



February 13, 2013

Mr. Seth Wilmore
Everpower Wind Holdings, Inc.
1251 Waterfront Place, 3rd Floor
Pittsburgh, PA 15222

RE: Ecological Impact Evaluation for the Electrical Connection Route Amendment to the Buckeye I Wind Facility, Located in Champaign County, Ohio; EVP010.300.0011.

Dear Mr. Wilmore:

Hull & Associates, Inc. (Hull) is pleased to provide Buckeye Wind LLC, a wholly owned subsidiary of Everpower Wind Holdings, Inc., with this review of potential ecological impacts to vegetative communities and animal life for the Buckeye I Wind Farm. The Client is pursuing an amendment to the Certificate of Environmental Compatibility and Public Need (Certificate) issued for the Buckeye I Wind Facility by the Ohio Power Siting Board (OPSB) on March 22, 2010. The amendment will include buried electrical interconnects in place of overhead electrical lines in certain areas of the Buckeye I Wind Farm.

Introduction

Buckeye Wind LLC is proposing an amendment to the Certificate for the Buckeye I Wind Farm, which will include construction of buried electrical interconnects. This document assesses potential ecological impacts to vegetative communities and animal life as a result of construction of the amended project in accordance with Ohio Administrative Code 4906-17-08 (B).

Survey Area

The survey area was developed using a Geographic Information System (GIS), and included a 25-foot-width buffer centered on the alignment of the proposed relocated buried electrical lines. The survey area comprised a total of 91.2 acres, representing the area of land disturbance that will occur in order to install the relocated buried electrical interconnects. The survey area was evaluated using the vegetation mapping performed for the Buckeye II Wind Farm project area. Approximately 84.6 acres (92.8%) of the survey area was found to consist of active or fallow agricultural land. The remaining 6.6 acres (7.2%) of the survey area was found to consist of forested and scrub-shrub vegetation areas.

Land cover within the general vicinity of the survey area is a flat mosaic of active and abandoned agricultural land, upland scrub-shrub land, and fragmented upland forest stands. The National Land Cover Database (NLCD) classifies most of the general vicinity of the survey area as "planted/cultivated" which is defined by the USEPA as being "areas characterized by herbaceous vegetation that has been planted or is intensively managed for the production of food, feed, or fiber; or is maintained in developed settings for specific purposes".

Vegetative Communities within the Survey Area

Based on GIS screening of the survey area combined with a field survey, certain generalized vegetative community types occur within the survey area, including active and fallow agricultural areas, scrub-shrub areas and forest areas. Ecological impact to agricultural areas from the proposed relocation of buried interconnects is assumed to be negligible. The forest vegetative community type is further subdivided into upland woods, upland ridge woods (upland woods occurring on sloped terrain), and riparian woods (woods occurring adjacent to stream corridors).

Hull identified scrub-shrub and forested vegetative community types within the survey area as follows.

- **Scrub-Shrub**

The scrub-shrub community type comprises approximately 2.8 acres (3.0%) of the survey area. This community type is an intermediate successional stage between old field and forest. The scrub shrub community is dominated by upland shrubs and small trees; common species include green ash (*Fraxinus pensylvanica*), maples (*Acer* spp.), hackberry (*Celtis occidentalis*), raspberry and/or blackberry (*Rubus* spp.), multiflora rose (*Rosa multiflora*), and honeysuckles (*Lonicera* spp). The scrub-shrub type can occur on flat to sloping terrain, but usually does not occur on steep slopes.

- **Forest**

The forest community type comprises approximately 3.8 acres (4.2%) of the survey area. The forest community type is further subdivided as follows:

- **Upland Woods**

This community type comprises approximately 1.9 acres of the Forest community type within the survey area, and occurs on flat to gently sloping terrain on well-drained soils. Species typically observed within the canopy of this community type include honey locust (*Gleditsia triacanthos*), white oak (*Quercus alba*), shagbark hickory (*Carya ovata*), green ash, ironwood (*Ostrya virginiana*), American elm (*Ulmus americana*), black cherry (*Prunus serotina*), cottonwood (*Populus deltoides*), tupelo (*Nyssa sylvatica*), white ash (*Fraxinus americana*), osage orange (*Maclura pomifera*), burr oak (*Quercus macrocarpa*), sugar maple (*Acer saccharum*), red oak (*Quercus rubra*), and post oak (*Q. stellata*), while the shrub layer is dominated by honeysuckle shrubs.

- **Upland Ridge Woods**

This wooded community type occurs on steeply sloped ridges that are inaccessible for agricultural purposes and comprises approximately 1.0 acres of the Forest community type within the survey area. Upland forest species found here include black cherry, catalpa (*Catalpa speciosa*), sugar maple, hackberry, white oak, red oak, sycamore (*Platanus occidentalis*), and green ash in the canopy, hop hornbeam (*Carpinus caroliniana*), paw paw (*Asimina triloba*), honeysuckles, and blackberries in the shrub layer. Species observed in the herb layer include *Geum* sp., *Aster* sp., and

garlic mustard (*Alliaria petiolata*), and may also include a diverse herbaceous spring flora.

- **Riparian Woods**

Riparian woods occur along streams and creeks and within floodplains, and comprise approximately 0.9 acres of the Forest community type within the survey area. Riparian woods typically occur on moderately well-drained alluvial soils. Species typically observed within the canopy include black cherry, honey locust, box elder (*Acer negundo*), green ash, American elm, cottonwood, burr oak, osage orange, red maple (*Acer rubrum*), red oak, tupelo, mockernut hickory (*Carya tomentosa*), Ohio buckeye (*Aesculus glabra*), and hackberry. Species within the shrub layer include honeysuckles, hawthorn (*Crataegus* spp.), spicebush (*Lindera benzoin*), and multiflora rose.

Animal Life within the Survey Area

Hull compiled a list of vertebrate fauna likely to occur in each habitat type identified within the survey area, based on field observations and published data. The results of these surveys are presented below by habitat type.

Animal life in Scrub-Shrub habitat: Mammals that utilize scrub-shrub habitats include white-tailed deer, red fox, coyote, groundhog, striped skunk, eastern cottontail rabbit, field mouse, and meadow vole. A variety of songbird species utilize scrub-shrub communities for nesting and rearing young, including indigo bunting, dark-eyed junco, robin, eastern towhee, sparrows, mourning dove, cardinal, and kingbird. Reptiles are not common in scrub-shrub habitats within the survey area, but a few snake species such as garter snakes or eastern hognose snake could inhabit these areas.

Animal life in Upland Woods and Upland Ridge Woods habitat: Mammalian species that utilize mature upland forest and upland ridge habitats within the survey area include white-tailed deer, red fox, gray fox, coyote, raccoon, opossum, eastern cottontail rabbit, fox squirrel, gray squirrel, red squirrel, and eastern chipmunk. In addition, several bat species may utilize these wooded plant community types for roosting, foraging or as travel corridors, particularly when wetlands or streams are also present in the woods or in the immediate vicinity. Bird species that utilize forested habitats in the survey area may include scarlet tanager, blue jay, Baltimore oriole, black-capped chickadee, a variety of woodpecker species, vireos, and various raptor and owl species. Reptilian species that utilize forested habitats in the survey area include eastern box turtle, eastern fox snake, and several garter snake species.

Animal life in Riparian Woods habitat: Mammals expected within the riparian woods habitat are similar to those described above for the upland woods and upland ridge habitats, with the addition of species that prefer to be located in or near small streams/wetlands, such as muskrat, mink, long-tailed weasel, beaver, and various bat species. Bird species that utilize these community types include various warbler

species, goldfinch, cedar waxwing, wood thrush, hermit thrush, numerous woodpecker species, nuthatches, screech owl, barred owl, great-horned owl, whip-poor-will, eastern wild turkey, and various hawk species. Reptilian species that utilize forested habitats in the Project Area include eastern box turtle, eastern fox snake, and several garter snake species.

Animal species of commercial value: Animal species of commercial value are also present in the survey area. Ohio DNR regulates the hunting and trapping of furbearers in Champaign County, including muskrat, raccoon, red fox, gray fox, coyote, mink, opossum, striped skunk, weasel, and beaver. Given the remoteness of the survey area from urbanized areas, it is possible that hunting, trapping, and predator culling occur, and that furbearing animals are harvested and sold as regulations permit; however this type of commercial activity is probably very limited in this area.

Animal species of recreational value: The survey area contains habitats suitable for animal species of recreational value. Forest and scrub-shrub areas within the survey area support populations of white-tail deer, ringneck pheasant, and wild turkey, all of which have been observed in the vicinity of the survey area. These habitats are used by hunters during hunting season. The average diversity of birds expected within the survey area is unlikely to attract more than a few avocational birdwatchers.

Federally-listed species: The survey area contains habitats with the potential to support a single federally-listed animal species: Indiana bat (endangered). Review of the United States Department of the Interior's federally-listed species by Ohio counties list (USFWS, 2012) indicates that the survey area is within the range of two federally-listed and one candidate species: Indiana bat (endangered), rayed bean mussel (endangered), and eastern massasauga (candidate); however, suitable habitat for rayed bean mussel and eastern massasauga are not present within the survey area. No federally-listed species were observed in the survey area.

State-listed species: The survey area contains habitats with the potential to support state-listed animal species. The table below shows the state-listed animal species with potential habitat within the survey area, along with general habitat requirements and Ohio state status for each species.

Animal Species¹			
Scientific Name	Common Name	General Habitat	Ohio Status²
<i>Falco peregrinus</i>	peregrine falcon	variety/nests on tall structures	E
<i>Myotis sodalis</i>	Indiana bat	woodlands	E ³
<i>Taxidea taxus</i>	badger	variety	SC

¹ (Hull & Associates, 2012)

² E = Endangered, T = Threatened, SC = Species of Concern (ODNR, 2012).

³ This species is also federally-listed as Endangered.

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The impact of construction on animal species of commercial or recreational value is expected to be minimal. The ecological communities within the survey area are important to a variety of vertebrate species; however, impacts from buried interconnect construction will be narrowly confined to linear corridors and will not adversely affect usage of these habitats.

Assessment of Ecological Impacts Due to Construction of Amendment Route

Ecological impact resulting from buried interconnect construction is expected to be minimal. Electrical cables will be placed into an excavated ditch and buried. The total width of soil and vegetation disturbance of the ditching operation is 25 feet. The alignment of the ditching operation will be adjusted in the field to avoid any significant features such as large trees.

Hull anticipates that impacts to ecological habitats and animal species due to buried interconnect construction will be minimal throughout the survey area.

If you have any questions regarding the analysis and conclusions presented in this report, please do not hesitate to contact me at your convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "H. Crowell", with a stylized, cursive script.

Hugh F. Crowell, PWS
Ecology & Wetlands Practice Leader

References

Hull. 2012. *Surface Waters, Ecological Communities, and Threatened & Endangered Species*. Prepared for Champaign Wind LLC. February 2012. EVP010.300.0008.

ODNR. 2012. *Endangered and Threatened Species* [website]. Available at: <http://www.dnr.state.oh.us/tabid/5664/Default.aspx> (Accessed February 7, 2013).

USFWS. 2012. *Federally Listed Species by Ohio Counties*. Ecological Services, Columbus, Ohio. October 16, 2012.

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Summary: Application Appendix B - Ecological Report electronically filed by Mr. Michael J. Settineri on behalf of Buckeye Wind LLC