

Republic Wind Project

APPENDIX

D

AGENCY CORRESPONDENCE



Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR

SEAN D. LOGAN, DIRECTOR

Division of Wildlife
David M. Graham, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

April 2, 2010

To all interested parties,

Based upon the revised project boundary map received on 2 April 2010, the Ohio Department of Natural Resources Division of Wildlife (DOW) has prepared these survey recommendations for the proposed Nordex wind energy project located in Seneca County. After reviewing the project area map provided and site visits conducted within that region, the DOW has determined that this proposed facility would be classified as a "moderate" site under the current monitoring protocols (Fig. 1).

The table below was created based upon the project maps provided and summarizes the types and level of effort recommended by the DOW. Results from these studies will help the Department of Natural Resources assess the potential impact these turbines may pose, and influence our recommendations to the Ohio Power Siting Board. Monitoring should follow those criteria listed within the "On-shore Bird and Bat Pre-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio."

Project	
Survey type	
Breeding bird	Breeding bird surveys should be conducted at all sites. The number of survey points may be based on the amount of available habitat, or twice the maximum number of turbines proposed for the site. Because agricultural land is not considered to be suitable nesting habitat for most species of bird, turbines placed within these types of habitat are exempt of this recommendation.
Raptor nest searches	Nest searches should occur on, and within a 1-mile buffer of the proposed facility.

Raptor nest monitoring	There are 2 eagle nests located on or within 2 miles of the proposed project. These pairs should be monitored to assess their daily movement patterns. Should additional nests of a protected species of raptor be located during nest searches, monitoring should commence as outlined within the on-shore protocols.
Bat acoustic monitoring	Acoustic monitoring should be conducted at all meteorological towers.
Passerine migration (# of survey points)	16
Diurnal bird/raptor migration (# of survey point)	1
Sandhill crane migration (same points as raptor migration)	NS
Owl playback survey points	1
Barn owl surveys	NS
Bat mist-netting (# of survey points)	32
Nocturnal marsh bird survey points	NS
Waterfowl survey points	NS
Shorebird migration points	NS

Radar monitoring locations	NS
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NS = Not required based on the lack of suitable habitat.

The DNR looks forward to working with you on this or any other proposed project in the future. If you have any questions, please feel free to contact me.

Keith

Old Woman Creek Nat'l Estuarine Research Reserve and State Nature Preserve
Ohio Division of Wildlife
2514 Cleveland Road East
Huron, OH 44839
Office phone: 419-433-4601
Cell: 419-602-3141
Fax: 419-433-2851

cc: Mr. Stuart Siegfried, Ohio Power Siting Board
Ms. Megan Seymour, United States Fish and Wildlife Service

Figure 1.

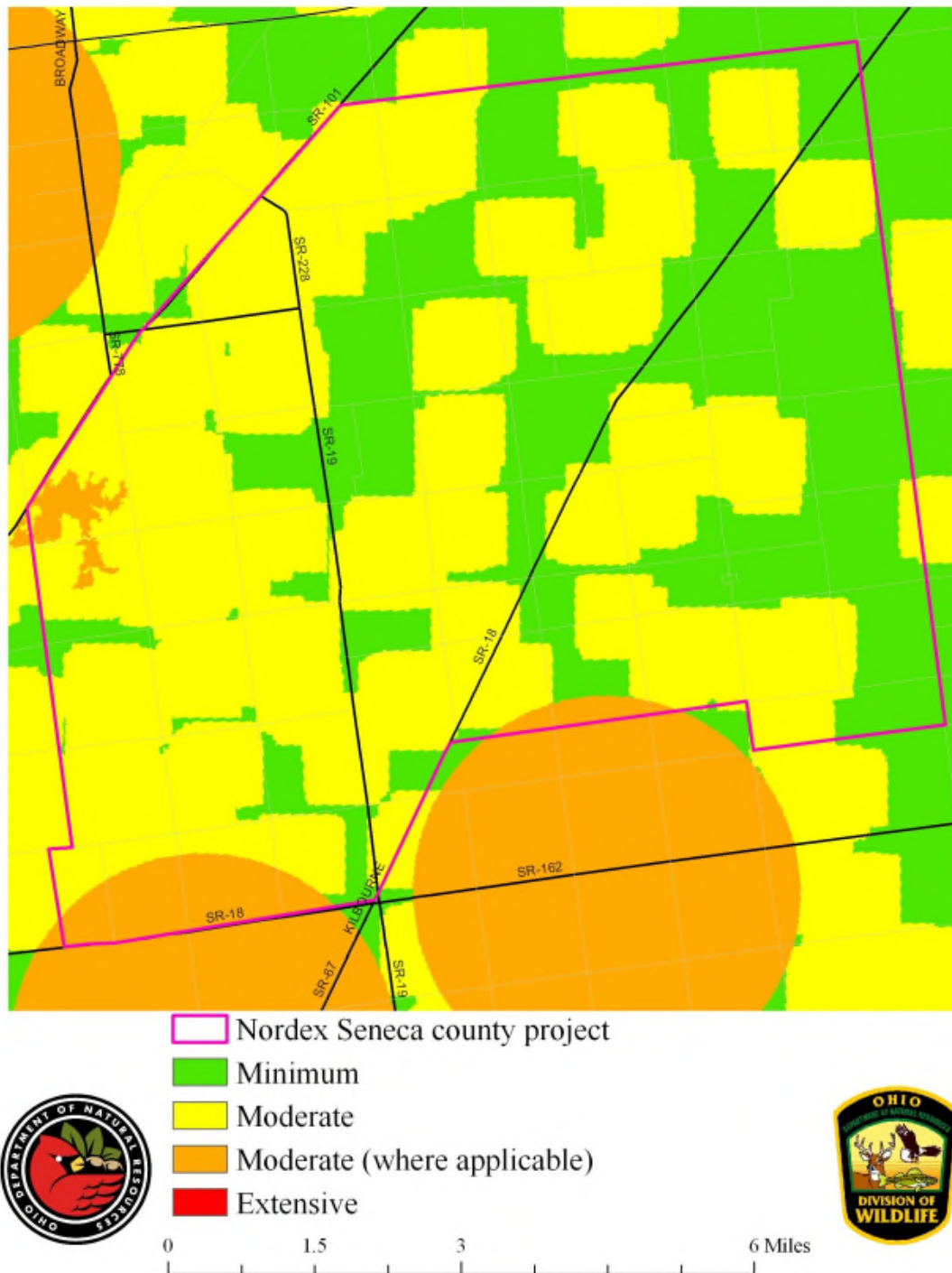
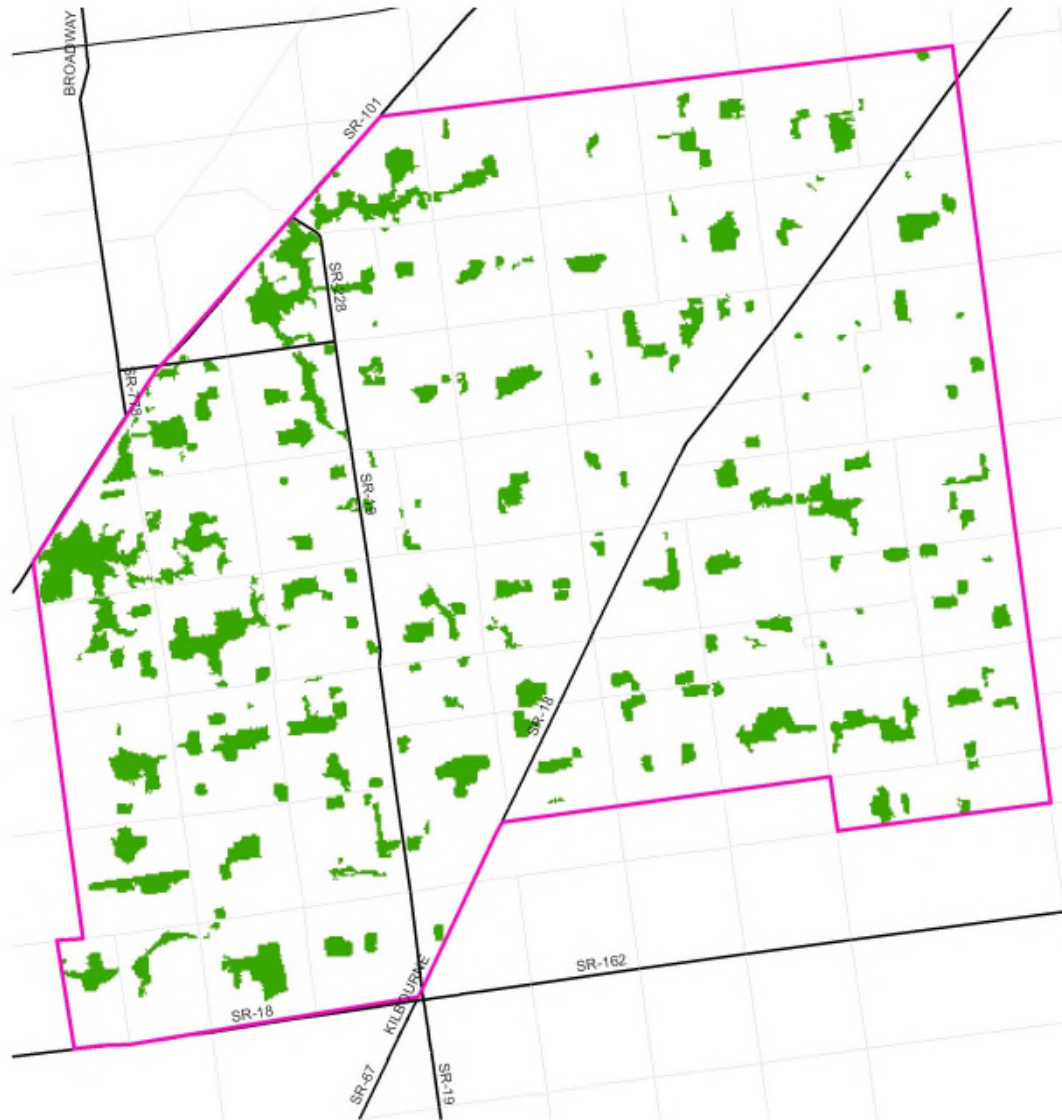




Figure 2.



 Nordex Seneca county project
 Forest cover

0 1.5 3 6 Miles





Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

DAVID M. STINE, DIRECTOR

Ohio Division of Wildlife

Vicki J. Mountz, Acting Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

January 25, 2011

To all interested parties,

Based upon the project boundary map received on 24 January 2011, the Ohio Department of Natural Resources Division of Wildlife (DOW) has prepared these survey recommendations for Nordex's proposed project located in Seneca County.

Currently the project falls within regions that DOW has identified as needing moderate (where applicable) monitoring efforts. If the developer decides to amend the boundaries, the DOW will revise our survey recommendations.

The table below was created based upon a review of the project maps provided and summarizes the types and level of effort recommended by the DOW. Results from these studies will help the Department of Natural Resources assess the potential impact these turbines may pose, and influence our recommendations to the Ohio Power Siting Board. Monitoring should follow those criteria listed within the "On-shore Bird and Bat Pre-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio."

For additional ODNR comments, including information on the potential presence of threatened and endangered species within or adjacent to your project area, please contact Brian Mitch at (614) 265-6378 or brian.mitch@dnr.state.oh.us

Project

Survey type	
Breeding bird	Breeding bird surveys should be conducted at all sites. The number of survey points may be based on the amount of available habitat, or twice the maximum number of turbines proposed for the site. Because agricultural land is not considered to be suitable nesting habitat for most species of bird, turbines placed within these types of habitat are exempt of this recommendation.
Raptor nest searches	Nest searches should occur on, and within a 1-mile buffer of the proposed facility.
Raptor nest monitoring	There is 1 eagle nest located on or within the 2 miles of the proposed project. This pair should be monitored to assess their daily movement patterns. Should any additional nests of a protected species of raptor be located during nest searches, monitoring should commence as outlined within the on-shore protocols.



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

DAVID MUSTINE, DIRECTOR

Bat acoustic monitoring	To be conducted at all meteorological towers.
Passerine migration (# of survey points)	11
Diurnal bird/raptor migration (# of survey point)	1
Sandhill crane migration (same points as raptor migration)	NS
Owl playback survey points	NS
Barn owl surveys	NS
Bat mist-netting (# of survey points)	15
Nocturnal marsh bird survey points	NS
Waterfowl survey points	NS
Shorebird migration points	NS
Radar monitoring locations	NS

NS = Not required based on the lack of suitable habitat.

If you have any questions, please feel free to contact me.

Jennifer Norris, Wind Energy Wildlife Biologist
Olentangy Wildlife Research Station
Ohio Division of Wildlife
8589 Horseshoe Road
Ashley, OH 43003
Office phone: 740-747-2525 x 26
Cell: 419-602-3141
Fax: 740-747-2278

cc: Mr. Stuart Siegfried, Ohio Power Siting Board
Ms. Megan Seymour, United States Fish and Wildlife Service
Mr. Brian Mitch, Ohio Department of Natural Resources

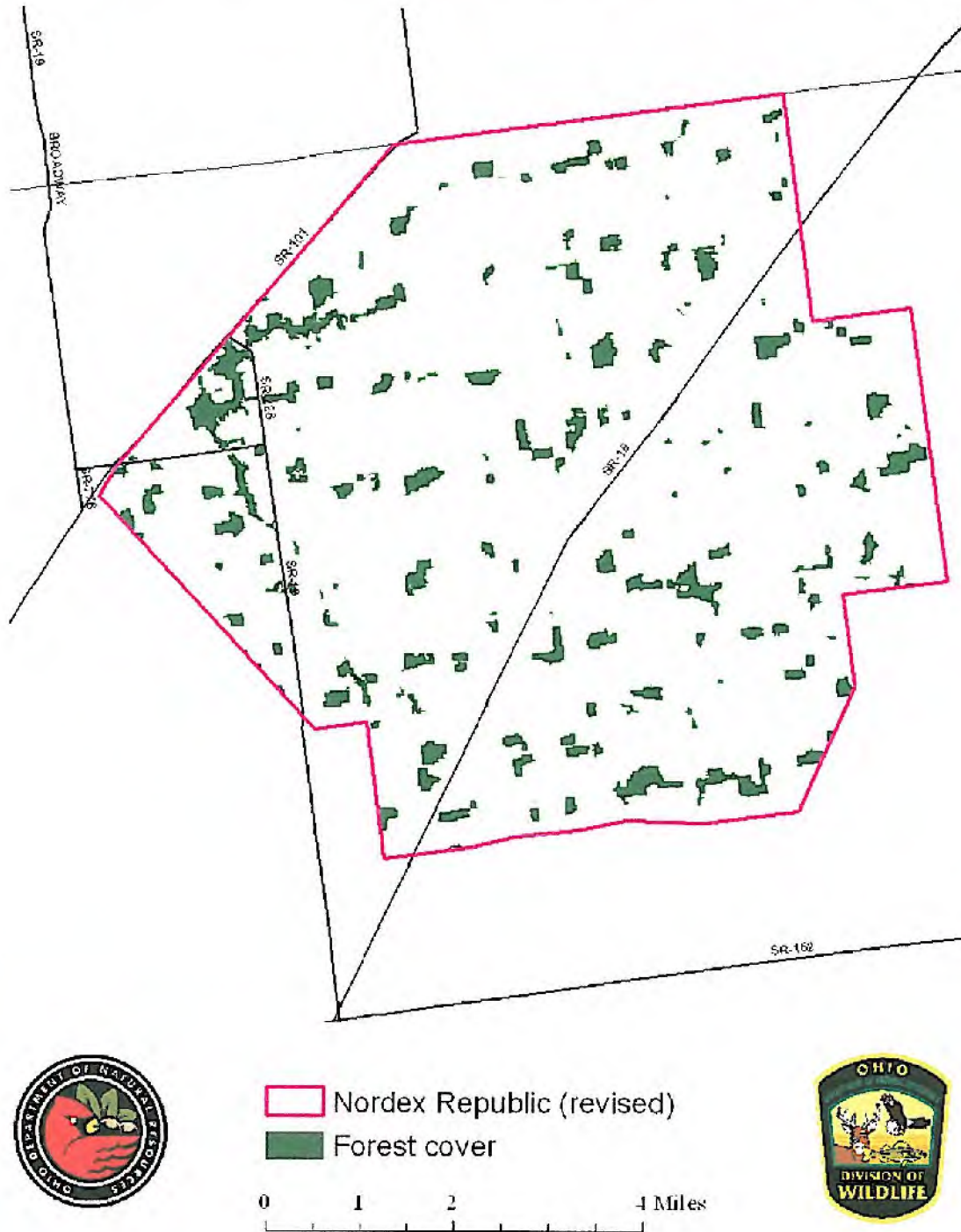


Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

DAVID MUSTINE, DIRECTOR

Figure 2. Forest cover map with revised boundary for Nordex's proposed Republic project.





Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

DAVID MUSTINE, DIRECTOR

Ohio Division of Wildlife

Vicki J. Mountz, Acting Chief
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Phone: (614) 265-6300

February 16, 2011

To all interested parties,

Based upon the updated project boundary map received on 8 February 2011, the Ohio Department of Natural Resources Division of Wildlife (DOW) has prepared these revised survey recommendations for Nordex's proposed project located in Seneca County.

Currently the project falls within regions that DOW has identified as needing extensive monitoring efforts. If the developer decides to amend the boundaries or based upon DOW site visit, the DOW will revise our survey recommendations.

The table below was created based upon a review of the project maps provided and summarizes the types and level of effort recommended by the DOW. Results from these studies will help the Department of Natural Resources assess the potential impact these turbines may pose, and influence our recommendations to the Ohio Power Siting Board. Monitoring should follow those criteria listed within the "On-shore Bird and Bat Pre-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio."

For additional ODNR comments, including information on the potential presence of threatened and endangered species within or adjacent to your project area, please contact Brian Mitch at (614) 265-6378 or brian.mitch@dnr.state.oh.us

Project	
Survey type	
Breeding bird	Breeding bird surveys should be conducted at all sites. The number of survey points may be based on the amount of available habitat, or twice the maximum number of turbines proposed for the site. Because agricultural land is not considered to be suitable nesting habitat for most species of bird, turbines placed within these types of habitat are exempt of this recommendation.
Raptor nest searches	Nest searches should occur on, and within a 1-mile buffer of the proposed facility.
Raptor nest monitoring	There is 1 eagle nest located on or within the 2 miles of the proposed project; as well 2 additional nests are just past the 2 mile buffer. The pair within the 2 mile radius should be monitored to assess their daily movement patterns. Should any additional nests of a protected species of raptor be located during nest searches, monitoring should commence as outlined within the on-shore protocols.



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

DAVID MUSTINE, DIRECTOR

Bat acoustic monitoring	To be conducted at all meteorological towers.
Passerine migration (# of survey points)	11
Diurnal bird/raptor migration (# of survey point)	1
Sandhill crane migration (same points as raptor migration)	NS
Owl playback survey points	NS
Barn owl surveys	NS
Bat mist-netting (# of survey points)	22
Nocturnal marsh bird survey points	NS
Waterfowl survey points	NS
Shorebird migration points	NS
Radar monitoring locations	1

NS = Not required based on the lack of suitable habitat.

If you have any questions, please feel free to contact me.

Jennifer Norris, Wind Energy Wildlife Biologist
Olentangy Wildlife Research Station
Ohio Division of Wildlife
8589 Horseshoe Road
Ashley, OH 43003
Office phone: 740-747-2525 x 26
Cell: 419-602-3141
Fax: 740-747-2278

cc: Mr. Stuart Siegfried, Ohio Power Siting Board
Ms. Megan Seymour, United States Fish and Wildlife Service
Mr. Brian Mitch, Ohio Department of Natural Resources

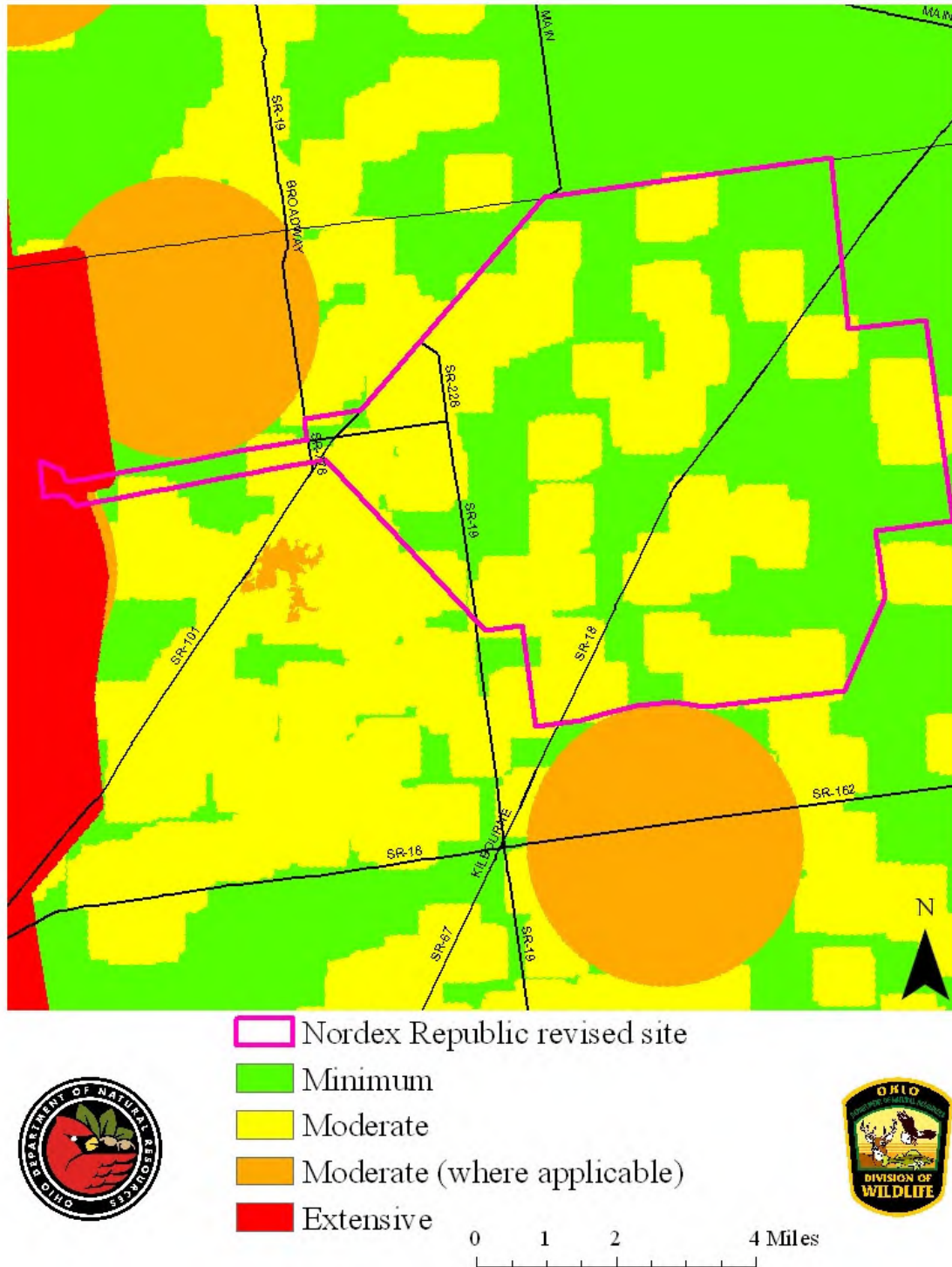


Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

DAVID MUSTINE, DIRECTOR

Figure 1. Survey effort map with revised boundary for Nordex's proposed Republic project.



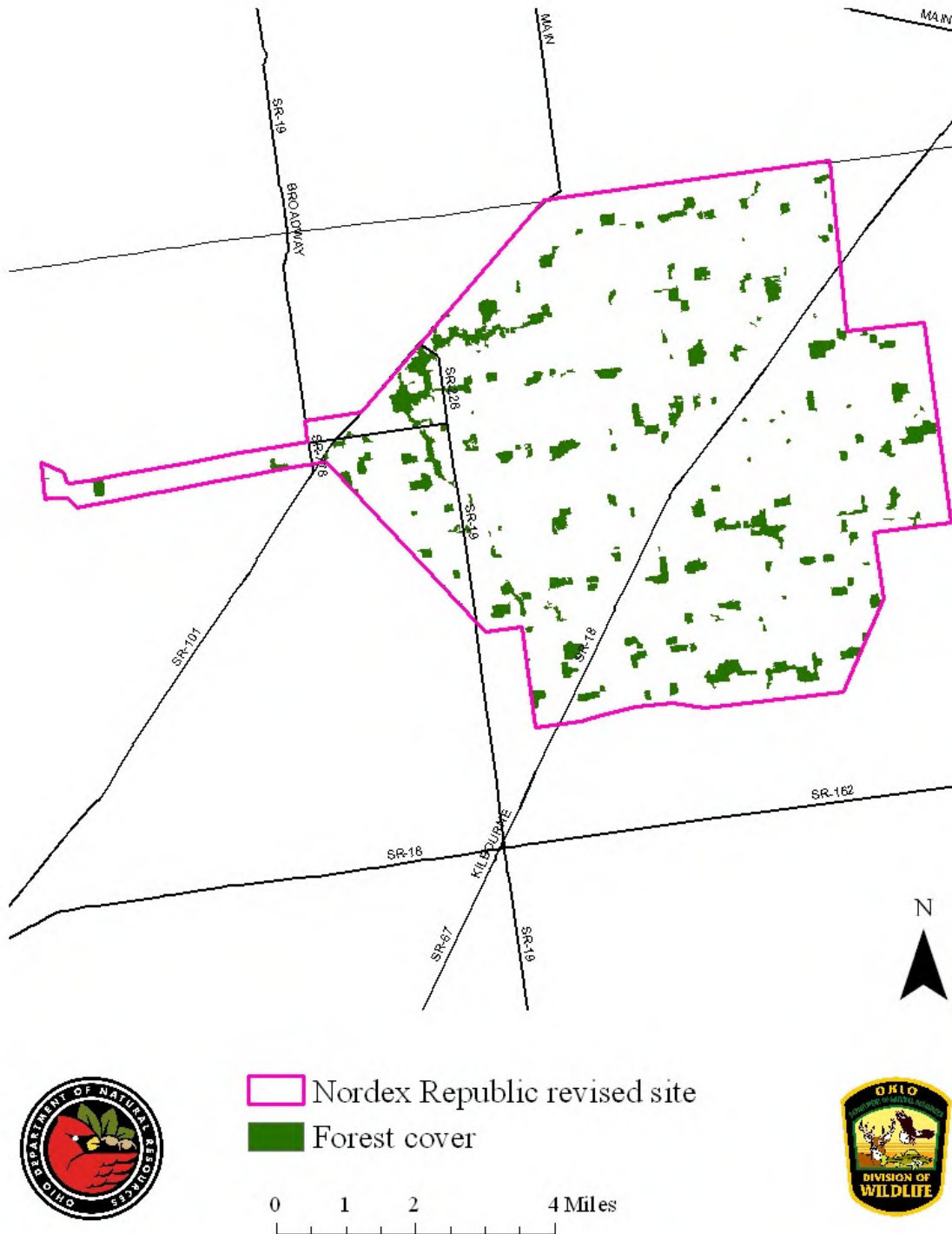


Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

DAVID MUSTINE, DIRECTOR

Figure 2. Forest cover map with revised boundary for Nordex's proposed Republic project.



From: [Mitch, Brian](#)
To: [Caspari, Laura](#)
Subject: 11-0070; Nordex USA, Republic Wind Project
Date: Monday, March 21, 2011 7:43:49 AM
Attachments: [oledata.mso](#)
[data.shx](#)
[data.dbf](#)
[data.prj](#)
[data.sbn](#)
[data.sbx](#)
[data.shp](#)



ODNR COMMENTS TO Laura Caspari, Nordex USA, 300 South Wacker Drive, Suite 1500, Chicago, Illinois 60606

Project: The project involves the installation of a 200mw wind farm consisting of approximately 80-90 turbines in the Townships of Thompson, Adams, Reed and Scipio in Seneca County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Fish and Wildlife: The ODNR, Division of Wildlife (DOW) has the following comments.

The project is within the range of the Eastern massasauga (*Sistrurus catenatus*), a state endangered and a federal candidate snake species. Due to the proposed location of the project, the project is not likely to impact this species.

The project is also within the range of the rayed bean (*Villosa fabalis*), a state endangered and federal proposed endangered mussel species. If there is a history of mussels near the proposed project area, it may be necessary for a professional malacologist approved by the DOW to conduct a mussel survey in the project area. If no in-water work is proposed, the project is not likely to impact this species.

Attached are a set of ArcView shape files with our Ohio Biodiversity Database records for the Republic Wind Farm project ('data') in Seneca County, Ohio, and on the Clyde, Watson and Fireside Quads. The files are projected in NAD83 Ohio State Plane South. The units are feet. This data will not be published or distributed beyond the scope of the project description on the data request form without prior written permission of the Biodiversity Database Program.

Records included may be for rare and endangered plants and animals, geologic features, high quality plant communities and animal assemblages. Fields included are scientific and common names, state and federal statuses, as well as managed area and date of the most recent observation. State and federal statuses are defined as: E = endangered, T = threatened, P = potentially threatened, SC = species of concern, SI = special interest, FE = federal endangered, FT = federal threatened and A=recently added to inventory, status not yet determined.

The project is within the range of the Indiana bat (*Myotis sodalis*), a state and federally endangered species. However, we have no records for Indiana bat (*Myotis sodalis*, state endangered, federal endangered) capture locations or hibernacula within a ten-mile radius of the project site.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Please note that although we inventory all types of plant communities, we only maintain records on the highest quality areas.

To help assess potential impacts to wildlife, including the Indiana bat and bald eagle, the following are survey recommendations previously provided to the applicant.

This project is 200 MW and will undergo review by the Ohio Power Siting Board (OPSB). Staff from the DOW have been in contact with the developers and provided survey recommendations. These surveys should be conducted prior to the company submitting an application to the OSPB. There are three bald eagle nests (*Haliaeetus leucocephalus*), a state threatened species, within 2.5 miles of the project area. One of these nests is within the project boundaries. Additionally, the DOW has recommended extensive monitoring efforts to the Nordex group at this site which include radar monitoring, bat mist-netting, raptor migration, passerine migration, bat acoustic monitoring, raptor nest searches, raptor nest monitoring, and breeding bird surveys. Additional information is needed from this group after they conduct their surveys for DOW to make any further recommendations.

Please note that wetlands known to contain an individual of or documented occurrences of federal or state-listed threatened or endangered plant or animal species are most likely considered high quality, Category 3 wetlands by the Ohio Environmental Protection Agency.

Geological Survey: The ODNR, Division of Geological Survey has the following comments.

Karst terrain is present in about half of the project area. In this terrain, the shallow limestone is intensely fractured and has numerous solution voids, sinkholes, and collapse basins. These conditions will pose a challenge to providing turbine sites with adequate foundation characteristics. Many areas of thick, soft lacustrine silt and clay in the area would also present foundation challenges. Bedrock varies from Devonian shales and limestones to Silurian dolomites. The applicant should contact the Division of Geological Survey for more detailed geologic information in this area.

The Division of Geological Survey requests that copies of all geotechnical boring logs be sent to the Division. These data will be valuable for refining the geologic knowledge of this complex area.

ODNR appreciates the opportunity to provide these comments. Please contact Brian Mitch at (614) 265-6378 if you have questions about these comments or need additional information.

Brian Mitch, Environmental Review Manager
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2045 Morse Road, Building E-3
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Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife

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Phone: (614) 265-6300

October 31, 2017

To all interested parties:

Based upon the project boundary map received October 2017 and further review of the project area, the Ohio Department of Natural Resources Division of Wildlife (DOW) has updated the June 8, 2011 initial survey recommendations for Apex's proposed Republic project located in Seneca and Sandusky counties regarding wildlife species.

The project should follow the "moderate" survey effort protocol as described within the "On-shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio." If the developer decides to amend the current boundaries, the DOW will revise our survey recommendations.

State-listed plant and animal species occur in Seneca and Sandusky counties and the list can be found here: <http://wildlife.ohiodnr.gov/species-and-habitats/state-listed-species/state-listed-species-#county#plants>. Additional surveys may be warranted to determine presence of state-listed species if construction will impact aquatic or wetland habitat. Once the turbine, road, pad and other infrastructure locations have been determined, please consult with DOW to determine if such surveys are needed.

The attached table summarizes the types and level of survey effort recommended by the DOW. Results from these studies will help assess the potential impact the turbines may pose and will influence our recommendations to the Ohio Power Siting Board.

If you have any questions, please feel free to contact me at erin.hazelton@dnr.state.oh.us or 614.265.6349.

A handwritten signature in blue ink that reads "ER Hazelton".

Erin Hazelton
Ohio Division of Wildlife
2045 Morse Road
Columbus, Ohio 43229

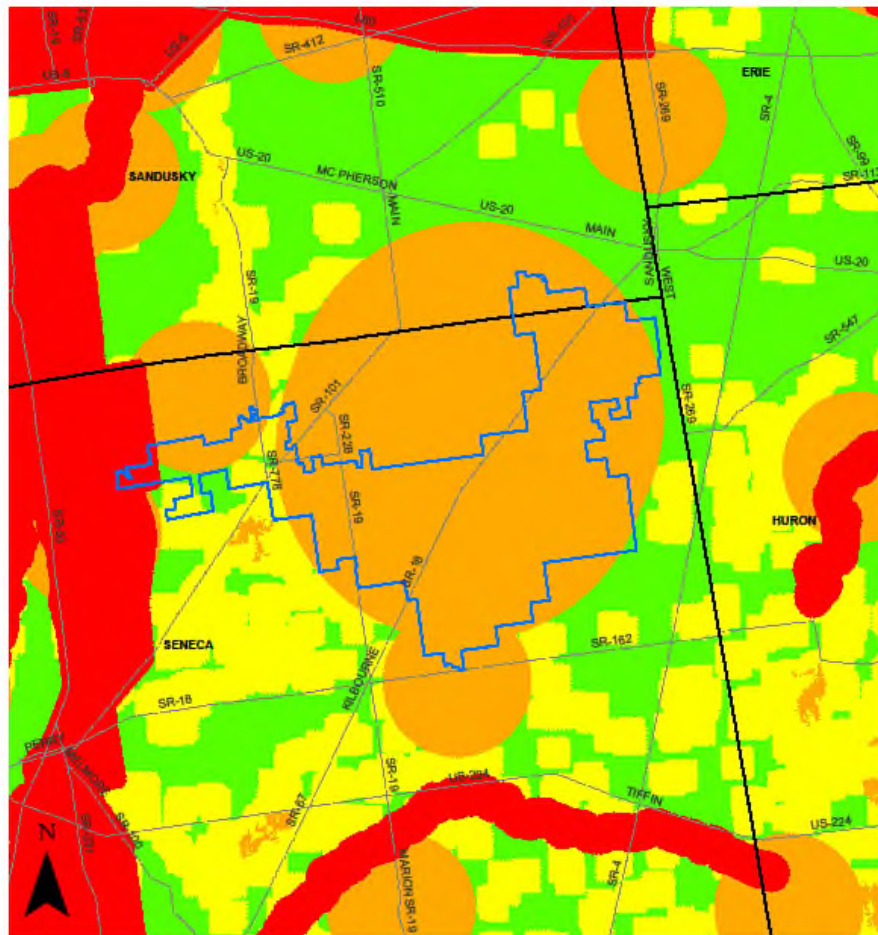
cc: Mr. Stuart Siegfried, Ohio Power Siting Board
Mr. Grant Zeto, Ohio Power Siting Board
Mr. Ashton Holderbaum, Ohio Power Siting Board
Ms. Megan Seymour, United States Fish and Wildlife Service
Ms. Kate Haley Parsons, DOW

Republic Wind Project (October 2017)

Survey type

Breeding bird	Breeding bird surveys should be conducted at all sites. The number of survey points may be based on the amount of available habitat, or twice the maximum number of turbines proposed for the site. If turbines are placed in agricultural land, this requirement may be waived by DOW after reviewing the proposed turbine locations.
Raptor nest searches	Nest searches should occur on and within a 1-mile buffer of the proposed facility.
Raptor nest monitoring	Please consult with USFWS on bald eagle nests located within the search area. Nests should be monitored to assess daily bird activity. Should any additional nests of a protected species of raptor be located during nest searches, monitoring should commence as outlined within DOW's monitoring protocols.
Bat acoustic monitoring	To be conducted at all meteorological towers.
Passerine migration survey points	9
Diurnal bird/raptor migration survey points	1
Sandhill crane migration (same points as raptor migration)	NS
Owl playback survey points	NS
Barn owl survey points	NS
Bat mist-netting survey points	18
Nocturnal marsh bird survey points	NS
Waterfowl survey points	NS
Shorebird migration survey points	NS
Radar monitoring locations	NS
Aquatic species surveys	This requirement may be waived by DOW after reviewing the proposed turbine/infrastructure locations.
Wetland species surveys	This requirement may be waived by DOW after reviewing the proposed turbine/infrastructure locations.

NS = Not required based on the lack of suitable habitat



- Republic Project
- Minimum
- Moderate
- Moderate (where applicable)
- Extensive

0 3 Miles



EH 10/31/2017

Survey effort map with the revised boundary for Apex's proposed Republic project (October 2017).



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

March 18, 2011

Laura Caspari
300 S. Wacker Drive
Suite 1500
Chicago, IL 60606

TAILS : 31420-2011-TA-0502

Re: Nordex Republic Wind Project, Seneca County

Dear Ms. Caspari:

This letter is in response to a meeting with the U.S. Fish and Wildlife Service (Service) on January 31, 2011 regarding the proposed wind power project in Seneca County, Ohio. The proposed project area appears to be a mix of agricultural land with scattered forested areas throughout. The proposed project is approximately 3 miles east of the Sandusky River Important Bird Area (IBA), which is located on the Sandusky River. However, it does appear that the proposed transmission line does extend approximately 1 mile into this IBA and ends right next to the Sandusky River. The proposed project also has a very large number of karst features throughout the project area, particularly on the east and northeast side of proposed project boundary. These areas could provide potential wintering habitat for bats. We understand the proposed project is approximately 200 MW including approximately 83 turbines. In addition, you have provided the Service and ODNR with a revised project boundary that included a proposed location of an approximate 4 mile transmission line that extends directly west of the central portion of the project. According to a revised letter from the Ohio Division of Natural Resources (ODNR) dated February 16 2011, the Division of Wildlife (DOW) has determined that the proposed facility would be classified as "extensive" site under the current monitoring protocols based upon the location of the transmission line. We understand that field surveys are planned for 2011.

The following comments are being provided pursuant to the Endangered Species Act (ESA), 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 wildlife issues, site selection, project design, and compliance with applicable laws. The Service has been working closely with ODNR Division of Wildlife to develop recommended survey protocols and site evaluations that will satisfy both state and federal wildlife statutes, and this letter describes these measures, in part. The protocols, "On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio" are available on ODNR's website at:

http://www.dnr.state.oh.us/Home/wild_resource/subhomepage/ResearchandSurveys/WildlifeWind/tabid/21467/Default.aspx

We encourage and appreciate your early coordination with both ourselves and ODNR, and recommend continued collaboration on this project to ensure wildlife issues are fully and appropriately addressed.

The 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 rotor-swept 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.

WATER RESOURCE COMMENTS:

The Service recommends that impacts to streams and wetlands be avoided, and buffers surrounding these systems be preserved. Streams and wetlands provide valuable habitat for fish and wildlife resources, and the filtering capacity of wetlands helps to improve water quality. Naturally vegetated buffers surrounding these systems are also important in preserving their wildlife-habitat and water quality-enhancement properties. Furthermore, forested riparian systems (wooded areas adjacent to streams) provide important stopover habitat for birds migrating through the region. The proposed activities do not constitute a water-dependent activity, as described in the Section 404(b)(1) guidelines, 40 CFR 230.10. Therefore, practicable alternatives that do not impact aquatic sites are presumed to be available, unless clearly demonstrated otherwise. Therefore, before applying for a Section 404 permit, the client should closely evaluate all project alternatives that do not affect streams or wetlands, and if possible, select an alternative that avoids impacts to the aquatic resource. If water resources will be impacted, the Buffalo Corps of Engineers should be contacted for possible need of a Section 404 permit.

ENDANGERED SPECIES COMMENTS:

Because of the potential for wind power projects to impact endangered bird, bat, 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 lies within the range of the **Indiana bat** (*Myotis sodalis*), a federally listed endangered species. Since first listed as endangered in 1967, their population has declined by nearly 60%. Several factors have contributed to the decline of the Indiana bat, including the loss and degradation of suitable hibernacula, human disturbance during hibernation, pesticides, and the loss and degradation of forested habitat, particularly stands of large, mature trees. Fragmentation of forest habitat may also contribute to declines. During the winter Indiana bats hibernate in caves and abandoned mines. Summer habitat requirements for the species are not well defined but the following are considered important:

1. Dead or live trees and snags with peeling or exfoliating bark, split tree trunk and/or branches, or cavities, which may be used as maternity roost areas.
2. Live trees (such as shagbark hickory and oaks) which have exfoliating bark.
3. Stream corridors, riparian areas, and upland woodlots which provide forage sites.

Indiana Bat Maternity Habitat

There are no positive records for Indiana bat captures within Seneca County and in addition, there are no records within 10 miles of the proposed project boundaries. According to the interim Indiana bat and wind guidance, if both of the following conditions are true for the proposed project, Indiana bat presence is very unlikely within and near the project area during the summer period, and it is unlikely that Indiana bats will be exposed to wind facility operations during the summer.

1. No suitable foraging or roosting habitat is in the project area or within 1,000 feet of the project area boundary
2. Commuting habitat (in the project area or within 1,000 feet of the project area boundary) is isolated from (i.e., more than 1000 feet), or if connected more than 2.5 miles from, suitable roosting or foraging habitat.

If both of these conditions are not met, further analysis is required to determine whether Indiana bats exposure is likely. The project areas appear to be a mix of agricultural land with scattered forested areas throughout, with a number of forested areas exceeding 100 acres. It appears that suitable summer foraging and roosting habitat for the Indiana bat likely exists within the project area.

Mist Net Surveys: Based on ODNR's On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio, a total of 22 mist net surveys have been requested for the proposed project boundary. The Service agrees that is an appropriate level of effort for the proposed project boundary. The surveys must be conducted by a permitted surveyor (see attached list) and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Survey effort should follow ODNR's protocols, which exceed the Service's standard protocol. The highest quality Indiana bat habitat areas within the project area should be selected for mist netting. Mature woodlots greater than 100 acres in size with permanent water sources should be the primary focus of mist net surveys. Service biologists would be happy to aid in identification and selection of suitable mist net sites, if necessary. We recommend that any Indiana bats captured, especially reproductively active females, be monitored through radio-tracking to determine roost locations and foraging patterns. If an Indiana bat is captured, this office shall be notified within 24 hours, or by the next business day.

Radio Transmitters: Up to four Indiana bats should be fitted with radio transmitters and tracked to roost site(s) and foraging areas until daily activity patterns are fairly well established, or as long as the transmitter remains attached and activated. Preference shall be given to tracking female bats, though one male Indiana bat may be tracked if captured prior to capturing four female Indiana bats. Please see the ODNR's protocols for additional information on radio tracking non-Indiana bats.

Acoustic Surveys: Bat acoustic monitoring is to be conducted at all meteorological towers within the project area. We recommend regular inspection of the AnaBat detectors throughout the survey period to ensure proper functioning.

The results of all bat surveys should be coordinated with this office prior to initiation of any work. Based on the results of the mist net survey, we will evaluate potential impacts to the Indiana bat from the proposed project. If sufficient information is not provided to document that take is unlikely, authorization of incidental take either through Section 7 or Section 10 of the Endangered Species Act of 1973, as amended, will be necessary.

Hibernacula Habitat

The project area lies within an area primarily underlain with Silurian and Devonian carbonate bedrock, indicating that the presence of caves is possible, and several identified karst areas are found within the project area. Please see the Ohio Department of Natural Resources, Division of Geological Survey Ohio

Karst Areas Map (www.dnr.state.oh.us/portals/10/pdf/karstmap.pdf), for additional information. If caves or sinkholes are present within the project area, we recommend further coordination with this office to determine if surveys of these areas are recommended.

Indiana Bat Migratory Habitat

Wind energy facilities in various habitat types across the U.S. and Canada have been documented to cause “widespread and often extensive fatalities of bats” (Arnett *et al.* 2008), primarily during the fall *migratory* season. Further, Indiana bat mortalities have been detected at a wind power facility in Indiana, confirming suspicions that migrating Indiana bats are also susceptible to mortality from wind turbines. At this time, research into the mechanisms that cause mortality of bats at wind power sites is still ongoing, and few operational tools exist to avoid and minimize take — feathering of turbines during times when bats are most at risk has been shown to reduce mortality in some situations. Based on this, we are advising all operating wind farms and wind farms in planning stages within the range of the listed bats that lethal take is a possibility without curtailment of operations at night during the migratory period regardless of whether summer habitat is present or if Indiana bats are detected during summer mist netting. Due to the potential of take during spring and fall migration, we recommend developers evaluate their exposure to the prohibitions of ESA. This is a risk management decision the developer must make. The Service advises you to consider the following two options to ensure violations of the Endangered Species Act (ESA) Section 9 take prohibition do not occur:

- 1) Feather turbines during low wind speed conditions at night during the fall and spring migratory seasons as a way to proactively and definitively avoid take of Indiana bats (and other species of bats as well). Based on the Indiana bat Draft Recovery Plan First Revision (Service, 2007), fall migration generally occurs between August 1 and October 15, and spring migration generally occurs between April 1 and May 15.
- 2) Wind facility developers can work with the Service to apply for an Incidental Take Permit by submitting a Habitat Conservation Plan (HCP), as required under Section 10 of the Endangered Species Act. A HCP can be used to address Indiana bat presence during both summer foraging and migration periods. A HCP does typically require some time and survey effort to complete. Alternatively, you may consider joining in the regional effort to develop a wind power HCP to address Indiana bats and other listed species.

If you plan to implement either of these two options, please contact us for further information.

The proposed project lies within the range of the **rayed bean** (*Villosa fabalis*), a freshwater mussel that is currently proposed for listing as federally endangered. The rayed bean is generally known from smaller, headwater creeks, but records exist in larger rivers. They are usually found in or near shoal or riffle areas, and in the shallow, wave-washed areas of lakes. Substrates typically include gravel and sand, and they are often associated with, and buried under the roots of, vegetation, including water willow (*Justicia americana*) and water milfoil (*Myriophyllum* sp.). Should the proposed project directly or indirectly impact any of the habitat types described above, we recommend that a survey be conducted to determine the presence or probable absence of rayed bean mussels in the vicinity of the proposed site. Any survey should be designed and conducted in coordination with the Endangered Species Coordinator for this office.

The project lies within the range of the **eastern massasauga** (*Sistrurus catenatus catenatus*), a docile rattlesnake that is declining throughout its national range and is currently a Federal Candidate species. The snake is currently listed as endangered by the State of Ohio. Your proactive efforts to conserve this species now may help avoid the need to list the species under the Endangered Species Act in the future. Due to their reclusive nature, we encourage early project coordination to avoid potential impacts to

massasaugas and their habitat. At a minimum, project evaluations should contain delineations of whether or not massasauga habitat occurs within project boundaries.

The massasauga is often found in or near wet areas, including wetlands, wet prairie, or nearby woodland or shrub edge habitat. This often includes dry goldenrod meadows with a mosaic of early successional woody species such as dogwood or multiflora rose. Wet habitat and nearby dry edges are utilized by the snakes, especially during the spring and fall. Dry upland areas up to 1.5 miles away are utilized during the summer, if available. For additional information on the eastern massasauga, including project management ideas, please visit the following website:

<http://www.fws.gov/midwest/Endangered/lists/candidat.html> or contact this office directly.

The proposed project lies within the range of the **Kirtland's warbler** (*Dendroica kirtlandii*), a federally listed endangered species. The Kirtland's warbler is a small blue-gray songbird with a bright yellow breast. This species migrates through Ohio in the spring and fall, traveling between its breeding grounds in Michigan, Wisconsin, and Ontario and its wintering grounds in the Bahamas. During migration, individual birds usually forage in low vegetation and stay in one area for a few days. This species may occur in Ohio in the spring from late April through May and in the fall from late August to early October. The ODNR has recommended 11 passerine migration surveys for the proposed project boundary. We strongly recommend that surveyors note any possible Kirtland's warbler detections during the passerine migration survey, and photo-document the detections if possible. Any sightings should be reported to the Service within 24 hours, or the next business day.

MIGRATORY BIRD COMMENTS:

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. While the MBTA has no provision for allowing unauthorized take, the FWS recognizes that some birds may be taken during activities such as wind turbine operation even if all reasonable measures to avoid take are implemented. The U.S. Fish and Wildlife Service's (FWS) Office of Law Enforcement carries out its mission to protect migratory birds not only through investigation and enforcement, but also through fostering relationships with individuals and industries that proactively seeks to eliminate their impacts on migratory birds. Although it is not possible under the MBTA to absolve individuals, companies, or agencies from liability (even if they implement avian mortality avoidance or similar conservation measures), the Office of Law Enforcement focuses on those individuals, companies, or agencies that take migratory birds with disregard for their actions and the law, especially when conservation measures have been developed but are not properly implemented.

At this time, we continue to encourage existing and proposed wind developments to follow current Service recommendations on wind power siting and construction (*Interim Guidelines to Avoid and Minimize Impacts from Wind Turbines – 2003*). The Service also encourages developers to coordinate with Service biologists regarding their projects. Proper coordination will help developers make informed decisions in siting, constructing, and operating their facilities. Additionally, the Service hopes to work cooperatively with wind developers to advance the state of the art of wind power siting, construction, and operation. Advancements in these areas will represent great strides towards the environmentally safe development of this otherwise renewable and clean source of energy.

The Service and ODNR DOW have worked together to develop a recommended bird survey protocol for wind turbine projects. The details of the protocol are provided in ODNR's On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio. ODNR has

documented that the project area qualifies for “extensive” survey effort due to the proximity to possible migratory bird high use areas. We recommend implementation of the ODNR bird survey protocol or alternatively, modification of the project boundary to avoid potential migratory bird high use areas and implementation of the “extensive” survey protocol. Bird survey results will be interpreted to determine if potential risk to birds is relatively high or low in various portions of the project area. Based on survey results we may make recommendations as to turbine placement and operation, or pre- or post-construction monitoring.

Research into the actual causes of bat and bird collisions with wind turbines is limited. To assist Service field staffs in review of wind farm proposals, as well as aid wind energy companies in developing best practices for siting and monitoring of wind farms, the Service published *Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines* (2003). On February 8, 2011, the U.S. Fish and Wildlife Service released the Draft Voluntary, Land-Based Wind Energy Guidelines that have now been published in the Federal Register and are now open for public comment until May 19, 2011. The Guidelines can be found at: <http://www.fws.gov/windenergy>. Until those guidelines are final, the Service recommends following the 2003 Interim Guidelines. We encourage any company/licensee proposing a new wind farm to consider the following excerpted suggestions from the guidelines in an effort to minimize impacts to migratory birds and bats.

- 1) Pre-development evaluations of potential wind farm sites to be conducted by a team of Federal and/or State agency wildlife professions with no vested interest in potential sites;
- 2) Rank potential sites by risk to wildlife;
- 3) Avoid placing turbines in documented locations of federally-listed species;
- 4) Avoid locating turbines in known bird flyways or migration pathways, or near areas of high bird concentrations. (i.e., rookeries, leks, State or Federal refuges, staging areas, wetlands, riparian corridors, etc.) Avoid known daily movement flyways and areas with a high incidence of fog, mist or low visibility;
- 5) Avoid placing turbines near known bat hibernation, breeding, or maternity colonies, in migration corridors, or in flight paths between colonies and feeding areas;
- 6) Configure turbine arrays to avoid potential avian mortality where feasible. (i.e., group turbines and orient rows of turbines parallel to known bird movements) Implement storm water management practices that do not create attractions for birds, and maintain contiguous habitat for area-sensitive species;
- 7) Avoid fragmenting large, contiguous tracts of wildlife habitat. Wherever practical, place turbines on lands already disturbed and away from intact healthy native habitats. If not practical, select fragmented or degraded habitats over relatively intact areas;
- 8) Minimize roads, fences, and other infrastructure. Wherever possible, align collection lines and access roads to minimize disturbance;
- 9) Develop a habitat restoration plan for the proposed site that avoids or minimizes negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. (i.e., avoid attracting prey animals used by raptors;
- 10) Use tubular supports with pointed tops rather than lattice supports to minimize bird perching and nesting opportunities. Avoid placing external ladders and platforms on tubular towers to minimize

perching/nesting. Avoid use of guy wires for turbine or meteorological tower supports. All existing guy wires should be marked with bird deterrents. (Avian Power Line Interaction Committee 1996);

11) If taller turbines (top of rotor-swept area is greater than 199 feet above ground level) require lights for aviation safety, the minimum amount of lighting specified by the Federal Aviation Administration (FAA) should be used. Unless otherwise requested by the FAA, only white strobe lights should be used at night, and should be of the minimum intensity and frequency of flashes allowable;

12) Adjust tower height to reduce risk of strikes in areas of high risk for wildlife;

13) Wherever feasible, place electric power lines underground or on the surface as insulated, shielded wire to avoid electrocution of birds. Use recommendations of the Avian Power Line Interaction Committee (1996) for any required above-ground lines, transformers, or conductors.

The full text of the guidelines is available at <http://www.fws.gov/habitatconservation/wind.pdf>. The Service believes that implementing these guidelines may help reduce mortality caused by wind turbines. We encourage you to consider these guidelines in the planning and design of the project. We particularly encourage placement of turbines away from any large wetland, stream corridor, or wooded areas, including the areas mentioned previously, and avoid placing turbines between nearby habitat blocks.

BALD AND GOLDEN EAGLE COMMENTS:

Bald and golden eagles are included under the Migratory Bird Treaty Act, but are afforded additional legal protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). The Service recently issued a final rule that authorizes issuance of eagle take permits, where the take to be authorized is associated with otherwise lawful activities. If take of bald eagles is likely, based on the best information available, a bald eagle take permit for this project will be necessary. We understand the original project boundary was adjusted to avoid a known bald eagle nest and the Service greatly appreciates this effort to conserve trust resources. However, there are still 3 bald eagle nests within 2 miles of the proposed project boundary, including the proposed transmission line. The closest nest is approximately 1 mile southwest of the end of the transmission line on the Sandusky River. In addition, there are also 20 bald eagle nests within 10 miles of the project boundary. Raptor nest searches and nest monitoring should be conducted in accordance with ODNR's extensive survey protocol to identify any raptors, including bald eagles that may nest in or near the project area. The results of this survey should be coordinated with this office.

On February 8, 2011, the U.S. Fish and Wildlife Service released the Draft Eagle Conservation Plan Guidance that have now been published in the Federal Register and are available for public comment until May 19, 2011. The Guidelines can be found at: <http://www.fws.gov/windenergy>. The Draft Eagle Conservation Plan Guidance was developed to provide interpretive guidance to wind developers, Service biologists who evaluate potential impacts on eagles from proposed wind energy projects, and others in applying the regulatory permit standards as specified by the Bald and Golden Eagle Protection Act and other federal laws. While this guidance is still draft, we believe that it deserves careful attention, as it lays out a proposed process for evaluating risk to eagles from wind power projects and developing an eagle conservation plan, in support of applying for a permit to authorize take. Appendix C of the Draft Eagle Conservation Plan Guidance suggests a monitoring protocol for wind projects. Monitoring data should be interpreted to document potential risk to eagles. If take of eagles is likely, a bald eagle take permit will be necessary.

COORDINATION OF SURVEY RESULTS:

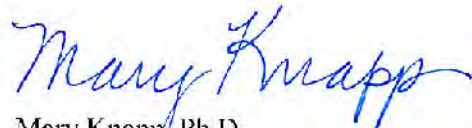
Please submit survey results to this office for review. Survey results will be interpreted to determine areas with relatively low bat and bird activity/diversity as opposed to areas with relatively high bat and bird activity/diversity. Based on the survey results, we may make recommendations as to turbine placement and operation, additional consultation under Section 7 or 10 of the Endangered Species Act of 1973, as amended, additional permits under the Bald and Golden Eagle Protection Act, or pre- or post-construction monitoring.

POST CONSTRUCTION MONITORING:

The Service recommends the project be monitored post-construction to determine impacts to migratory birds and bats. A specific post-construction monitoring plan should be prepared and reviewed by the Service and should include a scientifically robust, peer reviewed methodology of mortality surveys. We recommend that the post-construction monitoring protocol be developed based on the results of pre-construction monitoring, and look forward to working with the project proponent to develop this document.

Thank you for the opportunity to provide comments on this proposed project. If you have questions, or if we may be of further assistance in this matter, please contact Melanie Cota at extension 15 in this office or by email at Melanie_Cota@fws.gov or visit our website at <http://www.fws.gov/midwest/Ohio>.

Sincerely,



Mary Knapp, Ph.D.
Supervisor

Cc: Ms. Jennifer Norris, ODNR, Olentangy Wildlife Research Station, Ashley, OH
Mr. Brian Mitch, ODNR, REALM, Columbus, OH

Attachment: USFWS Permitted Indiana bat Surveyors in Ohio



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994
December 13, 2010

USFWS permittees for Indiana bat surveys in Ohio*

<p>ABR, Inc. – Environmental Research and Services Leslie Rodman P.O. Box 249 Forest Grove, OR 97116 (503) 359-7525 ext. 113 / FAX (503) 359-8875 lrodman@abrinc.com</p>	<p>Alliance Consulting Inc. T. Sydney Burke 124 Philpott Lane Beaver, WV 25813 (304) 255-0491 ext. 343 / FAX (304) 255-4232 sburke@aci-wv.com</p>
<p>Apogee Environmental Consultants, Inc. Joel Beverly P.O. Box 338 Ermine, KY 41815 (606) 633-7677 / FAX (606) 632-2626 apogee_env@bellsouth.net</p>	<p>Appalachian Technical Services P.O. Box 3537 6741 Indian Creek Road Wise, VA 24293 (276) 328-4200 / FAX (276) 328-4900 wise@atsone.com</p>
<p>BHE Environmental 11733 Chesterdale Road Cincinnati, OH 45246 (513) 326-1500 / FAX (513) 326-1550 ktyrell@bheenvironmental.com</p>	<p>Eric Britzke 112 Cherokee Trail Clinton, MS 39056 (870) 261-3666 Eric.R.Britzke@usace.army.mil</p>
<p>Timothy Carter Ball State University Department of Biology, CL 121 Muncie, IN 47306-0440 (765) 285-8842 / FAX (765) 285-8804 tcarter@bsu.edu</p>	<p>Civil & Environmental Consultants Katie Dunlap 8740 Orion Place, Suite 100 Columbus, OH 43240 (614) 710-0175 / (888) 598-6808 FAX (614) 540-6638 kdunlap@cecinc.com</p>
<p>Copperhead Environmental Consulting, Inc. P.O. Box 73 11641 Richmond Road Paint Lick, KY 40461 (859) 925-9012 mwgumbert@copperheadconsulting.com</p>	<p>3600 Park 42 Drive, Suite 130B Cincinnati, OH 45241-2072 (513) 985-0226 / (800) 759-5614 333 Baldwin Road Pittsburgh, PA 15205-9702 (412) 429-2324 / (800) 365-2324 FAX (412) 429-2114</p>

Davey Resource Group Jessica Hickey 1500 N. Mantua St., P.O. Box 5193 Kent, OH 44240-5193 (800) 828-8312 / FAX (330) 673-0860 jessica.hickey@davey.com	Ecological Specialties LLC William D. Hendricks 1785 Symsonia Road Symsonia, KY 42082 (270) 851-4362 / FAX (270) 851-4363 myotis@hughes.net
Ecology and Environment, Inc. Josh Flinn 55 Corporate Woods 9300 West 110 th St., Suite 645 Overland Park, KS 66210 (913) 339-9519 / FAX (913) 458-0972 jflinn@ene.com	Eco-Tech, Inc. Peter Lee Droppelman 1003 E. Main St. Frankfort, KY 40601 (502) 695-8060 / FAX (510) 695-8061 ldroppelman@ecotechinc.com
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J.F. New & Associates, Inc. Jeremy Sheets 708 Roosevelt Road Walkerton, IN 46574 (574) 586-3400 / FAX (574) 586-3446 jsheets@jfnew.com	Daniel Judy LPG Environmental and Permitting Services 1174 Camp Avenue Mount Dora, FL 32757 (352) 383-1444 djudy@lpgenvironmental.com
Robert Kiser 38 Kiser Lane Whitesburg, KY 41858	Andrew Kniowski 2021 Coffey Road 210 Kottman Hall Columbus, OH 43210 (540) 420-5213 kniowski.1@osu.edu
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Rodney McClanahan 265 Moss Lane Anna, IL 62906 (618) 658-1317 turkeyctr@earthlink.net	Mountain State Biosurveys, LLC Thomas Risch 6703 Ohio River Road Lesage, WV 25537 (304) 762-2453 www.mtnstatebio.com
Pittsburgh Wildlife & Environmental, Inc. Neil Bossart 853 Beagle Club Road McDonald, PA 15057 (724) 796-5137 nbossart@windstream.net	Redwing Ecological Services, Inc. Benjamin Deetsch 129 South Sixth Street Louisville, KY 40202 (502) 625-3009 FAX (502) 625-3077 kfuchs@rewing.win.net
Lynn Robbins Southwest Missouri State University Department of Biology 901 South National Avenue Springfield, MO 65804-0095 (417) 836-5366 FAX (417) 836-4204 lwr704f@smsu.edu	Stantec Consulting Services, Inc. Jeff Brown 11687 Lebanon Road Cincinnati, OH 45241 (513) 842-8205 / FAX (513) 842-8250 jeff.brown@stantec.com Bob Madej 1500 Lakeshore Drive, Suite 100 Columbus, OH 43204 (614) 486-4383 / FAX (614) 486-4387 robert.madej@stantec.com James Kiser 1901 Nelson Miller Parkway Louisville, KY 40223 (502) 212-5000 / FAX (502) 212-5055 james.kiser@stantec.com
Merrill Tawse 791 Woodland Road Mansfield, OH 44906 (419) 756-1203 / cell (419) 989-2335 mtawsebats@yahoo.com	
Third Rock Consultants, LLC Rain Storm 2514 Regency Rd., Suite 104 Lexington, KY 40503 (859) 977-2000 / FAX (859) 977-2001 mforee@thirdrockconsultants.com	John Timpone 427 Terrington Drive Ballwin, MO 63021 (417) 894-5554 wanderingwolverine13@yahoo.com
Tragus Environmental Consulting Mike Johnson Endangered Species Consultants 37 North Highland Avenue Akron, OH 44303 (330) 472-7013 mike@tragusinc.com	Brianne Lorraine Walters Dept. of Ecology and Organismal Biology Indiana State University Terre Haute, IN 47809 (812) 237-8294 / FAX (812) 237-2526 bwalters2@isugw.indstate.edu

Western Ecosystems Technology, Inc. Stephen Brandebura 2003 Central Avenue Cheyenne, WY 82001 (307) 634-1756 / FAX (307) 637-6981 sbrandebura@west-inc.com	John O. Whitaker, Jr. Department of Life Sciences Indiana State University Terre Haute, IN 47809 (812) 237-2383 / FAX (812) 237-2526 jwhitaker3@isugw.indstate.edu
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*This list reflects permit data available as of December 13, 2010, and is subject to periodic revision to reflect permit changes

From: [Jennie Geiger](#)
To: ["Lott, Keith"; Jennifer.Norris@dnr.state.oh.us](#)
Cc: [Dave Phillips](#); [Scott Hawken](#); [John Arehart III \(john.arethart@apexcleanenergy.com\)](#); [Dalton Carr](#)
Subject: BUSINESS CONFIDENTIAL: Apex-Long Prairie Meeting Follow-Up
Date: Thursday, December 10, 2015 1:06:06 PM
Attachments: [Long Prairie Meeting Summary FINAL 2015-12-10.pdf](#)
[image001.png](#)

Hi Keith and Jenny –

Attached is the summary of our December 3, 2015 meeting, including the presentation. If you have comments on the meeting summary, or find that edits are needed, please let me know and I will revise accordingly before finalizing. Otherwise, if you could confirm that the summary accurately reflects our discussion and your recommendations at this time, that would be much appreciated.

Thanks,
Jennie

JENNIE GEIGER
Environmental Permitting Manager

Apex Clean Energy, Inc.
310 4th St. NE, Suite 200, Charlottesville, VA 22902
office: 434-260-6982 | cell: 720-320-9450 | fax: 434-220-3712
jennie.geiger@apexcleanenergy.com | www.apexcleanenergy.com



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REPUBLIC WIND PROJECT - AGENCY MEETING SUMMARY

Meeting Attendees: Keith Lott, USFWS
Jennifer Norris, ODNR
Jennie Geiger, Apex
John Arehart, Apex
Dalton Carr, Apex
Dave Phillips, Apex (by phone)

Prepared by: Apex

Date: December 10, 2015

On December 3, 2015, Apex Clean Energy (Apex) met with the U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources (ODNR) to discuss the proposed Republic Wind Project (Project) located in Seneca County, Ohio. The purpose of this meeting was to update the agencies on Project status, discuss Tier 3 studies completed to date, and agree upon next steps. The meeting was held at the USFWS Office in Columbus, Ohio. The attached Powerpoint presentation was discussed and the following is a summary of the topics discussed.

Avian Studies: The group agreed that avian studies conducted to date meet ODNR requirements and are sufficient to adequately assess and respond to avian risk. There was agreement that these data demonstrate this is a low risk site in regards to eagles and that a take permit was not warranted; however, general risk reduction measures (e.g., carrion removal, operations staff training) and post-construction monitoring to confirm low risk conclusions were appropriate.

Bats: The group agreed that studies conducted to date meet ODNR requirements and are sufficient to adequately assess and respond to risk to bats. USFWS indicated that a Technical Assistance Letter (TAL) could be issued for the Project in response to Apex committing to implement impact avoidance measures to avoid risk to federally-listed bats. The group discussed the merits of analyzing bat telemetry data collected during mist net surveys to determine if federally-listed bats were inactive in certain conditions during summer (e.g., windspeed, precipitation, distance from habitat, etc.) and potentially incorporate a reduced windspeed or weather variable into the curtailment being considered during summer.

Other: Although impacts to state-protected species are not expected to be significant, ODNR encouraged the implementation of a Voluntary Cooperation Agreement between the Project and ODNR to address liability associated with potential take of protected wildlife. No additional studies are recommended by USFWS and ODNR to determine appropriate impact avoidance measures and for the Project to proceed through the Ohio Power and Siting Board permitting process.

Action Items:

- Apex will review the ODNR Voluntary Cooperation Agreement and work with ODNR to reach agreement on content.
- Apex will send a TAL term sheet to USFWS for review as soon as possible.

Jennie Geiger

From: Lott, Keith <keith_lott@fws.gov>
Sent: Wednesday, February 24, 2016 9:05 AM
To: Dave Phillips
Cc: Jennie Geiger; John Arehart III; Dalton Carr
Subject: Re: BUSINESS CONFIDENTIAL: Republic Wind Project Follow-Up

Dave et al.,

Typically we use a 5 mile buffer for instances where the maternity roost tree has not been located. Which is this case with this project. Then I went back and looked at our "Indiana Bat Section 7 and Section 10 Guidance for Wind Energy Projects", which appears to run contrary to our general office guidance. Within that document it says that "all suitable habitat within 2.5 miles of the line drawn between the two documented roost trees unless the distance between the capture location(s) and roost tree is larger. In that case, use the longer distance to create the polygon."

Because at least 2 roost trees were identified during both the 2011 and 2015 surveys I'll revised the buffer size to 2.5 miles within our database.

Keith

On Wed, Feb 24, 2016 at 8:02 AM, Dave Phillips <dave.phillips@apexcleanenergy.com> wrote:

Hi Keith,

Thanks for this information. However, I don't understand your expectation for curtailment within 5 miles of the Indiana bat capture during summer. Can you please explain the basis for this recommendation, as it is entirely inconsistent with other states in Region 3 and seems overly conservative, especially given the telemetry data we have for the Indiana bat captured at this site last year, in which all locations are within an area less than 1sq. mi.

Thanks, Dave

DAVE PHILLIPS

office: [434-282-2104](tel:434-282-2104) | cell: [434-906-9127](tel:434-906-9127)

dave.phillips@apexcleanenergy.com



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From: Lott, Keith [mailto:keith_lott@fws.gov]
Sent: Wednesday, February 24, 2016 7:25 AM
To: Jennie Geiger <jennie.geiger@apexcleanenergy.com>
Cc: Dave Phillips <dave.phillips@apexcleanenergy.com>; John Arehart III <john.arehart@apexcleanenergy.com>; Dalton Carr <dalton.carr@apexcleanenergy.com>
Subject: Re: BUSINESS CONFIDENTIAL: Republic Wind Project Follow-Up

Jennie,

We've been discussing Technical Assistance Letter (TAL) components within the region recently, and also have discussed them with ODNR relative to several wind projects in Ohio.

Below we present our final recommendations for obtaining a TAL from the Service for Republic. We request that you incorporate these components into a letter and send it to our office. We are prepared to respond quickly with a TAL response letter. Note that technical assistance letters are intended to document measures to **avoid** take of Indiana bats (and Northern long-eared bats, though take for this species is currently exempted under a 4(d) rule). The measures described below should result in avoidance, based on the best scientific information we have available relative to Indiana bat biology and impacts to Indiana bats from wind projects in Northwest Ohio and elsewhere. If you were to instead develop an HCP and obtain an incidental take permit, some take would be allowed to occur, thus the below measures could be negotiated. To date we have issued three TA letters in Ohio, and all have the same measures in order to avoid take of Indiana bats during migration. I have added a separate bullet for summer that was not included in the other TALs since they did not have summer risk. Please let me know if you have questions.

Keith

- Cut-in speed should be set at 6.9 m/s in spring and fall (see dates below). This is the speed at which the Service has determine that take of Indiana bats during migration is unlikely to occur based on Indiana bat morphology, behavior, and bat mortality rates at cut-in speed studies at existing wind projects.
- Spring dates should be **March 15-May 15**. We reviewed OH and IN data on Indiana bat spring migration and arrival at maternity colonies. This data showed that Indiana bats arrive at maternity colonies in IN and OH as early as the first week in April. This was documented at multiple sites and in multiple years, and so we assume migration can occur earlier than April 1. These "spring" dates are consistent with what Indiana is recommending in their TA letters. The single spring Indiana bat mortality was documented on April 14, and this date range incorporates this mortality.
- Fall dates should be **Aug. 1-Oct. 31**. We reviewed OH and IN data on Indiana bat departure from maternity colonies. This data showed that individual Indiana bats may stay at maternity colonies into late October. This was documented at multiple sites and in multiple years, and so we assume that migration can occur later into October. Further, Indiana bat fall mortalities have been detected on the following dates: Sept. 26, Sept. 11, Sept. 18, Oct. 3, and Oct. 10. When considering all-bat mortality, it is clear from post-construction studies in Ohio that monthly bat mortality rates vary between years. This may be related to weather patterns. Thus, all bat and Indiana bat migration may occur later in the year if warmer weather occurred later into Oct. Thus, we believe it is appropriate to extend the fall migration season through the end of October. **Very little bat mortality has been detected in**

Nov. at any of the wind projects in Northwest Ohio. Typically we assume Indiana bats have arrived at their hibernaculum by Nov, and thus would not be at risk at this project location in Nov.

- Technical assistance letters are intended to document measures to avoid take of Indiana bats. The Service does not have data indicating temperature thresholds at which Indiana bats are not active during the spring and fall migration periods. Thus temperature thresholds are not appropriate. This is consistent with the approach in TA letters issued by other states.
- Cut-in speeds should be implemented from 1/2 hr before sunset to 1/2 hr after sunrise. This is consistent with the approach in TA letters issued by other states.
- Monitoring will be necessary to document avoidance of take. ODNR currently requires up to 2 years of post-construction monitoring using their protocol. This is sufficient for the first two years of implementation of the TAL. Monitoring beyond 2 years will be determined at a later date based on the effectiveness of TAL in avoiding take during the first 2 years.
- Because Republic has documented Indiana bats within the project area during the summer, to avoid take of Indiana bats that may occur during summer, thus the 6.9 m/s cut-in speed should also be used from May 15 - July 31 for those areas within the 5-mile buffer of the capture location. This should be sufficient to avoid take of summering Indiana bats.

On Mon, Feb 22, 2016 at 2:21 PM, Jennie Geiger <jennie.geiger@apexcleanenergy.com> wrote:

Hi Keith -

Thanks for taking the time to speak with me last week and providing FWS guidance to ensure take of federally listed bats does not occur at our Republic Wind Project. As agreed, Apex will feather blades below wind speeds of 6.9 m/s from 30 mins before sunset to 30 mins after sunrise at all turbines during migration (Apr 1-May 31 and Aug 1-Oct 31), and at turbines within 2.5 miles of identified Indiana bat (IBAT) maternal roost trees during summer (Jun 1-Jul 31). Apex reached out to Copperhead Consulting for their technical expertise on the IBAT roost trees, and they confirmed that the trees were maternal in nature and that a 2.5 mile curtailment buffer was well within industry standards.

Apex will conduct any necessary tree clearing within 2.5 miles of identified IBAT roosts between Nov 1 and Mar 31, and within 150 feet of northern long-eared bat roosts between Aug 1 and May 31, to avoid impacts to roosting bats. We will also provide you with information on impacts to forested areas once the layout is complete so FWS can assess potential impacts of clearing habitat on the species.

Please review and let me know that I have captured our discussion accurately. If you have any questions or need additional information at this time, please don't hesitate to contact me.

Thanks,
Jennie

JENNIE GEIGER
Environmental Permitting Manager

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[cid:image001.png@01CE6DB9.0BF695D0]<<http://www.apexcleanenergy.com>/>

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Keith Lott

Wildlife Biologist

U.S. Fish and Wildlife Service

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From: [Lott, Keith](#)
To: [Jennie Geiger](#)
Cc: [Dave Phillips](#); [John Arehart III](#); [Dalton Carr](#)
Subject: Re: BUSINESS CONFIDENTIAL: Republic Wind Meeting Follow Up
Date: Monday, August 29, 2016 8:23:05 AM
Attachments: [Republic Wind interest distance 8292016.pdf](#)

Jennie et al.,

This morning I edited our eagle nest layer to reflect changes from your survey. The new 1/2 eagle nest distance is 1.00 miles. There are two nests within the buffer (one confirmed, one unconfirmed) and three nests right along the border (map attached).

As for the Indiana bat roost, since multiple roost trees were identified, but none were the primary roost tree, we'll average the location of the two identified roosts (-82.9447775, 41.21847). There will be a 2.5 mile buffer on this average roost.

Let me know if you have any questions.

Keith

On Wed, Aug 24, 2016 at 8:46 AM, Jennie Geiger <jennie.geiger@apexcleanenergy.com> wrote:

Hi Keith -

Attached are the following:

- a summary of our August 17, 2016 meeting, including a copy of the PPT presentation
- shapefiles for the revised project boundary
- shapefiles from our 2016 eagle nest surveys

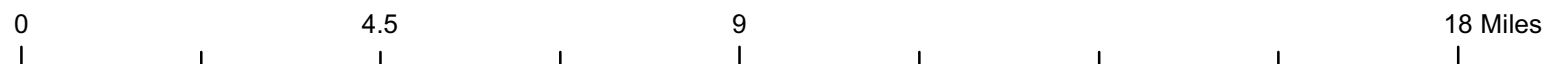
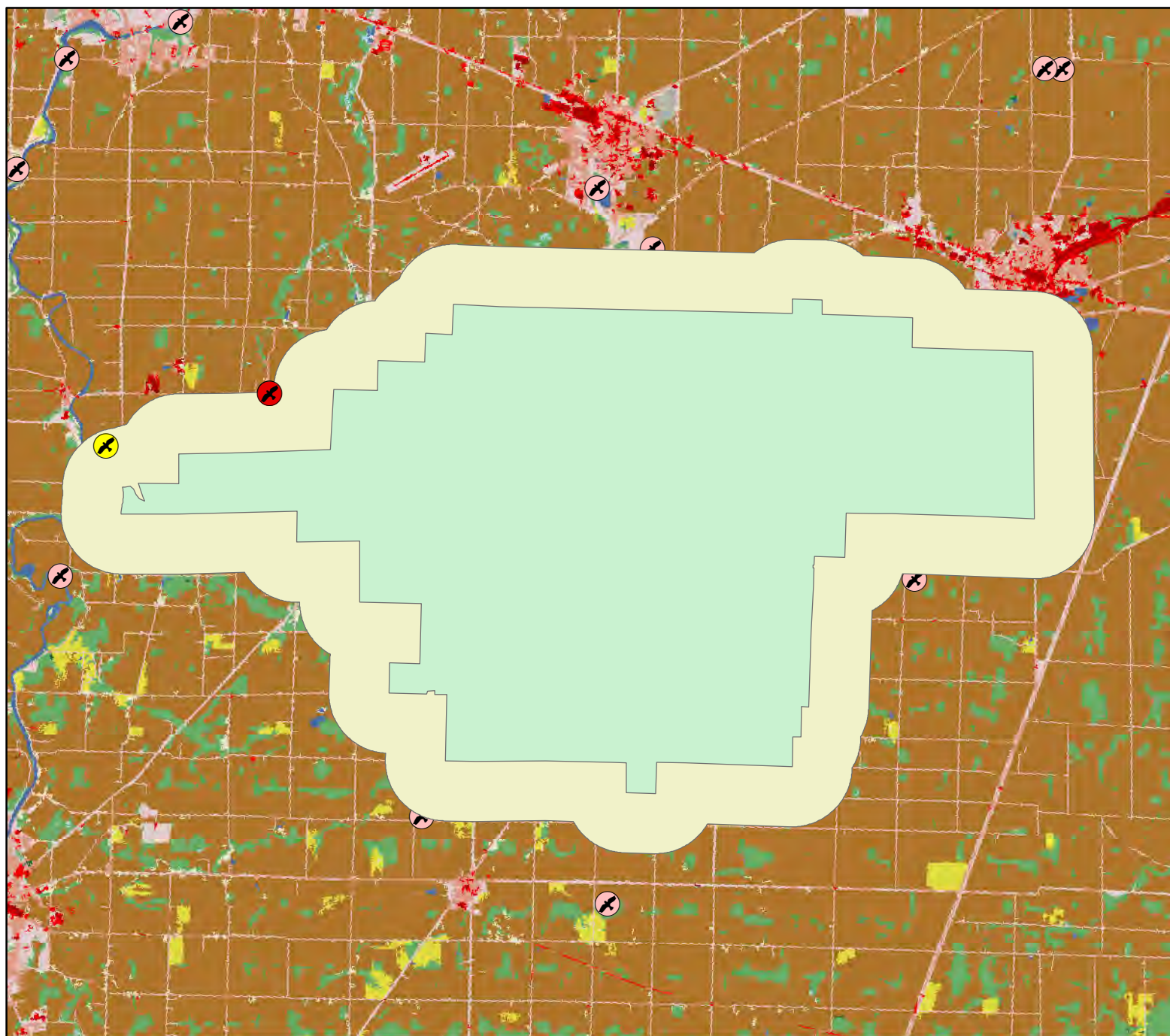
Please let me know if you have comments on the meeting notes or need additional information at this time.

Also, could you please provide us with a shapefile of the Indiana bat roost buffer that you are utilizing for this project along with any new eagle nests and the re-calculated ½ eagle inter-nest distance for our use in designing the project?

Thanks,
Jennie

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Republic_eagle_nest_within_buffer_8_29_2016

Status



Confirmed



Unconfirmed

REP_ProjectBoundary_20160818

Republic_eagle_nest_buffer_8_29_2016

Bald eagle nest

Status



Confirmed



Unconfirmed

REPUBLIC WIND PROJECT - MEETING SUMMARY

Meeting Attendees: Keith Lott, USFWS
Jennifer Norris, ODNR
Dave Kohler, ODNR
Katie Parsons, ODNR
Dave Phillips, Apex
Jennie Geiger, Apex
Dalton Carr, Apex
Sarah Moser, Apex

Notes Prepared by: Apex

Date: August 23, 2016

On August 17, 2016, Apex Clean Energy (Apex) met with the U.S. Fish and Wildlife Service (USFWS), and Ohio Department of Natural Resources (ODNR) to discuss the Republic Wind Project in Seneca County, Ohio. The purpose of the meeting was to present a revision to the project boundary, discuss the results of additional bat studies completed to date, and agree on any necessary next steps to complete in advance of submittal of an Ohio Power Siting Board (OPSB) permit application. The meeting was held at the USFWS Office in Columbus, Ohio. The attached Powerpoint presentation was provided and the following is a summary of the topics discussed.

Avian Studies: It was agreed that avian studies conducted to date are sufficient to adequately assess the revised area and respond to avian risk for purposes of OPSB permit submittal. The group agreed that siting turbines a minimum of ½ inter-nest distance from existing eagle nests is appropriate to minimize risk to the species and that no take permit is warranted. USFWS indicated that they will provide locations of additional eagle nests near the project and re-calculate the ½ inter-nest distance setback recommendation based on the revised project boundary. USFWS will review the revised boundary and provide additional avian recommendations, if warranted.

Bats: Apex reviewed existing bat information and presented results from the 2016 mist-net bat surveys. The group agreed that studies conducted to date meet ODNR and USFWS requirements and are sufficient to adequately assess and respond to risk to bats in the revised project area for purposes of OPSB permit submittal. Avoidance and minimization measures recommended by USFWS in an email dated February 24, 2016 to avoid take of Indiana bats and northern long-eared bats were discussed and confirmed. USFWS stated they will issue a technical assistance letter (TAL) upon receiving a term sheet from Apex committing to implement these measures, as outlined below:

- Feather all turbines at winds up to 6.9 m/s from 30 mins before sunset to 30 mins after sunrise during spring (Mar 15 – May 15) and fall (Aug 1 – Oct 31) migration.
- Feather turbines within 2.5 miles of the Indiana bat roost location at winds up to 6.9 m/s from 30 mins before sunset to 30 mins after sunrise during summer (May 16 – Jul 31).
- Conduct post-construction monitoring in accordance with ODNR guidelines.

In addition to the terms outlined above, it was agreed that any necessary tree clearing will be conducted as follows to avoid impacts to roosting bats:

- Minimize tree clearing, and clear trees if necessary:
 - From Oct 1 – May 31 within 2.5 miles of the Indiana bat roost location identified within the project (see PPT slide 7).
 - From Aug 1 – May 31 within 150 feet of identified northern long-eared bat roosts (see PPT slide 7).

Other: Apex and ODNR discussed some aspects of the Voluntary Cooperation Agreement. Apex indicated that it would provide ODNR edits for discussion.

Action Items:

- Apex to provide shapefiles of the revised boundary to ODNR and USFWS.
- USFWS to recalculate ½ inter-nest distance based on current eagle nest data and provide recommendations.
- Apex to provide comments to ODNR on the Voluntary Cooperation Agreement.

From: Jennie Geiger
To: [Dave Phillips \(dave.phillips@apexcleanenergy.com\)](mailto:dave.phillips@apexcleanenergy.com)
Subject: FOR REVIEW: Email to ODNR on REP
Date: Wednesday, February 22, 2017 12:11:00 PM
Attachments: [Republic_USFWS_ODNR_Meeting_Summary_2016-08-23.pdf](#)
[image001.png](#)

Hi Kate –

Thank you for the call today. Attached are the meeting notes from our August 17, 2016 meeting with USFWS and ODNR on the Republic Wind Project for your records. As I mentioned on the phone, there have been some minor adjustments to the Project boundary since the August meeting. I will send you the revised boundary as soon as it is finalized for your review and final comment.

Thanks,
Jennie

JENNIE GEIGER
Environmental Permitting Manager

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Jennifer Norris, ODNR
Dave Kohler, ODNR
Katie Parsons, ODNR
Dave Phillips, Apex
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Sarah Moser, Apex

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From: [Lott, Keith](#)
To: [Jennie Geiger](#)
Subject: Re: Republic Wind Follow Up
Date: Friday, March 3, 2017 11:14:14 AM

Jennie,

That is correct. Based upon the project area maps that we have been provided, this project falls outside of areas where we have known occurrences or what we consider suitable habitat for the eastern massasauga.

Keith

On Fri, Mar 3, 2017 at 10:59 AM, Jennie Geiger <jennie.geiger@apexcleanenergy.com> wrote:

Hi Keith -

As a follow up to our phone call yesterday, this email is to confirm that the eastern massasauga is not a species of concern within the Republic Wind Project and surveys are not necessary.

Thanks,
Jennie

JENNIE GEIGER
Environmental Permitting Manager

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[cid:image001.png@01CE6DB9.0BF695D0]<<http://www.apexcleanenergy.com/>>

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Fax: (614) 416-8994

Jennie Geiger

From: Lott, Keith <keith_lott@fws.gov>
Sent: Thursday, June 29, 2017 6:47 AM
To: Jennie Geiger
Subject: Re: Responses regarding eagle questions

Jennie,

I calculated the revised 1/2 inter-nest distance this morning. Based on the revised project boundary the new value is 1.17 miles.

Keith

On Mon, Jun 26, 2017 at 9:18 AM, Jennie Geiger <jennie.geiger@apexcleanenergy.com> wrote:

Thanks Keith – sorry about that! Please see attached.

JENNIE GEIGER

office: 434-260-6982 | cell: 720-320-9450

jennie.geiger@apexcleanenergy.com



From: Lott, Keith [mailto:keith_lott@fws.gov]
Sent: Monday, June 26, 2017 8:37 AM
To: Jennie Geiger <jennie.geiger@apexcleanenergy.com>
Subject: Re: Responses regarding eagle questions

Jennie,

I'd be happy to recalculate the new inter-nest distance, but I need a shapefile of the new project boundary, instead of a PDF.

Thanks,

Keith

On Thu, Jun 22, 2017 at 4:51 PM, Jennie Geiger <jennie.geiger@apexcleanenergy.com> wrote:

Hi Keith –

Thank you for your email. As requested, I have attached a map of the current Republic boundary and the location of all known eagle nests in proximity to the Project. The new nest in the NW portion of the Project is still within the official Project boundary; however, no turbines are planned within 1.9 miles of the nest. We were unable to completely remove the nest from the boundary as we are still considering two transmission line options, one of which would run along the western boundary of the parcel where the nest is located (approximately 0.4 miles from nest).

Based on the ½ inter-nest setbacks that we have implemented around all nests, and the low use of the site by eagles as illustrated through previous Stage 2 surveys, we consider this a low risk site to eagles with no permit warranted and no further surveys warranted. If you disagree, please let me know. Also, can you please recalculate the ½ inter-nest distance based on the discovery of the new nest to inform our new setbacks?

Thanks,

Jennie

JENNIE GEIGER

office: 434-260-6982 | cell: 720-320-9450

jennie.geiger@apexcleanenergy.com



From: Lott, Keith [mailto:keith_lott@fws.gov]
Sent: Thursday, May 25, 2017 9:27 AM
To: Jennie Geiger <jennie.geiger@apexcleanenergy.com>
Subject: Responses regarding eagle questions

Jennie,

I got your message regarding how Apex plans on changing their project boundary in response to the discovery of a new eagle nest in the western portion of the project. When they are available I'd still like to see a map of the revised project boundary and the location of the new nest. I did talk to Chris Mensing from our East Lansing Field Office, he's directly involved in the eagle protocols and is willing to meet with Apex once we assess the revised project boundary and it's relationship to the new nest.

Regarding Long Prairie, I think the level of survey effort within the previous boundary continues to be sufficient to assess risk, as long as nothing has changed (e.g., a new nest has been established near the project). I would recommend a nest survey new portion of the project area as well.

Let me know if you have any questions.

Keith

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Keith Lott

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U.S. Fish and Wildlife Service

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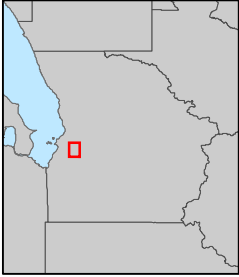
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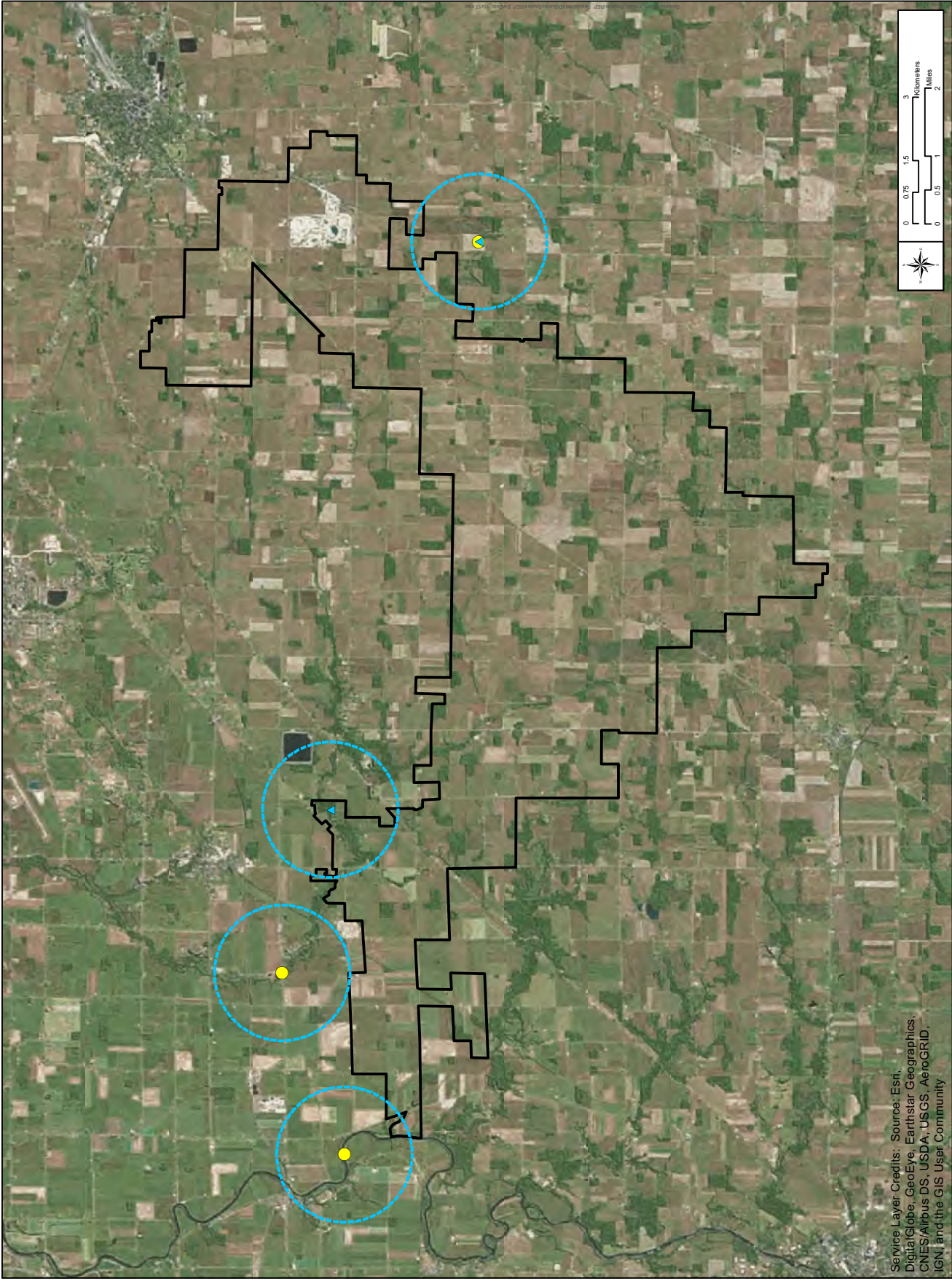
Fax: (614) 416-8994



Republic: Eagle Nests

- ▲ 2017 BAEA Nest
- 2016 BAEA Nest
- 1/2 Inter-nest distance (1.00 mi)
- Project Boundary

Date: 4/2/2017 Author: SML
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Case No(s). 17-2295-EL-BGN

Summary: Application Exhibit J Appendix D electronically filed by Teresa Orahood on behalf of Sally W. Bloomfield