

consultations with other experts in related fields and used knowledge gained through reading 8 other wind applications submitted to LURC or the DEP.

Blue Sky East LLC has proposed 19, 1.8 MW turbines along the ridges of Bull Hill, Heifer Hill and Beech Knoll. Also planned are 7.6 miles of new roads and upgrades to existing jeep tracks for project access. Along the ridges and down to a substation is an underground 34.5 kV power line running for a total of 8.2 miles. The project will clear over 95 acres of forest and at a cost of 4.13 million dollars for each turbine placed.

Based upon a review of the application using criteria and requirements listed in the Land Use District and Standards, the Commissioners should reject DP 4886, the development of the Bull Hill project. First Wind has not met the burden of proof relative to LURC, other state agencies and the public. Insufficient credible evidence has been submitted to convince responsible parties that no unreasonable impacts will occur to the environment, wildlife and the area's quality of place.

Narraguagus River and Atlantic Salmon

Narraguagus Lake is only two miles from Beech Knoll, the proposed location of towers one through four. This lake supports a population of wild brook trout and is popular with anglers. It has been recommended by the Department of Inland Fisheries and Wildlife that Narraguagus Lake be closed for ice fishing due to the fragile status of this fishery.¹ In the Maine Wildlands Lake Assessment of 1987 Narraguagus Lake is described as having a "Significant" rating under the categories Scenic, Fish (Native), Shore Character and Cultural Resources.

The Narraguagus River, the lake's outlet, also collects its waters from several tributaries that rise on the flanks of Heifer Hill, proposed location of turbines number 5 through 7, and Bull Hill, the proposed home of turbines 10 through 19. The Narraguagus River is one of eight Maine rivers within the Gulf of Maine Distinct Population Segment (GOM DPS) hosting endangered Atlantic Salmon (*Salmo salar*).

¹ NARRAGUAGUS_lake.pdf. maine.gov/.../lakesurvey_maps/hancock/narraguagus_lake.pdf

In the Endangered Species Act, Section 7, (2) under Interagency Cooperation we are informed that any action authorized or permitted must not jeopardize the continued existence of any endangered or threatened species or result in the destruction of or adverse modification [emphasis added] of habitat of such species which is determined to be critical.² This proposed project is part of the watershed that includes critical habitat for Atlantic Salmon.

It is the Army Corps of Engineers rule that when a project results in work affecting tributaries that are either historically or currently accessible for Salmon migration, this project shall NOT be authorized under be a Category 1 on the General Permit and must be screened for potential impacts.³ Streams or tributaries that drain from the project area and could potentially be impacted by sediment run-off are Mud, Smith, Mahanon, Clark Meadow Brook and Colson Branch. All feed into the West Branch of the Narraguagus River. In addition, Narraguagus Lake receives run-off from unnamed tributaries below Beech Knoll's proposed turbines.

The Narraguagus River is a nutrient poor, somewhat phosphorus rich water way adjacent to marshes, wetlands and bogs. This is a 'fragile' river already, impacted by acid rain and potentially susceptible to further degradation if sources of algae supporting nutrients are opened up through development. Volunteer water sampling shows Narraguagus River having a mean of 13.7 ug/L or part per billion (ppb) of total phosphorus while the EPA's recommendation is to be no higher than 10 ug/L or ppb.⁴

Estimates of cut and fill alterations for the project footprint total close to a half a million cubic yards of material. Projected clearing of 95 acres with numerous on-site gravel pits, laydown areas and 4.8 miles of new roads could have a impact to the many wetlands, streams and marshes surrounding the project. The changes in hydrology resulting from ditching and run off from the impervious roads and pads could be substantial. I am concerned with the applicant proposing that any waste concrete be

² www.nmfs.noaa.gov/pr/pdfs/laws/esa.pdf

³ Department of the Army General Permit State of Maine, page 8-40.

⁴ MDEP, Spatial and Temporal Patterns in Water Chemistry of the Narraguagus River: A summary of Available Data from the Maine DEP Salmon River Program, November 2008.

incorporated into the sub-base of the proposed roadway and turbine pads.⁵ What water soluble compounds are present in concrete slurry? How much of this material will be disposed of in this manner? The Atlantic Salmon's critical habitat has already been impacted by Kibby and other in-progress projects and cumulative effect concerns should be raised in light of the numerous other proposed grid scale wind energy projects waiting in the wings.

Vernal Pools and Wetlands

The applicant's Vernal pool and wetland assessment is incomplete and therefore suspect. In their report summaries we find gaps in critical data. In reading the wetland and vernal pool field assessment forms I am concerned about the timing of the mapping, its completeness and the number of significant wetlands and vernal pools in the project footprint. Exhibits one through four in the Narrative section of the application show numerous vernal pools and wetlands adjacent to proposed road and tower pads. With no geotechnical analysis at the present time, how do we know the roads, conduit ditching and turbine pads will not impact these natural resources, both during construction and over the long haul?

Experience at other projects in the recent past shows that this analysis is necessary during the design phase to avoid serious mis-steps in the construction process.

The applicant determined there are 21 Wetlands of Special Significance (P-WL1) having Significant Wildlife Habitat. Also shown on the project maps are 7 "Significant Vernal Pools" in the project area.

The applicant used the Maine Association of Wetland Scientists (MAWS): Vernal Pool Technical Committee (VPTC), 2010 Interim Vernal Pool Survey Protocol for its survey methods and procedures to map these vernal pools. The protocol is designed to provide an efficient and consistent method for conducting vernal pool surveys in Maine.

Maine's Department of Environmental Protection "*defines Significant Vernal pools as naturally occurring, temporary or semi-permanent pools that provide habitat for specific abundance of vernal*

⁵ Narrative.pdf, 10.2 Solid Waste

*pool amphibian indicator species, fairy shrimp, or certain state-listed rare, threatened, or special concern species".*⁶

Based on the MAWS significant vernal pool habitat identification criteria and abundance, any one or any combination of the following species abundance levels documented in any given year, determine the significance of a vernal pool habitat. Included can be documentation of a state-listed rare, threatened or endangered species that require a vernal pool to complete a critical portion of their life cycle. Included but not limited to, are Blanding's turtle, spotted turtle, ringed bog haunter dragonfly and any of the following:

Species	Abundance Criteria
Fairy shrimp	Presence in any life stage.
Blue spotted salamanders	Presence of 10 or more egg masses.
Spotted salamanders	Presence of 20 or more egg masses.
Wood frogs	Presence of 40 or more egg masses.

The timing of the identification period is by geographic region. Below is a chart showing times of spring for optimum egg survey.

Geographic Region	Wood Frogs	Spotted & Blue Spotted Salamanders
Northern Maine	May 5 – May 20	May 15 – June 5
Central Maine ⁷	April 25 – May 10	May 5 - May 25
Southern Maine	April 10 – April	April 20 – May 10

⁶ The Maine Association of Wetland Scientists(MAWS), Vernal Pool Technical Committee (VPTC) April 2010, pg 4-44.

⁷Timing of identification period for project.

Fairy Shrimp Assessment should be observed from late May to early June in Maine. Any observance of Fairy Shrimp and the pool is designated Significant.

Rare Species Assessment protocol suggested that while conducting the vernal pool assessment observers should scan land adjacent to the pool (out to 25 feet) for rare species.⁸

It was noted on the assessment sheet that all vernal pools were not fully assessed for Fairy Shrimp or rare species.⁹ The applicant states a second field visit one to two weeks after the first visit was to naturally occurring vernal pools only.¹⁰ Let it be noted that the first visits were too early in the season, and subsequent ones did not include man made potential vernal pools, covered by Army Corps of Engineers guidelines.

In Exhibit 12A, section 3.3 of the application Vernal Pool results show some field work done within the recommended time frame and some not, either earlier than April 25 (frogs) and earlier than May 5 (salamanders). Some of the vernal pools qualified as being Significant, regardless of the timing of identification but others that did not qualify may or could have if the identification visits were within the correct time periods. Below are some examples:

1. Vernal Pool # 01BE was observed on April 21, 2010, May 4, 2010. Wooded Frogs (need 40) had 19 and zero, for the Spotted Salamander (needs 20) had 15 and 12.
2. Vernal Pool # 07BE observed April 22, 2010 and May 4, 2010. Wooded Frog count was 14, 0. and Spotted Salamander was 14, 14.
3. Vernal Poll # 10BE, observed April 22, 2010 and May 4, 2010. Count on the Wooded Frog 2, 0. Salamander 18, 15.
4. Vernal Pool #12BE observed April 22, 2010 and May 4, 2010. Counts on Spotted Salamander was 5 and 39. No Wooded Frogs observed.
5. Vernal Pool # 16CF was observed April 15, 2010 and May 3, 2010. Counts on Spotted Salamander 4 and 4, and the Wooded Frog 7 and zero.

⁸ MAWS, 2010. page 13-44.

⁹ Exhibit 12A, pg. 57 through 90.

¹⁰ Exhibit 12, page 3 of 98.

The entire area is riddled with marshes, wet lands, bogs and intermittent streams. We question how the applicant can decide which specific wet spots are Significant Vernal Pools since they have not done complete, correctly performed, time sensitive studies on each and every one within the project's foot print.

In Exhibit 12A, Figure # 1 through #5 show roads and ditching impacting many Significant Vernal Pools. They are 02BE, 03BE, 08MG, 09MG, 11MG, 12 MG, 34CF and 35CF. The 250 foot required buffer zone shown in the application's road design is questionable. While this early design meets the minimum setbacks on paper, we have little faith that actual construction will do so. Sister agencies have submitted 12 pages of comments and concerns over road construction and erosion control measures.

The 250 feet of critical terrestrial habitat is only a portion of the habitat used by adult wood frogs, salamanders, and other rare or threatened species. Any area within 750 feet of a pool is valuable for protecting viable amphibian populations.¹¹

Again, we point out that to date there is no geo-technical analysis to insure placement of turbine pads and roads such that they will not directly or indirectly impact vernal pools and wetlands.¹²

The purpose of the Wetland Protection Subdistrict *"is to conserve coastal and freshwater wetlands in essentially the natural state because of their indispensable biologic, hydrologic and environmental functions for which they perform"*.¹³ This means the natural habitat and its surroundings.

Under Chapter 335, Significant Wildlife Habitat, section C. Habitat management standards for significant vernal pool habitat we find :

To the greatest extent practicable, the following management practices must be followed within significant vernal pool habitat.

¹¹ Chapter 335, Significant Wildlife Habitat, section 9, page 7.

¹² Narrative.pdf page 24 from application.

¹³ Land Use Regulation Commission Chapter 10 Page 155.

1. No disturbance within the vernal pool depression;
2. Maintain a minimum of 75% of the critical terrestrial habitat as unfragmented forest with at least a partly-closed canopy of overstory trees to provide shade, deep litter and woody debris.
3. Maintain or restore forest corridors connecting wetlands and significant vernal pools;
4. Minimize forest floor disturbance; and
5. Maintain native understory vegetation and downed woody debris.

There are fourteen streams, three defined as perennial, and one hundred and eleven wetland resources surveyed in the project footprint. This area is surrounded by marshes, bogs and wetlands. It is a major source of food and refuse for many birds species.

Bald Eagles, Peregrine Falcon, Northern Harrier, Osprey and the Great Blue Heron

The applicant has gone to great lengths to show there will be no unreasonable impact to migratory birds and the raptors that frequent the project area. The applicant admits to observing at least 12 species of raptors in the project area during migration season. They also note the potential to breed in the project area.¹⁴ In Exhibit 13, attached, map submitted by the U.S. Department of the Interior shows a number of historic nest sites in the area with the closest nest only two miles away, next to Molasses Pond.¹⁵

I have personally read 8 applications for wind development projects in Maine and each survey conclusion says the same thing about passerines and birds of prey; they are just passing through, or were spotted just outside the area of concern. These birds have to live somewhere during the spring, summer and fall months. Isn't it incredible that not a single example was seen within a project's footprint? See Exhibit 1 attachment concerning eagles nesting in Hancock County.

¹⁴ Exhibit 13A. page 7 of 225.

¹⁵ Exhibit 13_engineering. Map of Eagle nests. page 31 of 225.

Before the Bald Eagle was delisted in Maine as an endangered species in 2009, a Bald Eagle Management Goals and Objectives plan for the years 2004 to 2019 was adopted by the MDIFW. The goal is to have at least 600 nesting pairs by 2019. In 2006, Maine's 414 nesting pairs represented 74% of all eagles residing in New England & New York. Maine is ranked 8th in abundance of breeding eagles among the lower 48 states.¹⁶ LURC needs to review incremental and cumulative impacts to Bald Eagle historic nesting sites as well as hunting and foraging grounds in and around the project area. We as a state have a responsibility to insure the Bald Eagle thrives in its natural habitat. Figure 1 shows monitoring data for 2007, note Hancock counties numbers.¹⁷

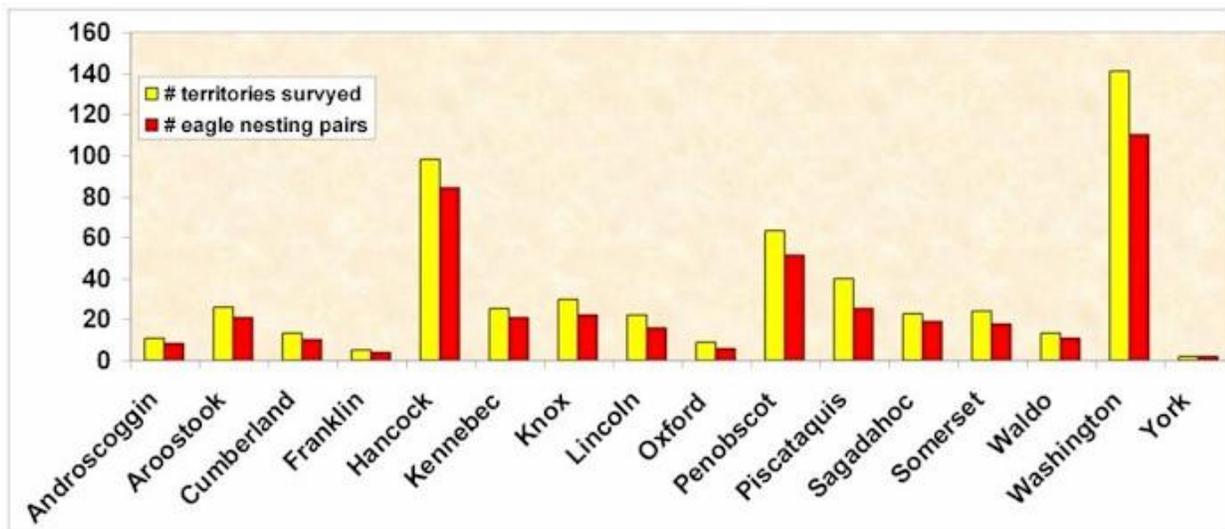


Figure 1

Risk to eagles from wind development facilitated the U.S. Fish and Wildlife Services to create the "*Draft Eagle Conservation Plan Guidance*" of January 2011 (DECPG). It was written to translate the primary law protecting eagles, The Bald and Golden Eagle Protection Act, into identifiable goals. Two permit rules created in 2009 allowed "*limited take of bald and golden eagles when the take is associated with, but not the purpose of an otherwise lawful activity, and cannot practicably be avoided*".¹⁸ It also requires that any authorized take must be unavoidable [emphasis added] after

¹⁶ maine.gov/.../bald_eagles/eagle_populationupdate.htm page 2 of 16.

¹⁷ maine.gov/.../bald_eagles/eagle_populationupdate.htm

¹⁸ Draft Eagle Conservation Plan Guidance, U.S. Fish and Wildlife Service. January 2011.

implementing advanced conservation practices and the take is compatible with the preservation of each species.... with the goal of increasing or stable breeding populations. The department is developing regional take thresholds for each species.¹⁹ Industrial wind facilities that could possibly take (kill) an eagle due to the placement of wind turbines must still receive incidental take authorizations under the Endangered Species Act.

It is a known fact that energy development can affect the eagles in numerous ways. First and foremost is direct mortality through collision with turbine blades and electrocution by power lines necessary for wind development. Second are disturbances of the manmade kind. Construction, maintenance of complex, road building and fragmentation of habitat can increase the stress to eagles and can result in a loss of productivity at nearby nests or in areas frequented by many birds.²⁰ Osprey and Great Blue Herons both nest in close proximity to this proposed project. With each industrial wind facility built, the greater the chance of collision or the birds just vacating the area altogether.

Cumulative Impacts to the Bald Eagle from wind power development in Maine should be considered a key factor in permitting this project. Kibby, Sisk, Saddleback, Spruce Mountain and Roxbury all have migrating or nesting eagles and have been or will be directly impacted by the projects. The Peregrine Falcon and the Northern Harrier or Marsh Hawk have been sighted in and around industrial wind facilities across Maine. This application is no different with respect to possible impacts to said birds.

The DECPG recommends cumulative effect analysis be "consistent" with the principles outlined in the Council on Environmental Quality handbook. Consider cumulative effects to eagles and the ecosystems they depend on by reviewing the effects :

- effects occur away from the source (changes or consequences can take place some distance from the project)
- fragmentation or change in landscape patterns (cuts for roads and diversion of waterways)

¹⁹ Draft Eagle Conservation Plan Guidance, U.S. Fish and Wildlife Service. January 2011.

²⁰ Draft Eagle Conservation Plan Guidance, U.S. Fish and Wildlife Service. January 2011.

- effects arising from multiple sources or pathways (multiple industrial wind facilities)
- and indirect secondary effect

In addition to my concerns for raptors in and around this project, six Species of Special Concern were observed in the project area. It is important to note these same species are being impacted by other projects, including Spruce and Saddleback mountains. The species included are the American Redstart, the Black and White Warbler, Chestnut Warbler and White Throated Sparrow. Now more than ever, cumulative impacts to species of concern, or those listed as threatened, should be included in considerations of development projects across Maine. Rollins Project is +/- 44 miles away, the Bower Mountain proposal is 48 miles, and Stetson II is 58 miles away.

Road Construction

The Bull Hill industrial wind project consist of 19 turbines and 7.6 miles of new or upgraded roads on several low hills near the coast. The project is surrounded by wetlands, marshes, bogs and is located right at the headwaters of several streams. The area is already home to an active timber harvesting industry. There will be 8.2 miles of trenches dug for the underground 34.kV lines leading out from each turbine, along the ridges and down to the substation. While open, the trenches will be between three and six feet wide and four feet deep.

State agencies have commented on the design plan and erosion control measures for this project. I read 12 pages of concerns or suggestions submitted by involved agencies and I strongly suggest LURC commissioners read over their concerns and issues with this project. I won't go over the same issues twice but I do want to stress some major concerns with the applicant's road design and turbine placements for this project.

The 'tool box method' of design will not work for this area of perched water tables, wetlands and streams. The soils under and around the proposed turbine pads and roads are very wet, with the water table anywhere from surface level to only three feet down. At present there are no proper foundation drainage or erosion control methods built into the plan to insure no sediment laden water will find its way into the many wetlands and waterways adjacent to the roads and turbine pads. The applicant states

there will be no impact to wetlands and vernal pools. Experience with other similar projects leads one to question the accuracy of that statement. It is necessary to address potential secondary impacts of draining water from the "perched" aquifers that will be penetrated or breached by the cuts called for at many turns and a few of the turbine pads themselves. Soils in the area have a perched water table, or mini aquifer, which is formed above an impermeable clay or rock layer, separating it from its main groundwater table below. The layer can be deep or shallow, local or span out extensively. A perched water table can weaken the soil, making it unsuitable for certain development or at least require extensive engineering controls for drainage and maintenance during heavy storms or spring melt. Building pads and roads that can support turbines and 90 to 100 ton trucks is difficult. Unstable soils can compound the problem, and because of the perched water table and these mini aquifers the drainage required to achieve soil stability will be significant. All of the necessary engineering, the cuts, fills, drainage works, and the pads and roads themselves will certainly result in significant changes to these wetlands.

The applicant informs us that turbine locations were determined by the wind data, topography and spacing requirements and then micro-sited to avoid direct impacts to natural resources. With no geotechnical analysis done their siting of the turbines is no more than a good guess, with respect to subsurface conditions. It is my concern, also found in state agency commentaries, that all changes in the surface layout, grading, stormwater systems and placement of erosion control measures meet LURC's chapter 10 standards. Significant alterations or changes in the areas hydrology resulting from the placement of turbine pads, underground 34.5 kV line or roads could significantly impact local waterways. It is my belief the applicant is trying to get a permit, in part by claiming no impacts to wetlands or vernal pools in the absence of geotechnical data, and only after LURC has issued said permit will these studies be finished and available for study. At that point, when direct impacts are clearly foreseen, the applicant will "mitigate" them through financial instruments by way of the Army Corps of Engineers permitting process rather than through the Commission's own process.

The Bull Hill project is located on rolling mountains surrounded by wetlands, streams and bogs. In this region many, if not most of the hydrological connections are visible. So is the fact that much of the proposed project will have clear and disturbing consequences to this interconnected system of water

ways and pools. Turbine # Four's foundation pad cuts into the mountain 20 to 30 feet and is very close to wetlands down slope.²¹ The cleared area for turbines 16, 18,19, 3, and 5 are in very close proximity to wetlands, with very likely direct impacts from run-off after clearing and grubbing on saturated and unstable soils. There will also be noticeable cuts and fills for leveling the areas destined for turbine placement. Each of these constitute either a cutting into the soil or the creation of dikes, both of which result in significant changes to local water movement patterns. These patterns, the hydrology of the area, are what feed into the Narraguagus Lake and River and will almost certainly be greatly altered.

A bridge is proposed for the road as it passed tower sixteen. From the construction blueprints it looks to be 50 feet wide by 60 feet or so long and will provide passage for trucks weighing 100 tons. We, and the Commissioners need to see the design of this bridge to insure no significant adverse impact to this wetland.

Under "Roads and Water Crossing" in CLUP-Chapter 10 it states :

Any bridge or water crossing culvert in such road shall satisfy one of the following requirements:

1. it shall be designed to provide an opening sufficient in size and structure to accommodate 25 year frequency water flows
2. it shall be designed to provide an opening with a cross-sectional area at 3 1/2 times the cross-sectional area of the stream channel; or
3. it shall be dismantled and removed in fashion so as to reasonably avoid sedimentation of the water body.

From the construction blue prints, the applicant is proposing 24 fifteen inch culverts, 4 twenty four inch culverts and 6 or more Rock Sandwiches to reconnect the hydrology sundered by road cuts and fills. The dewatering of turbines construction locations with perched water aquifers produces enormous amounts of water that also needs to be redirected and reconnected downslope. Dave Rocque suggests more rock sandwiches, rock burritos and buffers upland of the culverts as well as the accumulation of groundwater and run-off down slope. Will this divert and stabilize groundwater and run-off enough not to impact the surrounding wetland, bogs, marshes, streams and vernal pools?

²¹ See page C100 of the construction blue prints.

In the Soil Narrative Report the applicant suggests road cross drainage, frequent cross culverts and extra provisions for slope stabilization and erosion control measures during spring melt and prolong rain events. Poorly drained hydric soils may have permitting implications if identified as wetland areas.²²

Soil Suitability standards set forth in the LURC Chapter 10 tell us "*determination of soils with low development potential shall not be developed unless the Commission determines that adequate corrective measures will be used to overcome those limitations that resulted in a low or very low rating*".²³

Comments from the Division of Environmental Assessments notes the area of proposed construction is composed of granite, and the risk of acid generating rock is minimal. However, a plan should be put in place for the construction team to recognize such rocks and act accordingly.

Previous comments on the Kibby proposal made by David Rocque in regards to Acid rock testing and Mitigation raised concerns over inadequate tools to deal with acid rock if encountered. The Isolation Method covers acid producing rock with an impermeable material, and diverts all water from the exposed area until a permanent solution can be implemented. It protects groundwater and adjacent areas and appears to be the best temporary method. As for permanent measures, clay cover is extremely challenging to stabilize. Blending is only possible if the water table is ten feet below the area you are treating. Encapsulation involves capping the exposed rock with shotcrete, a slurry of very wet concrete. It is sprayed under pressure onto cliffs for stabilization and used to seal off mine tailings in dirt basements of homes in Utah and Montana. It is used as a cap to isolated soils contaminated with heavy metals in mine tailings. The use of shotcrete would be very difficult to use in a area that has such a high water table. Shotcrete needs to cure and encapsulate the exposed rock.

The applicant needs to address the possibility of encountering acid producing rock and have a mitigation plan ready for that possibility.

²² Exhibit 16A_classL_Survey.pdf. page 8 of 52.

²³ LURC, Chapter 10, page 173.

Laydown areas need to be restored to their original contours, even if re-vegetated within a year. Inter-agencies suggested that a description is needed from the applicant on the protection of natural area and the removal of the laydown area fill as part of the Erosion and Sedimentation section of the application.²⁴ It should be noted there are 6 laydown areas, 200 by 400 on the project, over eleven acres that will need to be restored to their natural contours. Most of these areas are forested and will require significant re-grooming to match their existing contours. The applicant proposed on-site gravel pits approaching five acres in area. Will these areas be restored to original contours with the hope of supporting forest cover again?

The applicant claims 25.44 acres of developed land and 24.24 acres of impervious surface for the entire project foot print. This means that on less than 50 acres they will build 3 met towers and 19 turbines with their associated roads. The "Crane Paths" will initially be 95 feet wide, later to be reduced to 36 feet in width. Other permanent associated roads, including upgrades to existing woods roads will be 24 feet wide.

Did the applicant factor in already existing impervious areas that are being reused for this project when they calculated phosphorus analysis, as noted in Division of Watershed Management comments.

The calculations should be a "worse case" scenario of potential phosphorus loading when draining into a great pond or fragile or significant streams. The applicant's numbers are too conservative.

In the Decommissioning Plan, to be implemented after the projected 20 year life of the turbines, the applicant has suggested leaving the underground electrical system, 8.2 miles of it, behind.²⁵ The LURC staff should research any secondary contamination, however long it may take to leech out, and the risks involved before allowing the applicant to not remove eight miles of underground electrical lines in this super saturated environment.

²⁴ Technical review memorandum, Division of Watershed Management, dated March 9, 2011.

²⁵ Exhibit 14-20Engineering.pdf. page 147 of 149.

Conclusion

In the Maine Wind Energy Act, the Legislature plainly states that while it wants to encourage wind development, it only wants to do so “where appropriate” and “in a manner that is consistent with *all* state and federal environmental standards.” 35-A MRSA § 3402.

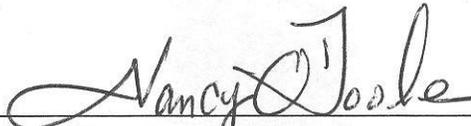
The burden is upon the applicant to demonstrate by substantial evidence that the criteria for approval are satisfied and there will be no unreasonable adverse impacts from this project. I believe they have not met their burden of proof and therefore should be denied a permit for this project.

STATE OF MAINE
LAND USE REGULATION COMMISSION

In RE: Development Permit DP 4886 Blue Sky East, LLC Bull Hill Wind Project, DP4862

Testimony Submitted on Behalf of the Concerned Citizens for Rural Hancock County

Verification

	4/25/2011
Signature of Witness :	Nancy O'Toole

Before me appeared Nancy O'Toole, who, being duly sworn, did testify that the forgoing testimony was true and correct to the best of her knowledge and belief.



NOTARY PUBLIC

CYNTHIA G. DIXON
Notary Public • State of Maine
My Commission Expires March 13, 2017

Exhibit 1

Snow, human activity threaten Hancock County eagle nest

By [Rich Hewitt](#), BDN Staff
Posted April 02, 2011, at 5:56 p.m.



Photo courtesy of Biodiversity Research Institute

A still image from the Biodiversity Research Institute Nextera Maine Eagle Cam 1' webcam shows one of the adult eagles on a nest located at an undisclosed site in Hancock County. Researchers are concerned that recent activity around the site along with Friday's heavy snow storm may have affected the chances that the egg will hatch.

Photo courtesy of Biodiversity Research Institute

ELLSWORTH, Maine — Although the male eagle at a nest site in Hancock County remained on the nest throughout the heavy snowstorm on Friday, observers say they are concerned about the egg the nesting pair laid there last month.

Activity during the week around the nest site, the location of which has not been disclosed, along with the snowstorm, may have determined the fate of that egg. The Biodiversity Research Institute in Gorham monitors the site through its Nextera Maine Eagle Cam1 which provides live images and sound from the nest site.

“The outlook is less positive in terms of success,” Patrick Keenan, BRI’s outreach director and coordinator of the institute’s webcam program, said Saturday. “There has been a lot of activity around the nest lately.”

The female eagle laid the egg on March 25. Given an incubation period of about 35 days, the egg would hatch at the end of April or early May.

There were indications earlier in the week that something might be amiss at the nest, Keenan said. The eagles left the nest for almost an hour on Monday and on Wednesday, and there was some human activity around the nest site, including sounds of a chain saw and some whistling at the eagles.

According to Keenan, the male eagle was attacked by another eagle Thursday and again early Friday before the worst of the storm. That type of activity could have disturbed the egg, he said.

“It’s hard to say whether there was any single event that affected the viability of the egg; and it’s hard to pinpoint what determines whether an egg remains viable,” he said. “Just seeing the egg exposed for a long period of time in the cold weather is not a good sign. The storm may have been the straw that broke the eagle’s back.”

The activity levels at the site, which is on private property, are not all that unusual, according to Keenan.

“I think this activity is typical of the kinds of things eagles are facing at some 500 nests that exist in the state,” he said. “Other eagle’s nests are facing the same or very similar situations.”

There also is some indication that the adult eagle pair may be a different pair than those that produced chicks in 2006, and that they could be young eagles. They are in full adult plumage, so they are at least 4 years old, Keenan said.

“It’s possible that this could be their first or second breeding attempt,” he said. “It can often take some time for them to learn nesting practices.”

The egg may still be viable and the eagle pair may still remain on the nest, even if the egg is not going to produce a chick, Keenan said.

The institute began monitoring the nest in Hancock County in 2006 when it captured footage of a pair of nesting eagles hatching two nestlings that survived. In 2007, a three-day snowstorm resulted in the loss of chicks that already had hatched.

No eggs had been laid since 2007, but there was a lot of activity including what appeared to be territorial disputes.

STATE OF MAINE
LAND USE REGULATION COMMISSION

In RE: Development Permit DP 4886 Blue Sky East, LLC Bull Hill Wind Project, DP4862

TESTIMONY OF MICHAEL GOOD, M.S.,
ORNITHOLOGIST

The following testimony is a result of 19 years of ornithological work across Down East Maine leading professional guided tours of the region, as a avian ecologist researching bird distribution, teaching ornithology courses in Washington and Hancock Counties and growing up in Maine.

From my research and years of documenting birds through every season in Down East Maine, I have come to realize the intensity, duration and immensity of the major migratory seasons. I am the Mount Desert Island compiler for the annual Audubon Christmas Bird Count, have organized many monitoring programs along coastal Maine and I am in the field throughout the spring, summer and fall season monitoring birds and watching their movements and daily routines. Over that last 19 years I have witnessed the intensity with which birds move into our State along the coast during the spring migration and the exit prior to winter during fall migration. These movements of birds are reflected accurately in the report of the "Land Use Regulation Commission Application for the Bull Hill Wind Project from the **Radar Data** on page 16, section 13.0 Wildlife. The trend at the Bull Hill site shows clearly that the range of nightly passage rate (Targets/km/hr) is 188-1500 for fall 2009 and 43-879 for spring 2010. These numbers in my mind, reflect the intensity of migration. Paragraph 7 discusses clearly that the "mean passage rate of 614 t/km/hr in 2009 is on the higher end of the range of results". For this reason it is imperative that all aspects of avian life be looked at in the Bull Hill Wind Project area so that a clear understanding of where the Wind Turbines are to be placed emerges.

The first thing I would challenge in the Bull Hill application is the statement in Sentence 3 section 13, Wildlife, starting with the words... "No Deer Wintering area.... **Or rare, threatened or endangered species were documented or observed within this project area**". I find this statement to be inconsistent with the nature that I see every day in Maine forests. Many species of concern are seen every day in all other woods in Maine. How could it possibly be conceivable that this is not true for the Bull Hill site or any site purposed for Maine. I find this statement totally inaccurate and an attempt to hide the truth about Avian life in Maine forests around the Bull Hill project. Maine is the destination for millions of birds during the spring and fall migration. Maine is the nesting and breeding grounds for hundreds of thousands of birds. **For many species, Maine and the northern forest is the last vestige of hope for their survival.** The fact is that Maine forests are home to so many species of concern, because we still have intact forests that it is simple inconceivable that this is not the case for Bull Hill region.

Fragmentation of any kind threatens birds and their survival and each cumulative change to Maine's forest system degrades the life of Maine people and threatens birds. Maine is the destination for numerous "species of concern" and it is for this very reason.... **THAT WE MUST TAKE SPECIAL PRECAUTIONS NOT TO UPSET THE BALANCE THAT EXISTS IN MAINE FORESTS.**

Habitat fragmentation caused by typical land use is already extreme in most of Maine and is increasing in northern Maine and LURC territories. Cumulative effect must be considered especially in terms of Bald Eagle and other Raptors who will certainly be using the many ponds, streams and wetlands that surround the proposed Bull Hill site. The U.S. Fish and Wildlife Service's created the "Draft Eagle Conservation Plan Guidance" in January 2011 (DECPG) which was written to translate the primary law protecting Eagles. The DEPG recommends cumulative effect analysis be consistent with the principles outlined in the Council on Environmental Quality Handbook. There should be consideration of cumulative effects to Eagles and all birds and their ecosystems by reviewing the effects: 1) effects occur away from the source (changes or consequences can take place some distance from the project. 2) Fragmentation or change in landscape patterns (forestry, cuts for roads and diversion of waterways 3) effects arising from multiple sources or pathways (like multiple industrial wind facilities) and 4) any indirect secondary effect.

Today, birds including Bald Eagle face a variety of compromising and potentially detrimental problems from development and manmade disturbances that cause large scale unintentional avian deaths. Any watersheds altered during construction could have detrimental impacts on birds because they require very specific habitat for nesting and rearing of young. This is the primary reason and what the evolution of migration is all about. Most members of the Turridae (Thrush) family, for example, like Veery, Hermit Thrush and Wood Thrush depend on wetland habitats for breeding and foraging. Canada Warbler depends on "Alder swales" or Shrub wetlands for nesting and migrates to Ecuador and the high Andes of South America. Nesting takes place in about 21 days for most species and disturbance of these habitats are occurring at a fast pace with an increase in these large scale wind turbine projects. I would request strongly limiting wetland manipulation in all ways possible. This is especially true for "**vernal pools**, the life blood of terrestrial systems. Magnolia Warbler (*Dendroica magnolia*) is known to nest in close proximity to vernal pools and is one of the primary sources of food during the nesting season.

Wetland connections must be maintained and unaltered especially in the case of the Tyrannidae (Flycatchers) and Parulidae (Wood Warbler) family. Many wood warblers are already listed as "Species of Concern" and are impacted everyday by land use development throughout Maine. There are 23 species of wood warblers that will have some relationship with the land proposed for the Bull Hill Project. Blackburnian Warbler, Bay-breasted Warbler, American Redstart, Black and White Warbler, Chestnut-sided Warbler are all "Species of Special Concern. To suggest that "no unreasonable impact" to migratory birds will occur from this project **is not conceivable** and every effort must be considered when developing the road system and site development. **Per-construction** monitoring should include a clear

understanding about the watersheds and their connections around the Bull Hill site and a species list compiled for future monitoring projects post-construction.

Cumulative effect is my greatest concern and the lack of serious consideration of these issues the greatest threat to our rich Avian culture in Maine. Terrestrial habitat is being compromised for birds at an alarming rate. With the advent of Wind as an alternative energy source, structures like Wind Turbines are now being placed in the Avian airspace with spinning rotors reaching high into the airspace. Wind Turbines complicate typical discussions about habitat fragmentation not only because habitat is being destroyed through road and site development but now the airspace through which birds fly is greatly threatened by structures of great height located on the proposed Bull Hill site.

Pre-construction monitoring and planning.

The most important work on bird fatalities at Wind Turbine sites are those of Paul Kerlinger and Joelle Gehring et.al. in The Wilson Journal of Ornithology: 122(4) 744-754, 2010 "**Night Migrant Fatalities and Obstruction Lighting at Wind Turbines in North America**". These data are clear in their results that fatalities of night-migrating birds are minimal **at wind turbines equipped only with flashing red lights (strobe or LED) and that steady burning red lights NOT be used on turbines.**" (p 751) Paul Kerlinger's excellent work on guyed communication towers shows clearly a 50-70% reduction in night migratory species just by changing the lighting systems. This is HIGHLY RECOMMENDED as a way to limit avian take (kills) post-construction. Research on tall wire-guyed communication towers show clearly that they kill a greater proportion of birds than Wind Turbines and it has been clearly shown that **night sky lighting with flashing lights reduces bird related fatalities by 50-70%.** This is a goal that must be emulated in the Bull Hill project and all future wind Turbine projects in Maine. Respect for our birds will help maintain a healthy BIODIVERSITY in Maine.

Another clear message from Kerlinger et.al. 2010 is that bird fatalities increase along the eastern flyway because there is a greater diversity and greater number of birds utilizing the eastern migration corridor.

To minimize the fatalities of birds after the project is fully functional , I also "strongly recommend" that night sky lighting in the vicinity of the proposed wind turbines follow the **recommendation of Paul Kerlinger et al. (p749) and that NO Sodium-vapor lamps (steady-burning white flood lights) be used in the general vicinity of wind turbines or around out-buildings or parking areas** as these attract night flying migratory birds into the path of a variety of obstacles including the wind turbines themselves. This is especially true for foggy nights which are numerous on the coastal plain of Down East Maine. Kerlinger et.al. 2010 discuss strong evidence that when these steady-burning lights are illuminated during a fog event there are more incidences of Multi-bird fatality events. Extinguish the sodium-vapor lights or any steady burning light and these fatalities drop to close to zero.

Post-construction monitoring and planning.

Kerlinger et al. 2010 goes on to recommend **that post-construction avian fatality studies continue at wind turbines**, especially those wind turbines taller than those reported in the Wilson Journal 2010 article, and **at turbines in geographic areas where studies have not been conducted and greater numbers of birds may migrate.** (p 751) Clearly, this last statement is aimed at places like Maine where there is little experience with wind turbines and avian fatalities. Also, Maine clearly has many migratory birds passing through the State verified by regional records and years of records from birding events like Acadia Birding Festival and other birding events located in Deer Isle and Washington County. This is especially true along coastal Maine where little data exists about the relative numbers of birds. My personal empirical data from years of research and exploration along coastal Maine suggests HIGH NUMBERS OF NEOTROPICAL AND RAPTorial MIGRANTS arrive along the coastline of Maine in the spring, passing through the State on their way to northern Maine, Canada and beyond. These data plus the radar data of the Bull Hill Wind Project Application indicate that extreme caution be used when sighting the wind turbines around the Bull Hill site.

The absolute size of the spring migration in Maine is not well understood and ornithologists are only beginning to comprehend its immensity through mist netting and banding projects like those recently begun by Rebecca Holberton of the University of Maine: **Gulf Watch Project.** Through these initial banding studies along coastal Maine, it is already understood that species of birds utilize Maine forests and field are basically undetectable by standard non-invasive methods of visual detection. Through mist netting and banding, we now know that Yellow-breasted Chat, for example, are rarely seen but have been caught in mist nets during migration in the fall on Mount Desert Island (Holberton personal communication 2011). These recent revelations reveal how little we know about migratory birds and that generalizations should never be used that minimize the extent to which birds use a particular location like the proposed site for the Bull Hill Wind Turbine project. As noted in the "Land Use Regulation Commission Application, Bull Hill Wind project", the location is surrounded by water. Water is a necessity of life, therefore birds will travel large distances to find drinking water. Molasses, Spectacle, Scammon and Abrams ponds are all in easy flying distance for regional Bald Eagles. To suggest that birds are not found in the study plot certainly does not mean that they are absent.

Continuing studies aimed at understanding the "FLOW" of birds through the region of the proposed wind turbines should focus on spring and fall migratory Neotropical birds and Raptors.

PRE-construction Monitoring Plan should be in place especially during the 2011 spring and fall migration seasons. These need to be conducted with an eye towards understanding movement of birds through the proposed site and has to be done with another view in mind.... Not just, "what about the birds (and animals) that live there?" How are these wind turbines that are spinning... going to impact them (just the Tower and the turbines not moving.... pose little to no

threat to birds) But, "WHAT SCIENCE DO WE NEED ABOUT THE BIRDS THAT MIGRATE **THROUGH** THIS REGION TO GET TO CANADA AND NORTH. Maine is a destination **for millions of birds** flying over the oceans or along our coastal flyway... They hit the coastline in large numbers and I agree with Tom Hodgeman below. **Also, I think you need to look at the Paul Kerlinger data collection methods and follow those.** In fact he should do the work....!
From the State of Maine Fish and Wildlife, Tom Hodgeman

Weekly searches - I appreciate the analysis of bird/bat mortality over time and suggest modifying the weekly search plan - dropping a few weeks in early summer **in exchange for a more continuous track of searches during spring migration and fall migration. I'd suggest searches be conducted April 15 to June 7 then July 7 to Oct 15.** I think that's roughly the same number of weeks as proposed.

2) Daily searches - good idea, no changes to dates but which turbines?

I am not sure many people have been asking the right questions. **Paul Kerlinger** and others are collecting Data on the Wind Turbines already present on our landscape. Their data is important to the question... but "how do we site these to minimize and mitigate damage to migratory birds from the beginning of the project?" These post- construction Plans are vital to answering questions about "How birds migrate along the Maine Coast", "Where do they migrate", at what height are they migrating?" Because birds of different species utilize the airspace at different heights based on wind speed and weather conditions. Here, I AGREE WITH Tom Hodgeman

5) Radar - I think we all agree another year of radar work is needed to see if the flight height and passage rate is anomalous or something that we just haven't seen before.

All along the Maine Coast, the Avian community utilizes Rivers, Streams and Wetland communities as **Stopover Habitats and migratory trails that are vital for breeding success.** These *Stopover* habitats are essential to successful *bird* migrations. Migrating *birds* require these critical *stopover* locations in the same way we need gas stations, horse need grass...**birds require food/energy to make the migration possible.** Many Avian species are insectivores which have genetic memory about pathways that were laid down since the Wisconsinian Glacier. Any high ground in the region will have birds passing over it at the same heights as the wind turbines. It is my strong belief that Raptors are at great risk and the locations of the turbines should hinge on PRE-construction Monitoring Plan. A non-biased and qualified avian scientist should monitor the site from April through June.

There is good data coming out of locations around Maine about the numbers of Raptors coming into the State of Maine at this moment (3/31/2011)... Bradford Mountain and Mount Desert Island Hawk Watch are great sources of information about the numbers of Hawks coming into the state. The Bull Run site should have several avian ecologists looking for signs of migratory birds. There could be a mist netting project designed that would definitively determine species richness and concentrations during the critical periods of migration.

The Wind Towers are going to definitely have an impact on the immediate area around each turbine in terms of birds.

From my many years in the field especially along the coastline of Maine, there are massive and concentrated movements of Birds that migrate and travel through this region of the Maine Coast towards and into the forest of the Gouldsboro Hills and the East Brook region. We have very little science on the major pathways that birds make use of to migrate along this entire Maine Down East Coast. Rebecca Holburton and the University of Maine "Gulf Watch Project" are beginning to give us all a deeper understanding about the species composition and relative numbers of birds that are utilizing these pathways that I am suggesting exist in the Down East region of Maine. This region of Maine has only had a few qualified ornithologists working it for years. During my years of field work as an ornithologist and Registered Maine Guide and teaching field studies, I HAVE WITNESSED THESE MOVEMENTS IN BOTH SPRING AND FALL MIGRATIONS FROM CAMDAN TO LUBEC.

During this time I have witnessed great numbers of birds of many species following the Great Rivers like the Union, Skilling's and Pleasant Rivers and the streams and vast wetland communities of coastal Maine. These lead directly through Eastbrook, Graham Lake and the vast Union River drainages to the north. Also, directly around Eastbrook are Webb, Abrams, Scammon and Molasses Ponds, destination for Migratory Ducks, nesting Common Loons and many species of birds that use pond edges (Flycatchers, Warblers, Nighthawks, Swallows for example).

Vernal pools:

Vernal Pools are the exact location for many nesting Warblers like Magnolia Warbler (*Dendroica magnolia*), Black and White Warblers, Blue-headed Vireo and Red-eyed Vireo, Vernal pools play into the discussion about birds so any comments about vernal pools are important to the Avian community.

Standardizing methods and metrics for quantifying avian fatalities at communication towers:

Lessons from the windpower industry

Paul Kerlinger, Ph.D.

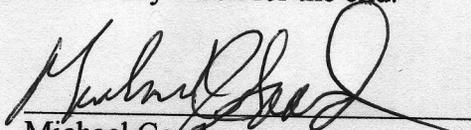
Curry & Kerlinger, L.L.C., P.O. Box 453, Cape May Point, NJ 08212

Phone: (609) 884-2842 Email: pkerlinger@aol.com

In the wind power industry, we generally look for larger carcasses because many of the birds involved are raptors - species like Red-tailed Hawks seem to be more susceptible as are Golden Eagles. They also remain on the ground for much longer periods. So searches on the order of one month versus every day in the case of small birds - nocturnal migrants - are used. The area searched should be determined by the height of the tower. In the wind power industry we search areas with a radius of about 50-60 meters

from the tower. This is probably a larger area than we used to search because turbines previously were smaller. Now the turbines are poking through 76 meters (250 feet) above ground level. We are going to have to look at a larger area to evaluate if we are finding a high proportion of the carcasses. But just to let you know, most of the carcasses fall within about 35-40 meters of the bottom of turbines. Those, again, are primarily large carcasses. We agree pretty much on carcass removal and scavenging studies - the types of studies that need to be done.

The notary block for the end:



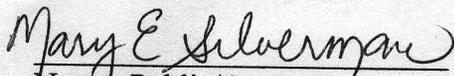
Dated: April 25, 2011

Michael Good
Bar Harbor, Maine

COUNTY OF HANCOCK
STATE OF MAINE, ss

On this day personally appeared the above Michael J. Good, MS , and made oath that the above statements are true and correct to the best of his knowledge, information and belief.

Before me,

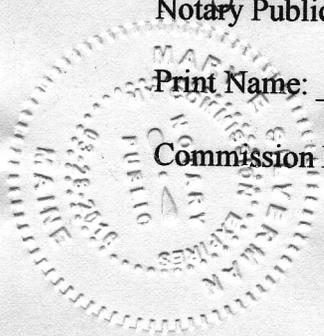
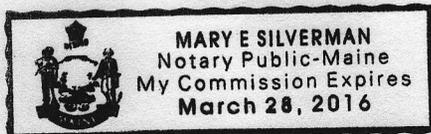


Dated: April 25, 2011

Notary Public/Attorney

Print Name: _____

Commission Expires: _____



STATE OF MAINE

LAND USE REGULATION COMMISSION

In RE: Development Permit DP 4886 Blue Sky East, LLC Bull Hill Wind Project, DP4862

Direct Testimony of Renata Moise

On a Monday holiday in October of 2010, I hiked Black Mountain with my husband and another couple from near Bangor. I frequently hike both Schoodic Mountain, from the Donnell Pond parking area, as well as adjacent Black Mountain. The mountains are an easy 25 minute drive from Hancock, where I have lived all my life. The Mountains provide me with a spiritual experience of being in the wilderness, and seeing the vast expanse of forest, lakes and mountains from the tops of each.

After hiking Black from the east side, we climbed down and drove the old dirt track back to the Donnell Pond access road, turned right and headed down to the Donnell Pond parking area at the foot of Schoodic and the West side of Black. We intended to hike down the trail to the beach at Donnell pond for a look at the lake and to briefly explore the trails that lead off the beach toward the West side of Black Mountain.

In the parking lot I spotted a young man with a clip board standing near the Schoodic Mountain trail head. I immediately knew what this was: I had heard a rumor that a company planned to put a wind farm on Bull Hill, or some where else to the north in the township, or in Eastbrook. I told my companions that I felt this man with the clip board was taking a survey for the scenic impact study on behalf of the company. Who else would stand with a clip board in this remote location late in the afternoon of an October day?

I told my group that I wanted to participate in the survey when we were done with our walk to the lake. The others were in a hurry to get home but agreed that we could talk to the young man. I

became more and more upset as I walked to the beautiful lake and back- the rumor was true- the glorious view sheds of wilderness might be lost. I had already looked on a map at home regarding this rumor: Bull Hill rises 616 feet into the air about 11 miles north of Schoodic Mountain; the windmills themselves would rise more hundreds of feet above the "hill"- so that the actual height of the top of the blades would be nearly equal to the height of both Schoodic (1069) and Black (1094). The man made roads and clearings would be obvious, and the wind farm would forever change the experience of the views from the top.

As we reached the parking area again on foot, I walked with my husband and the husband of the couple we were with over to the young man with the clip board. Had I not known why he was there, I'm not sure the purpose of why we were being asked to take a survey would have come out. Only two of us could take the survey at a time, and the survey was some what lengthy, 10 or 15 minutes. It was getting colder. My husband and his friend said they would take the survey first. In retrospect, I was interested to see that many more men than women took the survey- I think it was because a man was asking questions in an isolated location, and since only two could take the survey at a time, in a larger mixed group, the men would tend to go first. Since the survey was lengthy, it would be logical that after the first two took it, the group would move on, as not to stand around waiting. I fully intended to take the survey- however, as the survey was begun, and I listened to the questions which were asked, I became more angry. The numbering system (I have never taken a survey which asked me to grade things between one and seven) also was confusing. I waited for my husband to be shown a photo of what the windmills would look like from the top of Schoodic and Black, but we were only shown what they would look like from the beach at Donnell, because that was where we had just walked to. I felt that the fact that we would be able to see the tops of the windmills from the isolated beach at Donnell (a very popular wilderness beach with state camping spots which can be used for free in the summer), meant that these windmills and roads, clearings, etc..would certainly be visible very obviously from the tops of both mountains. I did not take the survey myself for two reasons: first, I was extremely upset by

the phrasing of the questions and felt I would not be able to get across my strong feelings, and because it was late in the day, cold, and my fellow hikers did not want to wait another 15 minutes for me.

This survey should have been conducted through the summer, when many more people visit these areas. Beach goers, swimmers and boaters should have been asked how their experience of Donnell Pond would be impacted by the long row of windmills straight across from them on the other side of the the wilderness lake beach. I felt that I was not really listened to when I asked to see photos of Schoodic and Black and was not shown those photos. I was so upset with what I felt was an underhanded survey method, that I asked the young man for his card, and have kept it since, as a reminder of this issue.

In summary, it is my opinion that the survey was neither valid, nor reliable given that it was taken very late in the season, it only surveyed hikers, and even those hikers were not shown photographs of the full range of visual impacts the turbines will have on the entire area.

Renata Moise

Renata Moise
Hancock, Maine

Dated: April 25, 2011

COUNTY OF HANCOCK
STATE OF MAINE, ss

On this day personally appeared the above Renata Moise, and made oath that the above statements are true and correct to the best of his knowledge, information and belief.

Renata Moise

Renata Moise

Dated: April 25, 2011

Before me,

Marilyn J. Lowell
Notary Public/~~Attorney~~

Dated: April 25, 2011

Print Name: _____ MARILYN J. LOWELL
NOTARY PUBLIC
Commission Expires: _____ MY COMMISSION EXPIRES
JANUARY 12, 2014



04.25.2011

STATE OF MAINE
LAND USE REGULATION COMMISSION
In RE: Development Permit DP 4886 Blue Sky East, LLC Bull Hill Wind Project, DP4862

Commissioners:

We have been retained by Lynne Williams, Attorney of Bar Harbor ME who has been recognized as an intervening party in the above referenced matter.

Our specific request from Ms. Williams was to review and comment on the Visual Impacts report submitted on behalf of the Applicant.

We have reviewed the *Visual Impacts Assessment* and Appendices submitted by Terrence J. DeWan and Associates (TJDA) and dated December 7, 2010 and the review thereof by James F. Palmer (JFP) dated March 21, 2011.

We concur with most of Mr. Palmer's comments regarding the need for specifying the assumptions inherent in the vegetation factor relating to determining intervisibility throughout the viewshed. However, we find that the overall vegetation assumptions do not accurately model the effective screening (or, lack thereof) provided by vegetation in the viewshed.

1. A quick view of the area on Google Maps utilizing satellite imagery depicts large areas of vegetation types not indicated the TJDA report:
 - a. Harvested and regenerating cover types contain significantly sized parcels that have been effectively clear-cut, or have been replanted with seedlings that do not yet provide screening (e.g. south and east of Narraguagus Lake)
 - b. Blueberry barrens (especially those along Maine RT 182)
 - c. Large wetlands dominated by low, marshy vegetation (Hooper Heath, etc.)
2. There does not appear to be consideration given to the fact that many of the deciduous areas, regardless of height or stem density provide little or no screening from late October through the end of April. (See Figure 1.0)



138 Cottage Street
Bar Harbor ME 04609
v 207.288.0006 f 207.288.0601
www.moore-cos.com

Figure 1.0. Photo acquired along Maine Route 182 facing north, upslope from TJDA Study Area Photos 79-81. Observe the difference in transparency of vegetation during different times of the year.



We also concur with Mr. Palmer's comment on the error regarding visibility from Spectacle Pond and derive from the error that the model may have inherent flaws that undermine our confidence in the Viewshed Maps in Exhibit 18, Appendix A. Our confidence is further eroded by the conclusion stated on page 15:

"Scenic Byways: Route 182 connecting the Towns of Franklin and Cherryfield has been designated as the Blackwoods Scenic Byway by the Maine Department of Transportation...Views of the Project from the roadway are blocked throughout its length by topography and roadside vegetation."

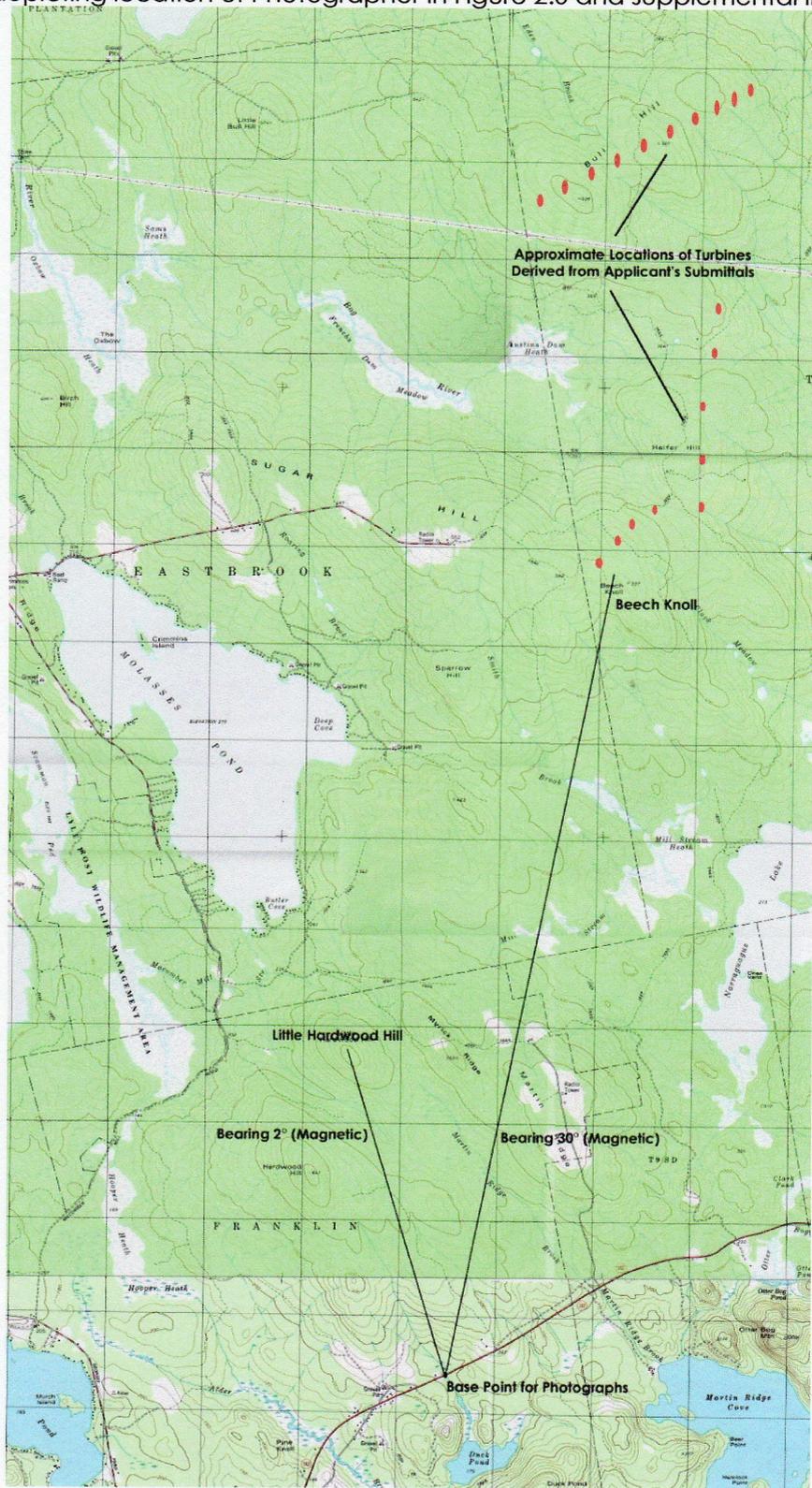
A field test of this assertion indicates that the conclusion is likely erroneous. (See Figures 2.0 and 3.0). Figure 2.0 is a mosaic of two digital photographs acquired at about 8:30AM on April 25, 2011, which has been annotated to identify the landforms on the horizon. Figure 3.0 is a reduced mosaic of the USGS maps depicting the terrain on Figure 2.0 annotated to indicate the location of the photographer and the bearings to the features depicted. We can be certain that the landform depicted as Beech Knoll cannot be confused with Martin Ridge because Martin Ridge is the site of a

radio tower that is visible from several parts of Route 182. It is also apparent from the granularity of the horizon treeline on Little Hardwood Hill that the feature identified as Beech Knoll is much farther in the distance than Martin Ridge. It is likely that some of the white pines which appear to be just in front of the hill noted are located on the northern slope of Martin Ridge which is about 100' lower in elevation than Beech Knoll. An argument can be made that the landform is, in fact Bull Hill, but given the apparent relative distances and elevations, it is more likely that Beech Knoll obscures much of Bull Hill. This example appears to illustrate well our observations as noted in item 1.c., above, and it would appear that several of the turbines on Beech Knoll and Heifer Hill will be visible (year round) from Route 182, and likely those on Bull Hill may also project above the visible horizon in this location. In this case, given the importance of the issue, we submit that a "balloon test" would be in order to verify the veracity of the TJDA conclusion.

Figure 2.0 Mosaic of digital photographs taken along Maine Rt. 182



Figure 3.0 Map depicting location of Photographer in Figure 2.0 and supplemental information.



Visual Impact Review (The Moore Companies)

LURC Development Permit DP 4886

Blue Sky East, LLC Bull Hill Wind Project, DP4862

25 April 2011

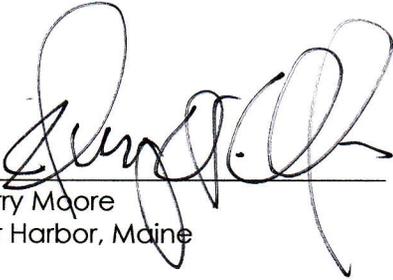
It is our conclusion that while the TJDA assessment does represent a significant body of earnest effort toward modeling the visual impacts of the proposal, there remain sufficient questions regarding the accuracy of the model and veracity of the conclusions.

We submit that the Applicant should provide the following:

1. A "balloon test" where in the actual intervisibility of the scenic byway and the Beech Knoll/Heifer Hill turbines can be confirmed; and,
2. The TJDA assessment model be modified to include greater detail regarding the vegetation types described and an additional viewshed map modeled for the times of year when deciduous vegetation does not provide effective screening of the project.

Without these two items, it is our opinion that the visual assessment provided by the Applicant does not provide the Commission with reliable information that can be utilized to make findings under MRSA 35-A §3452.

Respectfully submitted,



Perry Moore
Bar Harbor, Maine

Dated: April 25, 2011

COUNTY OF HANCOCK
STATE OF MAINE, ss

On this day personally appeared the above Perry Moore, and made oath that the above statements are true and correct to the best of his knowledge, information and belief.

Before me,



Notary Public/Attorney

Dated: April 25, 2011

Print Name: Patricia A. Gray

Commission Expires: 1/7/2013

PATRICIA A. GRAY
NOTARY PUBLIC
State of Maine
My Commission Expires
January 7, 2013