ln 6)

Findings – Alternatives Analysis

The Applicant has failed to conduct an alternatives analysis necessary for the Committee to consider any available alternatives in accordance with RSA 162-H:16 IV. Any alternatives included with the application or later submitted to the Committee are utterly devoid of analysis and appear to have been slapped together to address a checklist item but with little understanding or appreciation for the purpose such an alternatives analysis.

- 58) GRP lists three alternatives in its application submitted to the Committee separate from the Project as proposed. These include a) a smaller project size (less than 99 MW), b) a project scenario using more turbines at less megawatts each, and c) a no build scenario.
- 59) In a March 23, 2009 letter to the Committee, GRP provided documentation submitted to the U.S. Army Corp showing several off-site alternatives considered. This letter was responding to a March 10 request by the Committee and was covered under the protective order.
(Petitioner 46)
- 60) The additional off-site alternatives in the March 23 letter were provided to the Army Corps no earlier than February 26, 2009, 11 days before the SEC hearings were to commence. This information lacks any detail other than gross GIS maps and vague qualifiers on why each alternative was not further considered such as “increased likelihood of wetland and stream impacts”.
- 61) US FWS comments on the off-site alternatives analysis with this statement: “The coarse level of analysis of the alternatives appears to be limited to a map/GIS layer review of available information.” (US Department of Interior letter, 3/12/09). EPA characterizes the off-site alternatives analysis as “incomplete” (EPA letter, 3/9/09) and adds that “Among other deficiencies, it is unclear how the applicant chose the five sites; that is, there is no explanation of what factors were considered in selecting the sites. Importantly, it is unclear if and how the presence of and potential for adverse impacts to aquatic resources were considered”.
- 62) Dr. Mariani asserts “the applicant has not demonstrated that the final design has less environmental impact than a scaled down project or a project that utilizes turbines at locations that are less environmentally sensitive”. (Mariani prefile testimony Dec 2008). Under cross-examination he further states “it [the alternatives analysis] may have been

thorough, the information just wasn't presented in the application that I could find".

(Transcript 3/17 pg 111 ln 22)

- 63) DES' Wetlands Rules requires that an applicant for a wetlands permit must demonstrate, among other things, that the alternative proposed "is the one with the least impact to wetlands". DES "shall not grant a permit if (1) There is a practicable alternative that would have a less adverse impact on the area and environments under the department's jurisdiction;" (Env-Wt 302.04(a)(2) and Env-Wt 302.04(d)(1))
- 64) US FWS found that the Applicant has failed to provide "essential information to demonstrate that avoidance of wetlands and waters was accomplished at either the site selection stage or during on-site planning". They add that "all of the site selection and on-site planning activities up to and including layout of the roads, turbine strings and turbine pads were accomplished prior to wetland delineation work being initiated and completed" calling into question how.(US Department of Interior letter, 3/12/09).
- 65) The method employed by the Applicant is contrary to standard practice which requires wetlands and wildlife habitat areas be identified first before a development project is defined. (Transcript 3/17 pg 113 ln 1) If DES permits this application based on its draft findings and conditions DES will be in violation of State wetlands rules.

Findings – Financial, Technical, and Managerial capability

- 66) During 2007 and 2008, Noble Environmental constructed five separate wind energy facilities in New York located in three different counties. These were the Bliss, Clinton, Ellenburg, Altona, and Chateaugay facilities. The Altona project went on line on December 23, 2008 (Transcript 3/9 pg 61 ln 6-24)
- 67) During the period from September 28 to November 24, the three operating facilities in northern New York (Clinton, Ellenburg, and Chateaugay) had to be taken offline. Mr.

Mandli attributed the 2-month shutdown to work needed to be done on the Ryan substation. (Transcript 3/9 pg 62 ln 9)

68) Two turbines at the Altona facility experienced failures on March 6, 2009 within two months of the turbines going online. One of the turbines collapsed. (Transcript 3/9 pg 71 ln 12)

69) Since fall 2008, there have been numerous news reports, quoting Noble executives, about the company's financial difficulties. The Noble project slated for Belmont, New York has been put on hold indefinitely. Another project in Michigan was sold.

70) Noble contracted with a firm known as Kay R Electric on or around the middle of 2007 (possibly earlier). Kay R hired subcontractors on behalf of Noble Environmental. Noble paid Kay R as work was completed and Kay R was expected to pay the subcontractors. (Transcript 4/2 pg 108 ln 2)

71) Noble Environmental failed to perform a credit check and ensure the necessary bonding on Kay-R Electric before it entered into a contractual arrangement with the company. (Transcript 4/2 pg 27 ln 2)

72) Subcontractor liens started getting filed in December 2007 and continued through to March 2009. Noble continued working with Kay R despite the liens being filed against Noble. Noble attributes approximately \$2 million of these liens to Kay R's failure to pay contractors. Noble states it paid Kay R regularly and that it was Kay R who failed to meet its monetary obligations. Noble produced no proof to the Committee or the parties that it met its financial obligation with Kay R. (Transcript 4/2 pg 109-110)

73) As soon as media stories came out in March 2009, more than a year after the first liens were filed and still unpaid, Noble took steps to "bond off" the liens and negotiate settlement payments with its other contractors.

- 74) Noble Environmental operated in a reckless manner and showed signs of being inexperienced. The company was engaged in building five wind facilities in two years in the State of New York spreading itself thin and beyond the ability of the company to manage itself. In addition it operated its offices in Lancaster, NH, Minnesota and Texas. It closed several others including the office in Vermont and Malone, New York.
- 75) Noble has stated it has not built a ridgeline wind energy facility and it has never installed Vestas V90 turbines 3.0 MW. Its work prior involved GE turbines.
- 76) Given the financial difficulties of the company and mismanagement of its contractors which led to \$10 million in liens filed against the company (albeit, Mr. Lowe chose to conveniently attribute the Kay R failure to two employees) there is no indication the company has the financial, managerial, or technical expertise to take on a project of this scale and complexity.

Findings – Decommissioning

- 77) It is necessary that money begin accumulating with a decommission fund prior to any construction commencing at the site including clearing for the roads. The fund should accumulate at a sufficient rate to ensure there is ample money available to decommission the project at the point when it is fully operational. At no time should any public entity within the State be responsible for raising money to dismantle the site.
- 78) Control and management of the fund should be stipulated by the Committee via certificate conditions. This responsibility should not be left to the County Commissioners.
- 79) In order to ensure sufficient funds, the Committee shall hire an independent firm to verify and adjust all figures proposed by GRP to ensure no underfunding. Cost of an outside firm should be borne by GRP.

80) Decommissioning costs should include necessary funds to remove the turbines down to at least the 4-foot subsurface, all overhead wiring, the road infrastructure, substation and other elements of the project site. If the State, in collaboration with the County, decides some portion of the roads should remain intact at the time of decommissioning, a decision can be made then and any unspent money in the fund can be returned to the GRP or its successors.

81) Decommission funding will represent the gross amount to dismantle the turbines as well as the costs to break the turbine components into 3-4 foot lengths for easy hauling. No deductions for salvage or scrape value should be permitted. The costs of hauling will be included in the fund amount as well as any money needed to dispose of components that cannot be reused, recycled, or otherwise sold as salvage.

The people of NH have an expectation that the members of this Committee are the experts and that careful consideration will go into weighing the facts presented in this Docket. The inconsistencies and holes in this application cannot be ignored. Without solid information to base your decision the Committee should not find a way to approve this Project. The State's standards cannot be lowered to Noble's standards.

We respectfully ask you to deny this certificate based on these findings.

Date at Lyman, New Hampshire, this 10 day of April, 2009.

INDUSTRIAL WIND ACTION GROUP, INC.

By,

Lisa Linowes
286 Parker Hill Road
Lyman, NH 03535
603-838-6588

A handwritten signature in black ink, appearing to read 'Lisa Linowes', written over a horizontal line.

Appendix A: Long Mountain Mitigation Land

Close-up image of the land on Long Mountain that will be preserved under the High-Elevation Mitigation Plan as agreed to between NHF&G, AMC, and GRP. The 200-acre parcel appears to have been recently logging through the middle of the proposed mitigation area at elevations above 2700-feet.

Appendix B: Muise Mountain Mitigation Land

The 2700 ft elevation "island" encompassing Muise Mountain is about 2.5 square miles in size (2.5 x 640 acres = ~1,500 acres). The 60-acre mitigation area represents less than 4% of this "high elevation island". Note there is some historic logging in the western part of this "island", but for the most part it is relatively undisturbed.

Appendix B: Mount Kelsey Project Area and Mitigation

The very large continuous land area above 2700 feet elevation on Mount Kelsey is remarkably intact. This land mass is slated for turbine development. In return for their support, AMC and NHF&G have accepted the harvested land on Long Mountain and a small parcel on Muise Mountain in addition to land bisected by the turbine string on Mount Kelsey.

NRCS NAIP digital orthophoto
August 24, 2008

2,700 feet
elevation
contour line

Long
Mountain
Mitigation Area
(~220 acres)

Coos County,
NH

4

5

6

7

8

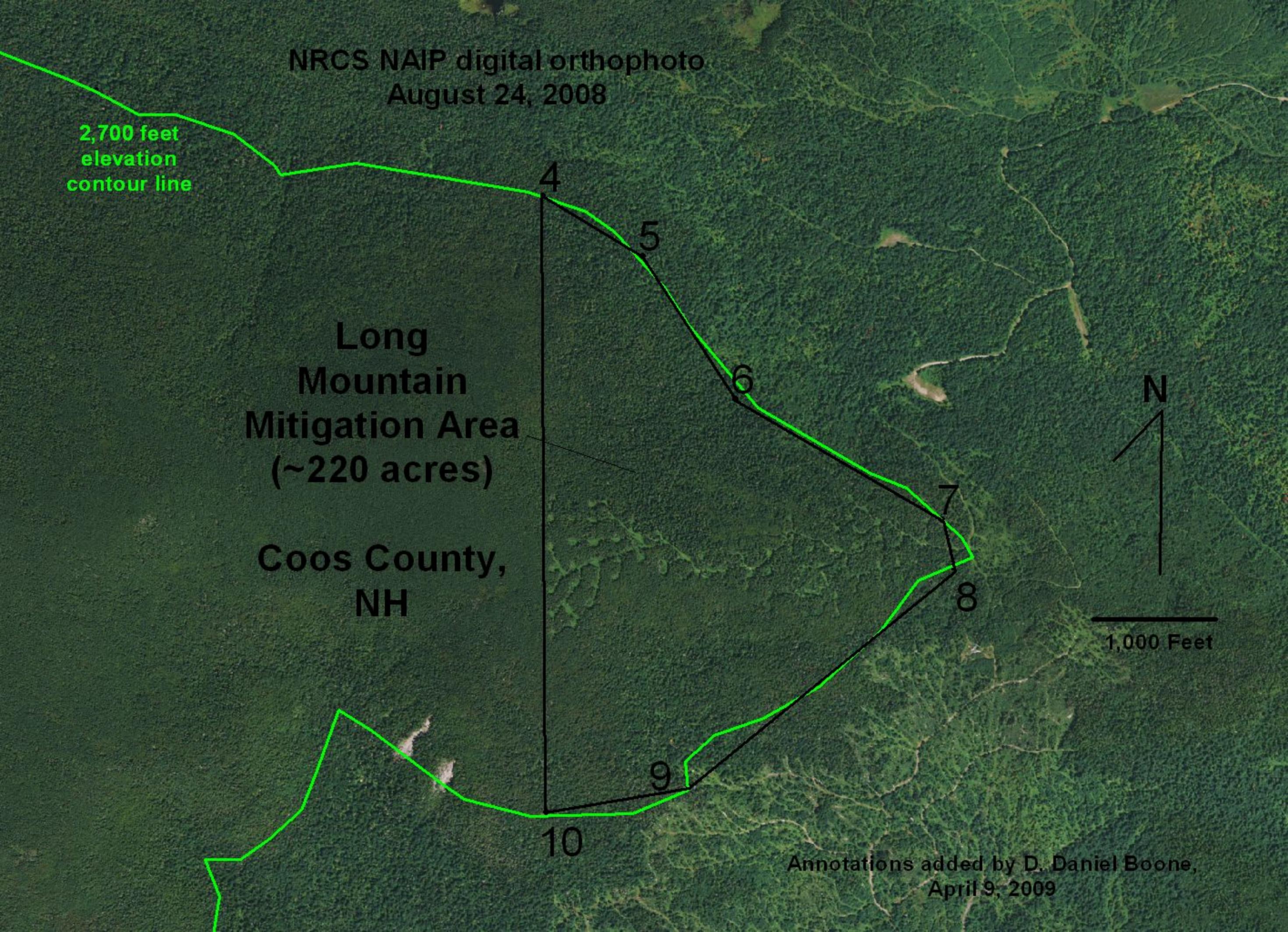
9

10

N

1,000 Feet

Annotations added by D. Daniel Boone,
April 9, 2009



NRCS NAIP digital orthophoto
August 24, 2008

2,700 feet
elevation
contour line

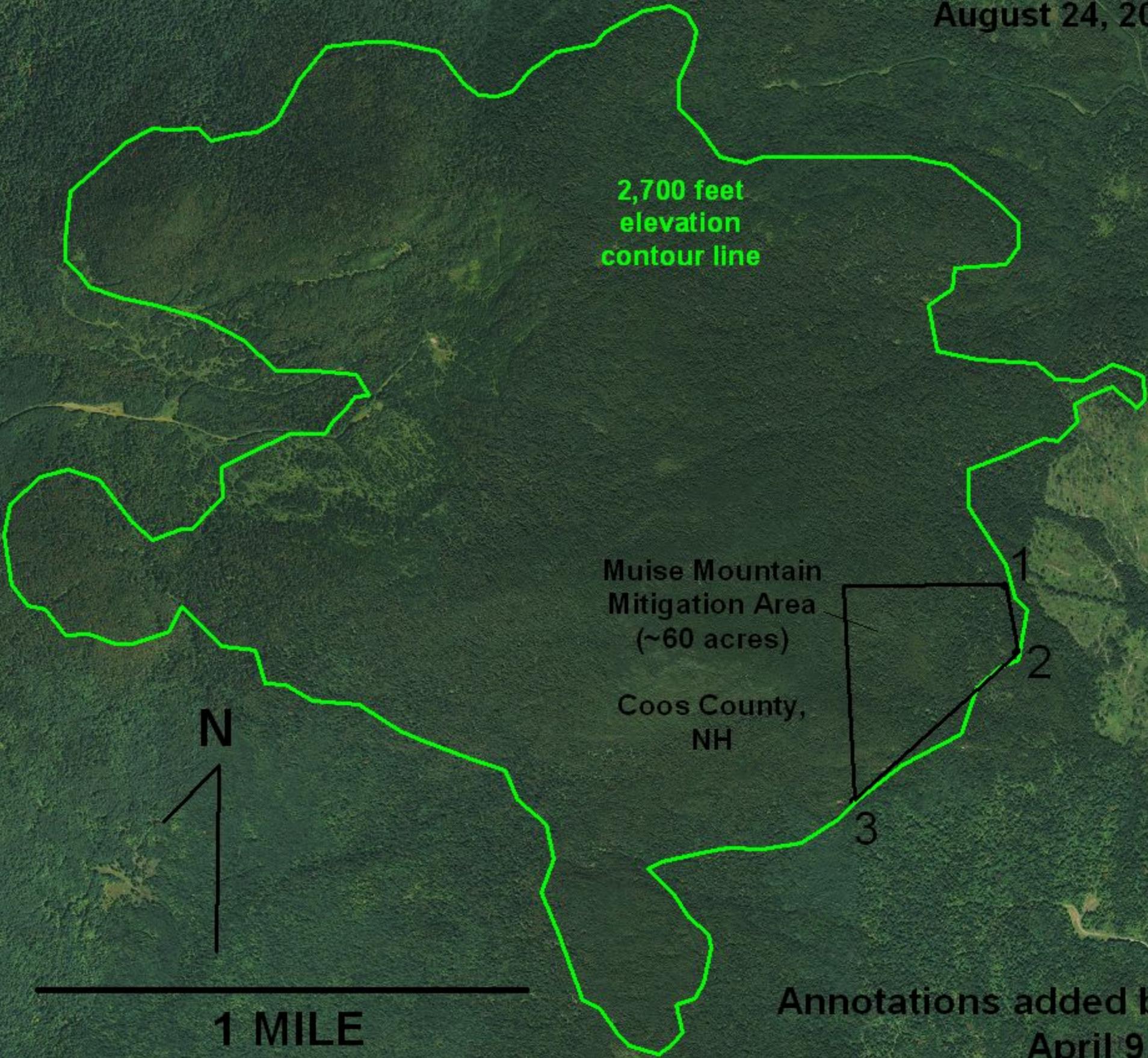
Muise Mountain
Mitigation Area
(~60 acres)

Coos County,
NH

N

1 MILE

Annotations added by D. Daniel Boone,
April 9, 2009



**Mount Kelsey - Owlhead
Mitigation Area
(~500 acres)**

**Coos County,
NH**

**2,700 feet
elevation
contour line**

**Mount Kelsey - Owlhead
High Elevation "Island"
(~2.6 square miles in size)**

**Wind Turbine Sites
(500-foot radius),
part of
Granite Reliable Power's
proposed 99MW windplant
in Coos County, NH**

11

12

13

14

15

17

16

N

1 MILE

**NRCS NAIP digital orthophoto mosaic
August 23 & 24, 2008**

**Annotations added by D. Daniel Boone,
April 9, 2009**

