

May 2008 wildlife progress report for the proposed Fox Island Electrical Cooperative, Inc. Wind Power Project on Vinalhaven Island

Norman Famous and Dr. Richard Podolsky

1.0 Summary

Spring migration area-search counts, vernal pool surveys, and rare plant searches were conducted during late April and May at the Fox Island Electrical Coop's proposed wind power facility on Vinalhaven Island, Maine. Twelve area-search count locations were placed in four groups of three: (1) along the access road; (2) first set of ledges west of the access road (Ledge #1); (3) the second set of ledges immediately south of the access road (Ledge #2); and (4) the third set of ledges located SW of Ledge #2 (Ledge #3). With the exception of Count circle #4 located in the center of Ledge #1, and Count circle #8 in the center of Ledge #2, survey locations were placed about 100 or more meters apart. The approximate locations of the 12 survey sites are shown in Figure 1.

2.0 Spring Migration Area-search Counts

Five 20-minute area-search counts were conducted during morning and early afternoon hours on April 14, April 27, May 9, May 17, and May 27. The locations of all birds seen and heard, including 'fly-overs' which include birds that did not land but flew through air space above the site or within view, were placed on area-search data sheets (Figure 2). The number of fly-overs will help determine the risk of daylight collisions. The approximate height and distance from the observer of the flying birds were tallied.

Landbird use of project area during the spring migration and early nesting season was low in terms of number of species and number of individual birds. Fifty-two species were detected on the five visits. The largest groups of species included warblers (15 species), woodpeckers (4), sparrows (4), and thrushes (4). The number of non-flying species per day was low, ranging from 11 on April 14 to 32 on May 27. Likewise, the total number of diurnal non-flying birds at the site and along the access road was low. Both the number of species and number birds was highest along the access road where there were a greater number of habitat types with a higher volume of foliage, more foliage layers, more patches of forested wetland, and a higher percentage of deciduous trees. Most birds appeared to be resident breeders based on territorial behavior as they appeared to be defending territories within a small area (breeding territory) for several hours. By contrast, migrating birds will also present their territorial songs as if defending a territory but they usually do not remain within small areas the size of their typical breeding territory. Many of the presumed resident birds were present from visit to visit, which strongly suggests that they were defending breeding territories.

The number of both migrating species and individual birds that over-winter in the eastern US ('North American migrants') versus the number of migrating species and individual birds that over-winter in warmer areas south of the US border ('Neotropical migrants') were lower in number and density than expected, likely the result of the harsh

Figure 1. Project area showing area-search count circles



Figure 2. Bird survey data sheet.

Point # _____ Time _____ Date _____ Song Activity _____

Location _____ Weather _____

Observer _____ Comments _____

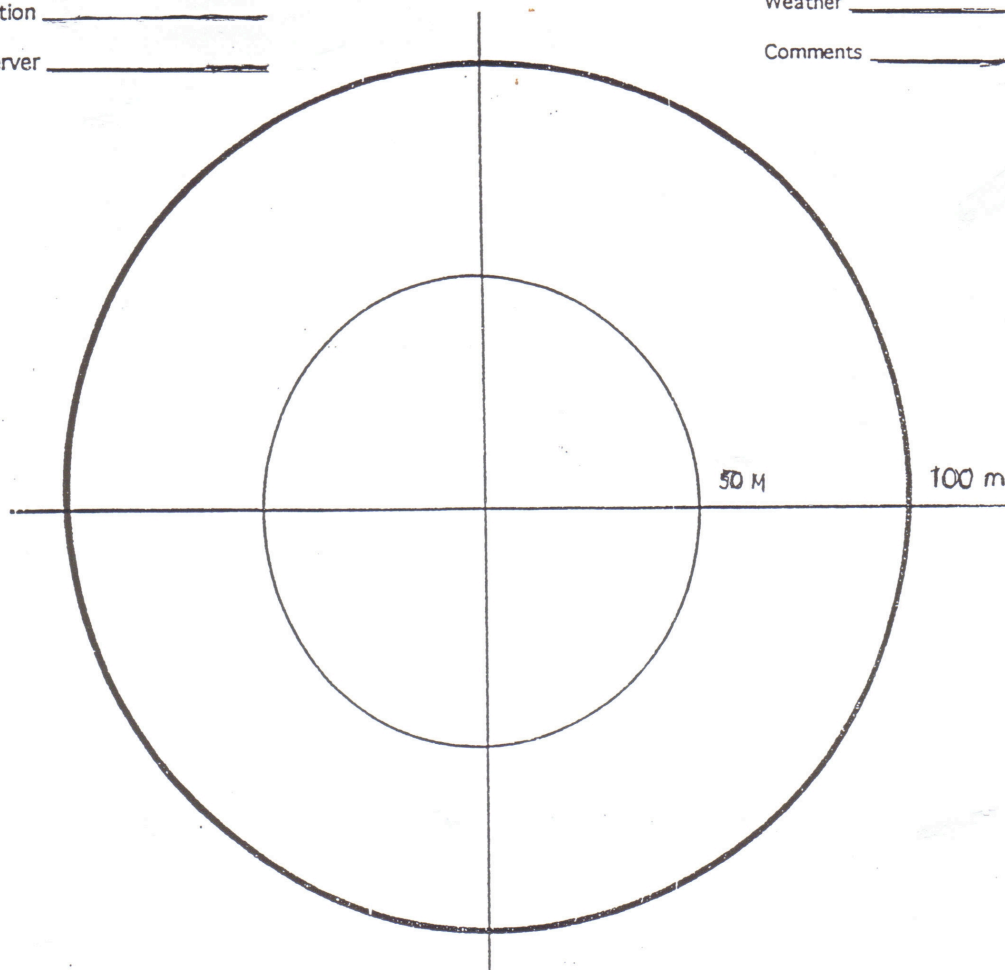
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Table 1. List of birds observed on or near the proposed wind power site on Vinalhaven, Maine.

<u>Species</u>	<u>Fly-overs</u> <u>Footprint--Distant</u>		<u>Footprint</u> <u>Area</u>	<u>Surrounding</u> <u>Forests</u>	<u>Access Road</u>
Black duck	-	-	-	X (feathers)	-
Double-crested cormorant	-	X	-	-	-
Bald eagle	-	X	-	-	-
Sharp-shinned hawk	-	X	X	X	-
Killdeer	X	X	-	-	-
Greater yellowlegs	X	X	-	-	-
Herring gull	X	X	-	-	-
Great black-backed gull	X	X	-	-	-
Mourning dove	-	-	-	X	X
Barred owl	-	-	-	X	-
Belted kingfisher	-	X	-	-	-
Downy Woodpecker	-	-	X	X	X
Hairy Woodpecker	-	-	X	X	X
Common flicker	-	-	X	X	X
Pileated woodpecker	-	-	X	X	X
Blue-headed vireo	-	-	X	X	X
Red-eyed vireo	-	-	-	X	X
Blue jay	X	-	X	X	X
American crow	X	-	X	X	X
Common raven	X	-	X	X	X
Black-capped chickadee	-	-	X	X	X
Red-breasted nuthatch	-	-	-	-	X
Winter wren	-	-	X	X	X
Golden-crowned kinglet	X	-	X	X	X
Ruby-crowned kinglet	-	-	X	X	X
Veery	-	-	-	X	X
Swainson's thrush	-	-	X	X	X
Hermit thrush	-	-	X	X	X
American robin	-	-	X	X	X
Cedar waxwing	-	-	X	X	X
Tennessee warbler	-	-	-	-	X
Nashville warbler	-	-	X	X	X
Northern parula	-	-	X	X	X
Magnolia warbler	-	-	X	X	X
Yellow-rumped warbler	-	-	X	X	X
Black-throated green warbler	-	-	X	X	X
Blackburnian warbler	-	-	-	X	X
Palm warbler	-	-	X	X	X
Bay-breasted warbler	-	-	X	X	X
Blackpoll warbler	-	-	X	-	-
Black-and-white warbler	-	-	X	X	X

Table 1. List of birds observed on or near the proposed wind power site on Vinalhaven, Maine – Continued.

<u>Species</u>	<u>Fly-overs</u>		<u>Footprint</u>	<u>Surrounding</u>	<u>Access Road</u>
	<u>Footprint--Distant</u>		<u>Area</u>	<u>Forests</u>	
American redstart	-	-	X	X	X
Ovenbird	-	-	X	X	X
Common yellowthroat	-	-	X	-	-
Wilson's warbler	-	-	X	-	-
Eastern towhee	-	-	X	-	-
Song sparrow	-	-	-	-	X
White-throated sparrow	-	-	X	X	X
White-crowned sparrow	-	-	-	-	X
Dark-eyed junco`	-	-	X	X	X
Purple finch	-	-	X	X	X
Pine siskin	X	-	-	-	-

2007-2008 winter. Examples include dark-eyed junco, white-throated sparrow, song sparrow, hermit thrush, common flicker, golden and ruby-crowned kinglets, eastern towhee, and black-capped chickadee). Their depressed numbers contributed significantly to the low numbers of dark-eyed juncos, white-throated sparrows, song sparrows, hermit thrushes, and golden-crowned kinglets using the project area. In 2004, these species occurred in much higher densities in similar habitats on nearby Starboard Rock.

The number of birds flying over and adjacent to the project area was low. Most were herring gulls flying between 300 and 500 feet above the ground with the greatest number flying between 400 and 500 ft. Use of airspace was highest in April during the pre-laying stage of their nesting cycle. Flying gulls were also more detectable during April because they were usually vocalizing, which appeared to be pre-nesting behavior.

No hawks were observed flying over the project area while one bald eagle and one sharp-shinned hawk passed about 300 yards south of the project area.

3.0 Vernal Pool Surveys

One vernal pool was detected on the west edge of Ledge #2. It contained 18 yellow-spotted salamander egg masses. Several egg mass groups were comprised of clusters of two-three smaller egg masses, representing the reproductive effort on a single female. Twelve egg mass groups were stranded on wet mosses on May 27. Most of these egg masses were still viable prior to a late afternoon rain shower, which should have raised the pool's water level.

It is prudent to plan to avoid and minimize impacts to the vernal pool while developing the site plan and during construction and post construction. Vernal pools are considered a valuable natural resource by the US Fish and Wildlife Service (USFWS), a primary review agency for the US Army Corps of Engineer (ACOE). The USFWS's wildlife project analyst for Maine recommends following guidelines presented by Calhoun and Klemens (2002) that, depending on site-specific conditions, may include up to a 500 to 700 foot buffer surrounding vernal pools. If full avoidance is not practicable, the Service typically works with applicants to develop site-specific management plans to minimize impacts. Placement of the tower's anchor will be located on dry exposed granitic ledge that is broken by large vertical fissures, which limit salamander travel.

Calhoun, A.J.K. and M.W.Klemens. 2002. Best development practices: conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No.5, Wildlife Conservation Society, Bronx, NY.

4.0 Rare Plant Surveys

Rare vascular plant surveys were conducted during and between survey periods. No federal or state listed endangered and threaten species or state listed Species of Special Concern or their habitats were detected. The most unusual species detected was the small, early-flowering 'Bright-green spike-rush', *Eleocharis olivacea* Torr., a new species record for Knox County. Two populations were located; one was growing with the diminutive *Sphagnum pylaesii* around the perimeter of the vernal pool on the west side of Ledge #2, while the second very small population was located in a shallow wet depression in Count circle #3 located on the southwest side of Ledge #1. Bright-green spike-rush is an obligate wetland species which colonizes small spring-fed or seepage wetlands. The weakly branched *Sphagnum pylasii* is considered a pioneer species over low-nutrient high-elevation wet rocks or similar low-elevation microhabitats in coastal locations (Andrus 1980).

Andrus, R.E., 1980. Sphagnaceae (Peat Moss Family) of New York State. Bulletin N.. 442, New York State Museum, Albany, NY. 89 pp.

Although most active Maine botanists view Bright-green spike-rush as very uncommon in Maine, the MNAP has not listed it as a Species of Special Concern. In New Brunswick, Canada, Bright-green spike-rush is classified as extremely rare with a rarity ranking of S-1 (Hinds 2000; one historic collection for New Brunswick). Avoidance and minimization is strongly recommended for both populations.

Hinds, H.R., 2000. Flora of New Brunswick, second edition. Biology Department, University of New Brunswick, Bag Service 4511, Fredericton, NB Canada, E3B 6E1. 695 pp.

The vertical and horizontal surfaces on the ledge outcrops supported large lichen populations interspersed with stunted pitch pine trees. The cover type is classified by the MNAP as Pitch Pine Woodland, which is ranked as S-3. Not exemplary in quality, this stand has been historically disturbed by quarrying and Brome-crowberry (*Corema conradii*), a typical indicator species associated with Pitch Pine Woodlands, was absent. Exemplary examples of Pitch Pine Woodlands are well represented on Vinalhaven Island on lands managed by the Vinalhaven Land Trust (e.g., Starboard Rock).

5.0 Project Work Schedule for June and July

- Breeding season fixed-diameter point counts will be conducted three times
- Surveys of birds flying over and flying in the vicinity of the project area will be conducted
- Rare plant searches will continue
- Wetland delineations will begin
- A preliminary list of vascular plants will be prepared

6.0 Findings and Preliminary Conclusions

Birds:

- Hawk use of the project area was low.
- Landbird use throughout the migration and early nesting season was low.
- The numbers of species and individual birds were highest along the access road where more cover types or habitat types occur that are structurally more diverse with a greater volume of foliage, have more patches of forested wetland, and a higher percentage of deciduous trees.
- The numbers of migrant species that winter in the eastern US ('North American migrants' vs. 'Neotropical migrants' that winter in warmer areas south of the US border) appear lower than expected in breeding density, probably the result of the harsh winter of 2007-2008 (e.g., dark-eyed junco, white-throated sparrow, song sparrow, hermit thrush, common flicker, golden and ruby-crowned kinglets),

- The airspace above the project area and surrounding forests were used primarily by herring gulls.
- Herring gulls used airspace between 400 and 500 ft. (typically ranging between 350 and 550 ft.).
- Use of airspace by herring gulls was highest during the pre-laying stage of the nesting cycle in April then decreased in early May.
- Flyover gulls vocalized more and were more conspicuous during the pre-laying courtship stage.

Vernal Pools:

- A vernal pool supporting 18 yellow spotted salamander egg masses was located along the west edge of Ledge #2.
- Permitting implications: The pool did not qualify as a Significant Vernal Pool under Maine's NRPA criteria (e.g., 20 yellow spotted salamander egg masses are needed). The pool will require a buffer under ACOE regulations, which can range as large as 500⁺ feet (no minimum size given). The ACOE and USFWS work with applicants to develop vernal pool management plans designed to avoid and minimize impacts to the pool and surrounding habitats.
- The vernal pool is located near one of the proposed tower footprints.

Rare Plants and Natural Communities:

- No federal or state listed plants were located.
- No S-1 or S-2 natural community types were located; they are protected under Maine's Natural Resources Protection Act.
- The Pitch Pine Woodland Community on the ledges is ranked as S-3 but it is non-exemplary in quality.