



February 25, 2010

Lynn Gresock  
Arcadis  
2 Executive Drive, Suite 303  
Cheimsford, Massachusetts 01824

Federal Agency: Unknown

Re: General information regarding a wind energy facility (DHPA #9137)

Dear Ms. Gresock:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated February 23, 2010 and received on February 24, 2010 for the above indicated project in Madison, Tipton, Grant and Howard counties, Indiana.

A Section 106 Review cannot be completed unless there is a federal agency involved in a project for the purposes of funding, licensing, permitting, authorization or other approval. The Indiana SHPO is unable to determine if any of these activities apply to this project. If, however, this project invokes any of these activities by a federal agency and/or includes involvement by the State of Indiana, the following information is required to facilitate a review by our office:

- 1) Give the name and address of the Federal agency, including the identified contact person that has responsibility for the project, activity, or program, and, if applicable, the name of the program.
- 2) Provide a letter or copy of a letter from the Federal agency indicating the authorized representatives who may act on behalf of the Federal agency.
- 3) Identify the undertaking.<sup>1</sup>
- 4) Provide an overall description of the project and its location.
  - Detail any construction, demolition, and earthmoving activities.
- 5) We have noted the map provided to our office but we are unable to determine the exact project area or areas. Please define the area of potential effects<sup>2</sup> and provide a map or a good quality photocopy of a map containing the following:

<sup>1</sup> Undertaking means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a Federal agency (see 36 C.F.R. § 800.16[y]).

<sup>2</sup> Area of potential effects means the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (see 36 C.F.R. § 800.16[d]).

- The boundaries of the area of potential effects and the precise location of the project area within those boundaries clearly outlined in dark ink on a copy of the relevant portion of a town, city, county, or U.S. Geological Survey quadrangle map.
  - The names of nearby landmarks clearly labeled (e.g., major streets, roads, highways, railroads, rivers, lakes).
- 6) Give the precise location of any buildings, structures, and objects *within the area of potential effects* (e.g., addresses and a site map with properties keyed to it).
  - 7) Give the known or approximate date of construction for buildings, structures, objects, and districts *within the area of potential effects*.
  - 8) Submit historical documentation for buildings, structures, objects, and districts *within the area of potential effects*.
  - 9) List all sources checked for your historical research of the *area of potential effects*.
  - 10) Provide clear, recent photographs or good quality computer-generated images (not photocopies or aerial photographs), keyed to a site plan, showing any buildings, structures, objects, or land *that could be affected in any way by the project*. These photographs should be of the project area and the defined area of potential effect.
  - 11) Describe the current and past land uses within the project area; in particular, state whether or not the ground is known to have been disturbed by construction, excavation, grading, or filling, and, if so, indicate the part or parts of the project area that have been disturbed and the nature of the disturbance; agricultural tilling generally does not have a serious enough impact on archaeological sites to constitute a disturbance of the ground for this purpose.

Once the indicated information is received, the Indiana SHPO will resume identification and evaluation procedures for this project. Please keep in mind that additional information may be requested in the future.

*A copy of the revised 36 C.F.R. Part 800 that went into effect on August 5, 2004, may be found on the Internet at [www.achp.gov](http://www.achp.gov) for your reference. If you have questions about buildings or structures please contact Miriam Widenhofer at (317) 233-3883 or [mwidenhofer@dnr.IN.gov](mailto:mwidenhofer@dnr.IN.gov). Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA #9137.*

Very truly yours,



James A. Glass, PhD  
Deputy State Historic Preservation Officer

JAG:MLW:mlw



Indiana Department of Natural Resources

March 2, 2010

Ms. Lynn Gresock  
Arcadis U.S., Inc.  
2 Executive Drive, Suite 303  
Chelmsford, MA 01824

Dear Ms. Gresock:

I am responding to your request for information on the endangered, threatened, or rare (ETR) species, high quality natural communities, and natural areas documented from the Wildcat Wind Project, Indiana. The Indiana Natural Heritage Data Center has been checked and enclosed you will find information on the ETR species documented near the project area.

For more information on the animal species mentioned, please contact Christie Stanifer, Environmental Coordinator, Division of Water, 402 W. Washington Room W264, Indianapolis, Indiana 46204, (317)232-4160.

The information I am providing does not preclude the requirement for further consultation with the U.S. Fish and Wildlife Service as required under Section 7 of the Endangered Species Act of 1973. If you have concerns about potential Endangered Species Act issues you should contact the Service at their Bloomington, Indiana office.

U.S. Fish and Wildlife Service  
620 South Walker St.  
Bloomington, Indiana 47403-2121  
812)334-4261

At some point, you may need to contact the Department of Natural Resources' Environmental Review Coordinator so that other divisions within the department have the opportunity to review your proposal. For more information, please contact:

Department of Natural Resources  
attn: Christie Stanifer  
Environmental Coordinator  
Division of Water  
402 W. Washington Street, Room W264  
Indianapolis, IN 46204  
(317)232-4160

Please note that the Indiana Natural Heritage Data Center relies on the observations of many individuals for our data. In most cases, the information is not the result of comprehensive field surveys conducted at particular sites. Therefore, our statement that there are no documented significant natural features at a site should not be interpreted to mean that the site does not support special plants or animals.

Due to the dynamic nature and sensitivity of the data, this information should not be used for any project other than that for which it was originally intended. It may be necessary for you to request updated material from us in order to base your planning decisions on the most current information.

Thank you for contacting the Indiana Natural Heritage Data Center. You may reach me at (317)232-8059 if you have any questions or need additional information.

Sincerely,

*Ronald P. Hellmich*

Ronald P. Hellmich  
Indiana Natural Heritage Data Center

Attachments      invoice  
                         Data GIS Shapefile



# United States Department of the Interior Fish and Wildlife Service



Bloomington Field Office (ES)  
620 South Walker Street  
Bloomington, IN 47403-2121  
Phone: (812) 334-4261 Fax: (812) 334-4273

March 24, 2010

Ms. Lynn Gresock  
ARCADIS  
2 Executive Drive, Suite 303  
Chelmsford, Massachusetts 01824

Dear Ms. Gresock:

Thank you for your letter dated February 23, 2010 concerning a proposal for the Wildcat wind power generation project in Grant, Howard, Madison and Tipton Counties, Indiana.

These comments are being provided pursuant to the Endangered Species Act (ESA), the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and Fish and Wildlife Act of 1956. This information is being provided to assist you in making an informed decision regarding site selection, project design, compliance with applicable laws, and to determine whether a permit to cover anticipated take of species is appropriate under the ESA.

The Fish and Wildlife Service (Service) supports the development of wind power as an alternative energy source, however, wind farms can have negative impacts on wildlife and their habitats if not sited and designed with potential wildlife and habitat impacts in mind. Selection of the best sites for turbine placement is enhanced by ruling out sites with known high concentrations of birds and/or bats passing within the rotoswept area of the turbines or where the effects of habitat fragmentation will be detrimental. In support of wind power generation as a wildlife-friendly, renewable source of power, development sites with comparatively low bird, bat and other wildlife values, would be preferable and would have relatively lower impacts on wildlife.

The Migratory Bird Treaty Act (16 U.S.C. 703-712; MBTA) implements four treaties that provide for international protection of migratory birds. The MBTA prohibits taking, killing, possession, transportation and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. Bald and golden eagles are afforded additional legal protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). Unlike the Endangered Species Act, neither the MBTA nor its implementing regulations at 50 CFR Part 21, provide for permitting of "incidental take" of migratory birds.

While the MBTA has no provision for allowing unauthorized take, the Service recognizes that some birds may be killed at structures such as wind turbines even if all reasonable measures to avoid it are implemented. While it is not possible under the MBTA to absolve individuals, companies, or agencies from liability if they follow these recommended guidelines, the Service's Office of Law Enforcement and Department of Justice have used enforcement and prosecutorial discretion in the past regarding individuals, companies, or agencies who have made good faith efforts to avoid the take of migratory birds.

There has been increasing concern regarding mortality of bats associated with wind power facilities. Although not federally protected (unless on the endangered species list), many species of bats are declining and are listed as endangered or special concern by individual states. Factors contributing to bat mortality at wind farms are not completely understood, but there seems to be a strong association with migrating bats, especially of certain species, and adequate information on bat migration patterns is lacking for many species.

The Service's "voluntary" Interim Guidelines on Avoiding and Minimizing Impacts from Wind Turbines may be helpful as you evaluate your proposed wind power generation site (<http://www.fws.gov/habitatconservation/wind.htm>). The guidance contains a pre-development site evaluation and ranking process to assess potential project impacts, as well as recommendations for conducting post-construction monitoring. The guidance also contains more information on the applicable laws and permitting aspects in Appendices 3 and 5. Service staff welcome the opportunity to work with representatives of your industry.

As discussed in our voluntary interim guidelines, post-construction monitoring is critical for evaluating the effects of the project on migratory birds and bats. Monitoring should use standard methods which include components of bird mortality and avoidance of structures. If species of concern are present, pre-construction bird surveys may also be warranted.

### Site-specific Information

#### Migratory Birds

Habitat for migratory birds within the project boundaries includes stream corridors, several small wetlands (mostly forested) and small upland woodlots (mostly less than 20 acres). Based on a review of maps and aerial photographs the most significant wetlands are forested wetlands along or near the Wildcat Creek stream corridors in the far northeast portion of Phase 4 (70-80 acres of riparian forest). Some of the wetland and upland woodlots are in close proximity to drainageways and/or forested wetlands, while others are isolated. In agricultural landscapes these features often provide the only habitat for many species of migratory birds.

We are not aware of any site-specific bird issues. There are no Important Bird Areas (IBA's) or potential IBA's near the project area based on 2008 information. The closest significant migratory bird habitat is Mississinewa Lake and State Recreation Areas, approximately 6 miles north of the project boundary; the forested Wildcat Creek corridor; and the forested Pipe Creek corridor about 3 miles southeast of the boundary.

## Bats

In Indiana several species of bats forage and roost along forested drainageways and within large patches of other habitat types where an insect forage base is present. Early monitoring data from existing wind power projects in Indiana have shown bat mortality from turbine blade collisions, chiefly during migration season, as in virtually all other wind farm wildlife mortality studies. Very little information is available on the migration pathways of bats in Indiana, however it is likely that bat mortality will occur at all projects. Due to the potential species-level impacts of turbine mortality, all wind power projects should take appropriate measures to minimize bat mortality.

## Water Resources

Some of the streams within the project boundaries provide aquatic habitat for fish, macroinvertebrates and amphibians. In addition to their wildlife habitat value, wetlands, streams and riparian areas serve to protect water quality in downstream receiving waters. We recommend preservation of all water resources along with riparian buffers. Work within streams or wetlands may require permits from the US Army Corps of Engineers and/or the Indiana Department of Environmental Management. Work within floodways may require a permit from the Indiana Department of Natural Resources.

## Endangered Species

Because of the potential for wind power projects to impact endangered birds, bats, or other listed species, they are subject to the Endangered Species Act (16 U.S.C. 1531-1544) section 9 provisions governing "take", similar to any other development project. Take incidental to a lawful activity may be authorized through the initiation of formal consultation, if a Federal agency is involved; or if a Federal agency, Federal funding, or a Federal permit are not involved in the project, an incidental take permit pursuant to section 10 (a)(1)(B) of the ESA may be obtained upon completion of a satisfactory habitat conservation plan for the listed species. However, there is no mechanism for authorizing incidental take "after-the-fact".

The proposed project is within the range of the Federally endangered Indiana bat (*Myotis sodalis*). Indiana bats hibernate in caves, then disperse to reproduce and forage in relatively undisturbed forested areas associated with water resources during spring and summer. Recent research has shown that they will inhabit fragmented landscapes with adequate forest for roosting and foraging. Young are raised in nursery colony roosts in trees, typically near drainageways in undeveloped areas. Like all other bat species in Indiana, the Indiana bat diet consists exclusively of insects.

An Indiana bat mortality from a wind turbine collision was documented during the fall migration season in 2009. This mortality confirms the concerns of the community of scientists who study bats that Indiana bats, like other species, are susceptible to mortality at wind turbines. Most bat fatalities at turbines occur during late summer and autumn, suggesting that bats may be particularly susceptible during fall migration. While there are insufficient data to assess seasonal patterns of mortality of Indiana bats at wind facilities, based on data from other species we

suspect that Indiana bats may also be at highest risk during fall migration, when migrating from summering areas to winter hibernacula. These migrations occur throughout the range of the species. Take of Indiana bats without authorization from the FWS would constitute a violation of Section 9 of the Endangered Species Act (ESA). To avoid liability under the ESA we recommend that the proposed project pursue one of the following alternatives:

1. Obtain an incidental take permit from the FWS, either through a federal agency pursuant to Section 7 of the ESA, or through development of a Habitat Conservation Plan (HCP) pursuant to Section 10 of the ESA.
2. Develop a plan, in coordination with the FWS, to avoid take of Indiana bats by implementing appropriate design and operation measures. Potential measures include, but are not limited to, operation modifications during bat migration season. These avoidance measures would be conducted in conjunction with increased post-construction monitoring to evaluate the success of implemented measures. This monitoring will allow the FWS to compile more information on Indiana bat migration, patterns of collision with turbines, and underlying reasons why bats collide with turbines. Using this information, recommendations for minimizing and avoiding collisions can be refined.

There are no Indiana bat hibernacula known to exist near the project area. There is suitable summer habitat for this species present in and around the study area, mostly limited to the forested stream corridors and adjacent forest. The most significant habitat within the project boundaries is the aforementioned riparian forest in the northeast portion of Phase 4, which connects to additional habitat downstream. However, there is also good summer habitat near the project boundaries in some locations. The closest summer record of Indiana bats is along the upper reach of Wildcat Creek approximately ½ mile upstream from the habitat in Phase 4, but to our knowledge most of the study area has not been surveyed. Due to the possibility of Indiana bat mortality during summer foraging we recommend that one or more of the following measures be implemented in this project.

1. Avoid installing wind turbines within 2 ½ miles of good summer habitat.
2. Conduct a mistnet survey in habitat areas of concern during the spring/summer maternity season, to determine whether Indiana bats are present. Mistnet surveys must be performed by personnel with appropriate state and federal permits.
3. Include potential take of bats from summer habitat within an HCP as discussed above for migration season.

This endangered species information is provided for technical assistance only, and does not fulfill the requirements of Section 7 of the Endangered Species Act.

Thank you for the opportunity to provide preliminary comments on the aforementioned proposed wind power generation project. Please re-coordinate with this office as project development proceeds. For further discussion please call Mike Litwin at (812) 334-4261 ext. 205.



Sincerely yours,

A handwritten signature in blue ink that reads "Michael S. Pruitt". The signature is written in a cursive style with a large initial "M".

Scott E. Pruitt  
Field Supervisor

cc: Matt Buffington, Indiana Division of Fish and Wildlife, Indianapolis, IN  
Jeff Gosse, USFWS, Twin Cities, MN

