Development of a Multi-Species Habitat Conservation Plan for Wind Energy Development in the Midwest

(Midwest Region Wind Energy MSHCP)

Cooperative Endangered Species Conservation Fund
Section 6 of the Endangered Species Act

Submitted by the States of:

Indiana, Ohio, Michigan, Missouri, Iowa

August 19, 2009

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PROJECT STATEMENT

A coalition of eight states, including Indiana, Ohio, Michigan, Iowa, Missouri, Illinois, Wisconsin, and Minnesota, which together comprise Region 3 of the U.S. Fish and Wildlife Service (Service), propose to develop a Multi-Species Habitat Conservation Plan (MSHCP) and incidental take permitting program for 30 federally listed species whose ranges include the aforementioned states and that may be impacted by future wind energy development.

The purpose of the MSHCP is to provide conservation benefits to listed species while accommodating future wind energy development, including siting, construction, operation, and maintenance of wind energy installations and ancillary facilities across the Midwest Region for a 30-year planning period. It represents an innovative approach to provide for both enhanced conservation of listed species and streamlined regulatory compliance requirements for future wind energy projects. It will provide a means for wind energy developers and operators to avoid, minimize, mitigate, and compensate for adverse effects to covered species. It will satisfy applicable provisions of the ESA pertaining to federally listed species protection, and will improve permitting efficiency for existing and future wind energy developments by providing a predictable regulatory process under which wind energy projects can proceed.

BACKGROUND

During his Inaugural Address, President Obama signaled the role wind energy will play in his administration, by stating: “We will harness the sun and the winds and the soil to fuel our cars and run our factories.” He was followed in his statement by Missouri Governor Jay Nixon who on July 28, 2009 said, “Missourians know that in order for us to grow our state’s economy and create the jobs of the twenty-first century, we must embrace new technology and advances like the ones presented to us through renewable wind energy.” Missouri posted the fastest growth rate in wind development of any state during the 2nd quarter of 2009 according to the American Wind Energy Association (AWEA); wind power installations expanded in the state by 90%. This trend will only continue as the Department of Energy has reported that wind power is

expected to provide 20% of the nation's electricity by 2030. An estimated 16,000 new wind turbines may be constructed in the U.S. in the next decade, adding to the existing 15,000 (Manville 2005).

Wind resources are suitable on various lands throughout the United States. Of the top ten states adding new wind capacity in 2009, three of those states were in FWS Region 3, namely Iowa, Missouri, and Minnesota, and the trend is expected to continue. In fact, some of the windiest areas within the Great Lakes region encompass the ecologically sensitive Great Lakes shorelines, which provides critical nesting habitat for the federally-endangered piping plover and stop-over habitat for a number of migratory songbirds of concern, including the federally-endangered Kirtland's warbler. Further, many areas suitable for wind power development in the Midwest region are part of the core maternity range of the Indiana bat.

Within the Midwest region, numerous state and/or local government agencies are vested with some regulatory authority over wind energy activities. Unfortunately, most regulatory programs are not carried out in the context of a coordinated strategy. Cumulative impacts on natural resources, arising from various activities subject to the jurisdiction of separate agencies, often escapes the attention of any single agency resulting in degradation of the resource. The goal of the partners for the Midwest Wind Energy MSHCP is to help focus and enhance natural resource conservation, through a comprehensive and coordinated approach, one that complements existing regulatory authorities.

This grant proposal is an outcome of dialogue between the aforementioned states, the wind energy industry, The Conservation Fund, and the Service (hereafter referred to as the "Partners") and reflects a common commitment among all Partners to maintain an open dialogue, develop an effective collaboration, and ensure that the best available information and expertise drives the MSHCP planning process. The Partners have agreed that efforts to develop a MSHCP and incidental take permit program for wind energy companies represents the best strategy for harmonizing the conservation needs of threatened and endangered species with the regulatory compliance obligations of wind energy developers and the legal responsibilities of the Service under the Endangered Species Act (ESA) and other applicable laws. The Partners believe that a MSHCP provides an opportunity to build on the innovative approaches being used in other HCP planning processes such as the NiSource MSHCP and the Whooping Crane HCP, which also seek to achieve regulatory compliance obligations for energy activities, while seeking to accomplish broader conservation and recovery goals of the ESA. These approaches will integrate wind energy siting, construction, operation, and maintenance activities with the conservation and recovery goals of listed species, thus reducing conflicts between listed species protection and economic development, and streamlining ESA consultation procedures. The Partners have committed to pursuing the development of a MSHCP and an incidental take permitting program consistent with all applicable legal and regulatory requirements.

It is envisioned that the Midwest Wind Energy MSHCP would be developed as a ”template HCP”, meaning that the Service would issue ITPs to enjoining industry participants, as well as those that apply for ITPs after the HCP is approved and implemented. However, the MSHCP could also be implemented in a manner whereby the ‘states’ become the ITP applicants and issue “Certificates of Inclusion” to future ITP applicants through applicable state processes. In either event, the MSHCP for wind energy development is intended to provide conservation and recovery benefits to federally-listed species and accommodate future siting, construction, operation, and maintenance of wind energy facilities.

The Conservation Fund was approached by the states to help coordinate stakeholders and lead the development of a structured decision making (SDM) tool for HCP-related mitigation. The SDM tool will be the outcome of a Strategic Habitat Conservation framework developed to address species and habitat protection needs at multiple spatial and temporal scales, while ensuring economic development concurrently.

With this as a backdrop, five states have joined together on behalf of all eight partner states to develop this grant proposal as a means to facilitate effective collaboration through the MSHCP planning process. All eight states will serve key roles in the development of species-specific avoidance, minimization, and mitigation measures, and provide expertise in the review of key deliverables.

Wind Energy Activities

The following information represents an overview of wind energy construction, operation, and maintenance activities that will provide the basis for the MSHCP’ detailed planning and analysis (i.e., development of avoidance and minimization measures, impact assessment, etc): access road construction; site development (i.e., tree, shrub, herbaceous clearing); pad construction; excavation of foundation footings for structures; pouring concrete foundations for wind generator towers, placement of meteorological towers, transformer pads, and substations; trenching for underground utilities and placement of subsurface electrical and communication cables; placement of electrical poles and cables for overhead transmission; substation construction; tower assembly, erection, and equipment installation; electrical connection to tower; access road grading, and vegetation management.

Planning Area and Statistics

Covered Lands – 27, 385, 358 acres

The proposed Midwest Wind Energy HCP includes land in all eight states in the Service’s Midwest Region. To determine the proposed covered lands footprint, an analysis of wind resource data was performed for each state (See Appendix A). The purpose of the analysis was to identify landscapes within each state that had average wind speeds of 7 meters per second or greater at 50 meter heights

(for MN, data was extrapolated from 30 and 80 meter data as 50 meter data was not available). As such, the areas within the covered lands footprint are areas within each state considered "high potential" for wind energy development. Strategic Habitat Conservation planning will be utilized to ensure species-specific avoidance and minimization measures are effective, and mitigation projects developed for areas where the best opportunities for conservation and recovery of the species exist. While the plan will potentially encompass 27,385,358 acres of covered lands within the eight states, the strategic habitat conservation framework will be applied region-wide, ensuring future mitigation projects maximize conservation and recovery of the covered species.

Covered Species – 30 species

There are 30 species currently being evaluated for inclusion in the MSHCP (see Table 1). The species list was developed by intersecting high potential wind development areas (i.e., areas within the Midwest region with average wind speeds of 7 meters per second or greater at 50 meters in height) with listed species presence/absence information for the Midwest region.

Benefits to the Species

The proposed MSHCP will provide significant conservation benefits to covered species by addressing the needs of the species and their habitats on a regional, ecosystem-wide basis. This will be accomplished through the development of species-specific Conservation Frameworks (including biological goals and objectives) which will help guide on-the-ground conservation and recovery of the species' population, and/or the enhancement or restoration of their habitat. The MSHCP will also provide assurances that those responsible for implementing the MSHCP are capable of accomplishing the objectives of the MSHCP, have an implementation schedule, and adequate funding. The MSHCP will also benefit non-covered species that utilize the same habitat as the species covered by the MSHCP.

One key feature for the MSHCP is the development of species-specific avoidance and minimization measures for all wind energy construction, operation, and maintenance activities. Consistent and coordinated use of these measures, and the development of revised or new measures relevant to the MSHCP covered species, will serve to avoid impacts to covered species, and where impacts will occur, will minimize such impacts to the maximum extent practicable. Where impacts cannot be avoided, mitigation will off-set species and habitat impacts to the maximum extent practicable.

TABLE 1
Midwest Wind Energy HCP
Species Proposed to be Covered by the MSHCP

	Common Name	Scientific Name	Status	IA	IL	IN	MI	MN	MO	OH	WI
Invertebrates Insects											
1	American Burying Beetle	Nicrophorus americanus	E		X	X	X		X	X	
2	Dakota Skipper	Hesperia dacotae	C	X				X			
Invertebrates Mollusks											
3	Spectaclecase	Cumber-landia monodonta	C	X	X			X	X		X
4	Higgins Eye	Lampsilis higginsii	E	X	X			X	X		X
5	Scaleshell	Leptodea Leptodon	E				X		X		
6	Sheepnose	PlethobasusCyphyus	C	X	X	X		X		X	X
7	Fat Pocketbook	Potamilus capax	E		X	X			X		
8	Winged Mapleleaf	Quadrula Fragosa	E					X	X		X
9	Fanshell	CyprogeniaStegaria	E		X	X				X	
10	Catspaw Pearlymussel	EpioblasmaObliquata obliquata	E							X	
11	White Catspaw Pearlymussel	Epioblasma obliquata perobliqua	E		X	X	X			X	
12	Northern Riffleshell	Epioblasma torulosa rangiana	E		X	X	X			X	
13	Pink Mucket	Lampsilis abrupta	E		X	X			X	X	
14	White Wartyback Pearlymussel	Plethobasus cicatricosus	E			X					

15	Orangefoot Pimpleback	Plethobasus cooperianus	E	X	X	X					
16	Clubshell	Pleurobema clava	E		X	X	X				
17	Rough Pigtoe	Pleurobema plenum	E			X					
18	Rayed Bean	Villosa fabalis	C			X	X			X	
19	Pleistocene Disc	Discus macclintocki	E	X	X				X		
20	Chittenango Ambersnail	Novisuccinea chittenangoensis	T	X	X				X		
21	Curtis Pearlymussel	Epioblasma florentina curtisi	E						X		
22	Neosho Mucket	Lampsilis rafinesqueana	C						X		
23	Tumbling Creek Cavesnail	Antrobia culveri	E						X		
Vertebrates Fishes											
24	Topeka Shiner	Notropis Topeka	E	X				X	X		
Vertebrates Birds											
25	Whooping Crane	Grus Americana	E	X				X			
26	Piping Plover	Charadrius melodus	E	X	X		X	X	X		X
27	Interior Least Turn	Sternula antillarum athalassos	E	X	X	X			X		
28	Kirtland's Warbler	Dendroica kirtlandii	E			X	X			X	
Vertebrates Mammals											
29	Gray Bat	Myotis grisescens	E		X	X			X		
30	Indiana Bat	Myotis sodalist	E	X	X	X	X		X	X	

Activity and Threats Analysis

Invertebrates – Insects - American Burying Beetle (*Nicrophorus americanus*) and Dakota Skipper (*Hesperia dacotae*)

Wind energy development, specifically new construction and on-going maintenance activities, has the potential to adversely effect vertebrate insects both directly and indirectly. Land clearing, tree trimming, and other vegetation management actions can result in direct take of individuals and degrade habitat.

The American burying beetle (Abb), formerly distributed throughout temperate eastern North America, is now known only from a few widely separated, naturally occurring populations: (1) Block Island, off the southern coast of Rhode Island, where the species is apparently stable; and (2) in eastern Oklahoma, where it has been recorded in Latimer, Cherokee, Muskogee, and Swquoyah counties. Since 1980, American burying beetle also has been recorded in southwestern Missouri and in the Platte River Valley in west-central Nebraska. Other population locations that are being monitored include release locations in Athens, Hocking, and Vinton counties, Ohio, and historic population centers in Mississippi and New Jersey. Vegetation management practices associated with wind energy installation sites and right-of-ways have the potential to degrade habitat for Abb, while at the same time increasing competition between Abb and other carrion-reliant beetles.

Dakota skipper are found in high quality native prairie containing a high diversity of wildflowers and grasses. Habitat includes two prairie types: 1) low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; and 2) upland (dry) prairie dominated by bluestem grasses, needlegrass, pale purple and upright coneflowers and blanketflower. Wind energy installations placed within or in proximity to occupied Dakota Skipper habitat may adversely impact populations if it is shown that foraging Dakota skippers can become swept-up into the rotor area of wind turbines.

Invertebrates – Mollusks - Spectaclecase (*Cumber-landia monodonta*), Higgins Eye Pearly Mussel *(Lampsilis higginsii*), Scaleshell Mussel (*Leptodea Leptodon*), Sheepnose mussel (*Plethobasus Cyphyus*), Fat Pocketbook Mussel (*Potamilus capax*), Winged Mapleleaf Mussel (*Quadrula Fragosa*), Fanshell Mussel (*CyprogeniaStegaria*), Catspaw Pearlymussel *(Epioblasma Obliquata obliquata*), White Catspaw Pearlymussel (*Epioblasma obliquata perobliqua*), Northern Riffleshell Mussel (*Epioblasma torulosa rangiana*), Pink Mucket Mussel (*Lampsilis abrupta*), White Wartyback Pearlymussel (*Plethobasus cicatricosus*), Orangefoot Pimpleback Mussel (*Plethobasus cooperianus*), Clubshell Mussel (*Pleurobema clava*), Rough Pigtoe (*Pleurobema plenum*), Rayed Bean Mussel (*Villosa fabalis*), Pleistocene Disc (*Discus macclintocki*), Chittenango Ambersnail (*Novisuccinea chittenangoensis*), Curtis Pearlymussel (*Epioblasma florentina curtisi*), and Neosho Mucket Mussel (*Lampsilis rafinesqueana*).
The decline of mussels in the eastern United States is primarily the result of

habitat loss and degradation. These losses have been well documented since the mid-19th century. Chief among the causes of decline are impoundments, channelization, chemical contaminants, mining, and sedimentation (USFWS 2002).

Construction of new wind energy installations and construction and maintenance of ancillary facilities (such as powerline right-of-ways) can produce sediment that enters streams (access road construction, stream crossings, right-of-way maintenance, etc). Siltation and general sedimentation runoff is a pervasive problem in streams and has been implicated in the decline of stream mussel populations. Sources, biological effects, and the control of sediment in streams were thoroughly reviewed by USFWS (2002). It also reviewed how mussels are specifically affected by sediment and discussed land-use practices that may impact mussels. Specific biological impacts on mussels from excessive sediment include reduced feeding and respiratory efficiency from clogged gills, disrupted metabolic processes, reduced growth rates, increased substrate instability, limited burrowing activity, and physical smothering (Ellis 1936; USFWS 2002; NatureServe 2007). Studies tend to indicate that the primary impacts of excess sediment on mussels are sub-lethal, with detrimental effects not immediately apparent. The physical effects of sediment on mussels appear to be multifold, and include changes in suspended and bed material load; bed sediment composition associated with increased sediment production and run-off in the watershed; channel changes in form, position, and degree of stability; changes in depth or the width/depth ratio, which affects light penetration and flow regime; actively aggrading (filling) or degrading (scouring) channels; and changes in channel position that may leave them high and dry (NatureServe 2007; USFWS 2002).

Interstitial spaces in the substrate provide crucial habitat for juvenile mussels. When clogged, interstitial flow rates and spaces may become reduced, thus reducing juvenile habitat. Sediment may act as a vector for delivering contaminants such as nutrients and pesticides to streams. Juveniles can readily ingest contaminants adsorbed to silt particles during normal feeding activities (see summary of biology and natural history). These factors may help explain, in part, why so many mussel populations, including potentially those of the sheepnose, appear to be experiencing recruitment failures. Many Midwestern and Southeastern streams have increased turbidity levels due to siltation. The sheepnose produces conglutinates that appear to function in attracting potential hosts. Such a reproductive strategy depends on clear water during the critical time of the year when mussels are releasing their glochidia. In addition, mussels may be indirectly affected when turbidity levels significantly reduce the amount of light available for photosynthesis and the production of unionid food items (USFWS 2002).

Vertebrates - Fishes - Topeka Shiner (*Notropis Topeka*)

Topeka shiners are found in small to mid-sized prairie streams of the central prairie regions of the United States with relatively high water quality and cool to moderate temperatures. Many of these streams exhibit perennial flow, although some become intermittent during summer or periods of prolonged drought. The Topeka shiner's historic range includes portions of Iowa, Kansas, Minnesota, Missouri, Nebraska, and South Dakota. In Iowa, Topeka shiners are a prairie minnow of wide expanses with sandy shoals in the headwaters of streams (Harlan et al. 1987). In Missouri, the habitat of the Topeka shiner tends to occur in belts of hilly topography adjacent to major rivers, where less-intensive agriculture results in lower rates of sedimentation and higher gradients flush silt efficiently, maintaining clean substrates in the pools the Topeka shiner inhabits (Pflieger 1997). In Minnesota, populations of the Topeka shiner have probably declined from increased agricultural development and climate change (Eddy and Underhill 1974; Phillips et al. 1982). The species continues to exist in these States, but in most areas its range is greatly reduced.

Topeka shiner declines are attributed to environmental pollution, siltation, and loss or alteration of habitat as a result of development activities. Inclusion of Topeka shiner in this MSHCP will ensure that wind energy development activities (access road construction, stream crossings, right-of-way maintenance, etc) avoids and minimizes impacts to the species and its habitat, and mitigates any impacts to the maximum extent practicable.

Vertebrates – Birds - Piping Plover (*Charadrius melodus*), Whooping Crane (*Grus Americana*), Interior Least Turn (*Sternula antillarum athalassos*), and Kirtland's Warbler (*Dendroica kirtlandii*)

As earlier stated, some of the windiest areas within the Great Lakes region encompass the ecologically sensitive Great Lakes shorelines, which provides essential habitat for migratory birds, nesting habitat for the federally-endangered piping plover, and stop-over habitat for a number of migratory songbirds of concern, including the federally-endangered Kirtland's warbler. Several wind energy-related activities have the potential to impact bids, including land clearing, tree trimming, vegetation management, over-head powerlines, and operation of the turbines (direct mortality/avoidance of areas, etc).

The Great Lakes population of piping plovers had declined from a historic size of several hundred breeding pairs to 17 at the time of listing. From 1986-2002, the population fluctuated between 12 and 51 breeding pairs, with breeding areas remaining largely confined to Michigan. Some of the windiest areas in the Great Lakes region are found along the shorelines of the lakes themselves. Piping plovers use the sand beaches along the Great Lakes' shorelines for nesting, and for stop-over habitat during migration. Habitat destruction and degradation are pervasive, and have reduced suitable habitat. Human disturbance and predators further reduce breeding habitat and affect survival. If turbines are erected in

proximity to plover nesting areas or stopover habitat, it is possible that take could occur, further reducing the already limited population of this rare bird. The current size of the Great Lakes population makes it extremely vulnerable to chance demographic and environmental events that could extirpate the species from the Great Lakes region.

Research conducted as part of the HCP process will help the wind industry make informed, science-based decisions about where future wind energy projects should be built, and how they can be operated to minimize impact on migratory birds. It will also aid in the development of specific guidelines for wind farm construction and operation, which is seen as a high priority for the Service.

Vertebrates – Mammals - Gray Bat (*Myotis grisescens*) and Indiana Bat (*Myotis sodalist*)

Wind development projects pose a serious threat to bats, as evidenced by multiple post-construction mortality studies at wind power sites across the eastern United States and Canada (Kunz et al. 2007) (see below). Habitat loss due to construction and maintenance of wind turbine sites, transmission line ROWs, and access roads is part of the issue, but of even more concern is bat mortality due to blade strikes and "barotrauma," a fatal condition caused by low-pressure zones near turbines that cause the lungs of bats to hemorrhage (Baerwald et al. 2009),. While bat mortality has disproportionately impacted long-distance migrating bats including hoary, eastern red, and silver-haired bats, death of other *Myotis* species (little brown bats, northern long-eared bats) has been documented at multiple wind power facilities (Arnett et al. 2008). As of 2009, approximately 10 proposed wind power projects within Region 3 are within areas known to support summer populations of Indiana bats, and their construction, operation, and maintenance could cause significant take.

The Mountaineer Wind Project, Backbone Mountain, West Virginia.

The Mountaineer site consists of 44 1.5 Megawattwind turbines that are 102 m tall at the tip of the blade. Monitoring of the wind plant to measure avian and bat mortality occurred from April 4 through November 11, 2003. All turbines were searched 23 times during this period (7 in spring, 2 in summer, 14 in fall) on a weekly basis. A carcass removal and observer efficiency study using bird carcasses was conducted in October. Between April 20 and November 9, 2003, 475 dead bats were found within the wind plant. Although the Indiana bat is not highly migratory like the hoary and eastern red bat, the Indiana bat is considered a migratory species (LaVal and LaVal 1980) and banded individuals have been found as far as 325 miles from hibernacula (Gardner and Cook 2002), although they typically move much shorter distances between summer breeding areas and hibernacula. Indiana bats arrive at hibernation sites from mid-August to late October (Thomson 1982). The Indiana bat therefore has somewhat similar migration patterns and timing as the little brown bat and eastern pipistrelle.

EXPECTED RESULTS OR BENEFITS

Species Benefits

The Midwest Wind Energy MSHCP will benefit listed species because:

- Wind energy activities (construction, operation, and maintenance) that would otherwise not be subject to ESA consultation will be covered by the MSHCP and implemented using species conservation measures developed as part of the MSHCP' planning process.

- Conservation activities will be coordinated and aggregated across a broad geographic scale, and will be focused on achieving species conservation and recovery goals. This has the potential to better account for and address the cumulative impacts to species associated with multiple projects over time and will lead to more effective conservation and recovery efforts.

- The MSHCP will provide a means to acquire, protect, and effectively manage species habitat on a coordinated and proactive basis.

- The HCP process would include detailed conservation planning for all covered species as part of the HCPs conservation program development.

- On-the-ground spatially explicit conservation strategies (i.e., biological goals and objectives) will be developed to facilitate species conservation and recovery, allowing multiple stakeholders to work on protection, management and restoration activities, focusing limited resources, and leveraging additional resources.

Ecosystem Benefits

The Services Great Lakes-Big Rivers Region (Region 3) covers over 286 million acres of land and over 8 million acres of water (excluding the Great Lakes). The Region is home to more than 57 million people that occupy over 4 million acres of residential land. The Region is dominated by more than 113 million acres of cropland (primarily corn and soybeans), 54 million acres of pasture and hay land, 4 million acres of grassland, and more than 78 million acres of forest.

The Region contains all or portions of several large river basins, including the Upper Mississippi River, Missouri River, Ohio River, and Minnesota River. The Upper Mississippi River Basin covers 120 million acres, or 41 percent of the Region. The Great Lakes Basin, which is the largest fresh water system in the world, comprises 184 million acres and contains over 5,000 tributary streams and 9,000 miles of shoreline.

Within Region 3 there are several major classes of ecosystems that are critically important to fish and wildlife resources. These include wetlands, savannas, prairies, forests, and karst ecosystems.

Wetland Ecosystems - Of the estimated 64 million acres of wetlands present in the Great Lakes - Big Rivers Region at the time of colonial America, only 23

million acres remain (Dahl 1990). Draining, dredging, filling, leveling, and flooding have reduced wetlands by 50 percent or more in 6 states, and 5 states have lost 80 percent or more of their wetlands. Of the wetlands that do remain in Region 3, only a small percentage remain as they existed 200 years ago.

Oak Savannas - Midwest oak savannas are among the world's most threatened communities (Anderson, et al. 1993). Prior to European settlement, oak savanna covered approximately 27–32 million acres of the Midwest (Nuzzo 1985). This same author indicates that in 1985, only 113 sites (2,607 acres) of high-quality oak savanna remained. Nationwide, over 99 percent of the original savanna has been lost to agriculture, fire suppression, and over grazing (Nuzzo 1986), and Midwest oak savannas are among the rarest and most endangered ecosystems in the Nation (Noss et al. 1995). Development has destroyed, fragmented, and disrupted natural processes needed to maintain quality savanna ecosystems.

Tallgrass Prairie Ecosystems - Once one of our Nation's most diverse terrestrial ecosystems and common throughout the Midwest, Tallgrass prairies have become functionally non-existent over the last 150 years. The original tallgrass prairie, which extended from western Indiana to the eastern part of Kansas, Nebraska, and North and South Dakota and south to Oklahoma and Texas, has been virtually eliminated throughout its historic range. Surveys suggest that 82.6 to 99.9 percent declines in the acreage of tallgrass prairie have occurred in twelve states and one Canadian province since European settlement. Loss and fragmentation of prairie landscapes combined with changes in natural processes have had negative consequences for many grassland plants and associated animals.

Karst Ecosystems - Karst ecosystems are rich in water and mineral resources, and provide unique habitats to numerous fish and wildlife. Many species of bats, including the federally-listed Ozark big-eared bat, rely on karst features (i.e., caves) for their existence. The federally endangered Ozark cavefish rely on caves as well. In the state of Missouri alone, there are about 5,700 caves. Nearly 800 different species of animals have been recorded in Missouri caves, of which about 64 are truly cave-adapted troglobites (live in darkness) or stygobites (aquatic troglobites). Caves are also important for many common wildlife to escape cold, drought and predators.

A primary outcome for the Midwest wind energy MSHCP is to develop avoidance and minimization measures that will protect important ecosystem functions. Within the Region, the FWS alone manages 54 National Wildlife Refuges comprising more than 1.2 million acres of land, along with 12 Wetland Management Districts with more than 300,000 acres in waterfowl production areas. Many of these public trust lands have a variety of pristine, intact ecosystems, both structurally and functionally, and protection of these vital resources will be a high priority for the MSHCP.

Service Benefits

In addition to the benefits to listed species, their habitats, and the ecosystems that support them, the Midwest Wind Energy MSHCP will benefit the Service because:

- The Service will have additional tools and greater flexibility to protect and recover species, including mitigation measures, habitat acquisition through State processes (via Section 6 of the ESA), and regulatory control over activities otherwise not subject to the ESA. There is no federal nexus for the majority of wind power projects, which has led to a patchwork of state and/or local regulations within the Midwest region. This has also led to many missed opportunities for greater conservation of affected fish and wildlife resources, as well as an often protracted, unpredictable, and fragmented response by the resource agencies to wind development project proposals. The MSHCP would address this problem by providing a more effective, predictable, streamlined, and consistent process for wind energy regulatory actions with regard to listed species. It would also facilitate a more robust approach to conserving these species by framing wind development and species needs in a regional context. This would better meet the needs of the Service, the states, the industry, and the species.

- Development of the MSHCP will provide not only significant conservation benefits to listed species, but also more certainty and continuity in how cooperative conservation measures are applied on the landscape.

- Once developed, the MSHCP will eliminate certain administrative, personnel, and financial burdens experienced by the Service in reviewing proposed projects on a project-by-project basis. While the initial administrative burdens may be greater and the timeframe for initial approval longer, these will be offset by avoiding future multiple, often redundant Section 10 permitting processes for wind energy activities.

- Specific impacts to wildlife due to wind energy development, operation, and maintenance are unknown. The HCP process would include studies and investigations that could answer important questions with regard to wind energy impacts on wildlife resources.

- Through monitoring, the MSHCP program will provide the Service with more broad-based science, data, and information on wind energy development and covered species.

- As the administrative burdens of the Service are reduced, a simultaneous benefit of streamlining the permitting process will be the freeing up of resources for species protection and recovery. The Service will be able to comply with the goal and intent of the ESA, with a minimum of staff resources and increased flexibility in applying conservation tools.

State Benefits

The Midwest Wind Energy MSHCP will benefit the States because:

- The approval and implementation of a MSHCP will meet or exceed state regulatory requirements for species covered by the plan.

- There would be staff time savings as the species in the MSHCP would not need to go through the standard state regulatory review but would be addressed through avoidance, minimization, and mitigation as planned for in the MSHCP.

- Involvement in the plan development will help the state shape conservation in their state by providing information on potential mitigation sites and bringing more monies to bear in their states.

- Identification of high quality mitigation sites for listed species will assist the states with implementation of their State Wildlife Action Plans which has been identified as a high priority for the Service and the Department of Interior.

- The development of the MSHCP will enable the states to apply for future Section 6 grants for habitat acquisition in support of the MSHCP and covered species. The MSHCP effort will lay the groundwork for multi-state coordination on future species conservation efforts (enable S6, future multi-state collaboration).

Industry Benefits

Constantly seeking ways to improve the way it conducts business and performs its operations, wind energy developers view a MSHCP as an innovative way to increase regulatory certainty while at the same time, achieving conservation goals. Industry would benefit from development of an MSHCP because:

- From a business plan perspective, Companies will be provided a greater level of certainty as to when and how it should perform construction, operation and maintenance activities, which will result in economic savings and better preserve the life of facilities.

- An MSHCP would lay the necessary foundation to better plan for, predict the costs associated with, and streamline the permitting process for new projects or existing project expansions.

- Development of an innovative MSHCP that is focused on achieving conservation on a broad based, landscape level will enhance the company's position as an environmentally conscious energy company.

- A multi-state approach would ensure a consistent application of species conservation measures (i.e., avoidance, minimization and mitigation measures) across the states and among FWS offices, providing both an "even playing field" for developers and known conditions.

- Once the MSHCP process is completed, development of wind facilities in areas containing listed species should proceed much faster and with less cost than developing projects with site specific HCPs.

OBJECTIVES

The objective of this grant proposal is to facilitate effective collaboration between multiple federal, state and local stakeholders through the development of a comprehensive MSHCP. Specifically, we seek to:

1. Develop the **MSHCP** and associated **NEPA documents**. The development of the MSHCP and NEPA compliance will be guided by a full-time FTE or equivalent on-loan to The Conservation Fund working on behalf of the states and with industry to develop the MSHCP. This person will serve as the MSHCP and NEPA project manager and will be responsible for facilitating the input from scientific and management advisory groups; the MSHCP will be developed by a collaborative group of scientists and managers through a facilitated process. Use will be made of the existing recovery groups, state specific industry coalitions, the Great Lakes Wind Cooperative and other additional groups as needed to address MSHCP and/or NEPA issues. After the MSHCP has been prepared it will be submitted to the Service for review in accordance with ESA section 10(a)(1)(B) requirements. The expected time frame for development of the first draft of the HCP is 12 - 15 months with work being performed concurrently for the NEPA process. With proper facilitation and coordination, the expected MSHCP and NEPA documentation completion timeframe is 24 - 36 months. The Service will be responsible for the evaluation of the incidental take under Section 7 of the ESA, which will be conducted outside the scope of this grant. Industry and state partners, however, will be actively engaged in the development of avoidance, minimization, and mitigation measures and their associated best management practices.

2. Develop **Best Management Practices and Avoidance, Minimization and Mitigation Measures (AMMs**). Measures to address the risk associated with siting, development, and operation of wind farms will be developed using existing information on mortality, limiting factors, and anticipated impacts. This effort will compile management practices that have worked and augment tools available to industry and managers to address future habitat loss or direct mortality. Industry will participate actively in these discussions and will compile existing information pertaining in particular to avian impacts from development to establish avoidance, minimization, and mitigation measures to promote continued conservation, recovery, and avoidance of long-term impacts to the species from wind development.

3. Identify a **habitat-based geospatial network of lands and waters** where opportunities for species mitigation may occur. In this regard,

federal, state, and local partners will work together to understand landscape, ecosystem, and site-level factors influencing potential mitigation areas needed for the wind energy MSHCP.

4. Focus the efforts of conservation partners in key areas to increase efficiency and develop consistency in species habitat protection, restoration, and management.

APPROACH

This grant proposal includes three over-arching components with five main tasks:

1. MSHCP development and review
    - Strategic mitigation site identification
    - Potential mitigation site opportunity reports
2. NEPA documents and review

1. MSHCP development and review

The US Fish and Wildlife Service would oversee the development of the MSHCP and would utilize the conservation framework and avoidance and minimization measure (AMM) approaches that have been pioneered in the multi-state NiSource MSHCP, among others. It is envisioned that this Wind Development MSHCP would be developed as a Service 'template' MSHCP, meaning that the Service would issue the ITP to enjoining industry participants agreeing to the terms of the permit. However, the MSHCP could also be implemented in a manner whereby the 'state' becomes the applicant and issues the permit through applicable state processes.

The development of the MSHCP and NEPA compliance will be guided by a full-time FTE or equivalent on-loan to The Conservation Fund working on behalf of the states and with industry to develop the MSHCP. This person will serve as the MSHCP and NEPA project manager and will be responsible for facilitating the input from scientific and management advisory groups; the MSHCP will be developed by a collaborative group of scientists and managers through a facilitated process. Use will be made of the existing recovery groups, state specific industry coalitions, the Great Lakes Wind Cooperative and other additional groups as needed to address MSHCP and/or NEPA issues. While all states may not be participating in this section 6 planning assistance grant, all eight (8) region 3 states are supportive of the MSHCP concept. See Appendix B. After the MSHCP has been prepared it will be submitted to the Service for review in accordance with ESA section 10(a)(1)(B) requirements. The HCP will use a 30-year planning timeframe.

Components of the HCP will include:

1 **Establishment and Achievement of Biological Goals**

- Develop Habitat Suitability/Potential Occurrence Survey Protocol
  - This protocol assessment will outline the steps required to collect and evaluate site conditions to determine the likelihood of occurrence and risk to Indiana Bats and the other potential take species specific to project development. This survey protocol will be incorporated into the MSHCP as part of the steps required for avoiding or minimizing risks to the species. Results of these surveys will provide information on modifying project location or design to reduce risk or take and implementing conservation measures commensurate with actual risk.

- Conservation Measures
  - Develop measures to determine the risk to the potential take species associated with siting, development, operation and maintenance.
  - Establish avoidance, minimization, and mitigation strategies to promote continued conservation, recovery, and avoidance of long-term impacts to the species from wind development

2 Establishment of a Process to Identify Potential Mitigation Measures

- Strategic mitigation site identification.
  - In order to ensure a consistent and effective mitigation approach across the region, the states will work cooperatively to develop a process for identifying and selecting mitigation sites that fall within the green infrastructure assessment/framework. The green infrastructure assessment will not be used to determine the amount of mitigation required, but rather will be used as a guide for placing mitigation that achieves multiple benefits, addresses the species full range, and transcends political boundaries.

- Operational mitigation parameters
  - Identify effective operational mitigation to reduce mortality of listed species
  - Identify potential operational mitigation tools that need additional ground-truthing and could be implemented through the MSHCP

2. NEPA documents and review

The MSHCP and associated NEPA documents will be developed by the states and industry for approval by the Service. The NEPA documents will be prepared concurrently with the MSHCP. The states have proposed that The Conservation Fund hire an experienced NEPA contractor to prepare the NEPA document and that a full-time FTE or equivalent serve as the facilitator and project manager for development of the MSHCP and NEPA document. This full-time FTE would oversee the NEPA contractor and facilitate the MSHCP advisory board and scientific committees. This will ensure consistency and leverage resources. The U.S. Army Corps of Engineers will serve as a cooperating agency to the NEPA document.

While the states will be involved in providing input on the MSHCP document development, there is a need to ensure that the Draft MSHCP document incorporates input appropriately. Similarly, during the NEPA process, states will provide their input in scoping and development of the DEIS, and there is a need to review and provide comments on the NEPA documents to be sure that input has been addressed.

Task Work - Products

TASK 1: MSHCP development and Review

Obtain FTE to oversee and facilitate development of MSHCP. State peer review of the draft MSHCP document review may vary by state but will include review of background and introductory chapters to the MSHCP as well as work on avoidance and minimization measures and technical species review.

Product 1-1: Development of the MSHCP

Product 1-2: State comments pertaining to various chapters of the MSHCP. Format of these comments will vary depending on the chapters reviewed, but all comments will be maintained in a central database.

TASK 2: NEPA Compliance and review

Obtain the services of an experienced NEPA contractor working on behalf of the States and Industry. States will participate by reviewing and providing comments on the NEPA documents.

Product 2-1: Development of the NEPA documents.

Product 2-2: State comments on the NEPA documents.

TASK 3: <u>Development of a Process to Identify Potential Mitigation Sites:</u>

In order to ensure a consistent and effective mitigation approach across the region, the states will work cooperatively to develop a process for identifying and selecting mitigation sites. This process will be developed cooperatively by the states, industry, and the Service and will be coordinated by The Conservation Fund as agreed to by the states and industry. After the process is developed, the states will then use the process to identify potential mitigation sites in their state – see Development of Potential Mitigation Site Reports Task 4.

<u>Data and Information Discovery</u>

1. Collaborate with the MSHCP teams to determine which species will require mitigation for take (type and amount).
2. Collect spatial data, strategic conservation plans (e.g. Wildlife Action Plans, green infrastructure plans, State Natural Heritage plans), and other relevant information for 8 states.
3. Gather data via specific data requests, expert work groups, and/or focus groups held individually with each state.

<u>Network Design Protocol Development</u>

1. Create a green infrastructure network design process.
    - Define the scale of the Green Infrastructure assessment. (watershed/HUCs, eco-regions, counties)
    - Identify key data elements for development of green infrastructure core areas.
    - Establish criteria for key ecosystem attributes (habitat type for listed species), e.g. core forests (Omernik ecoregions), core aquatic systems (watershed/HUCs), core grasslands/prairies, recovery units.
    - Delineate green infrastructure hubs and corridors.

Product 3-1: An inventory and quality assessment of baseline mapping data and related information as well as a process for identifying and filling data gaps needed to complete Product 3-3 below. The final product will be a resource inventory database consisting of GIS data layers with supporting metadata and related information.

Product 3-2: A documented methodology for defining scales, establishing criteria, and delineating green infrastructure network elements (e.g. hubs, cores, and corridors). This methodology will be a brief written report and will be used to produce Product 3-3 below.

Product 3-3: A Green Infrastructure Network Design covering the 8-state area. This product will be a series of GIS data layers and maps delineating the network.

TASK 4: Development of Potential Mitigation Site Reports

As part of the planning process and in order to better anticipate implementation of the plan, some states will be involved in developing potential mitigation site reports. These reports will serve as source material for industry as it develops mitigation packages in the MSHCP and also can be used by the state agencies for other purposes including State Wildlife Plan implementation and other conservation planning.

Guidance for Potential Mitigation Site Reports

2 Develop preliminary guidelines for state potential mitigation site reports.
    - Synthesis of state interests related to MSHCP species
        - Suitability (e.g. next to other conservation area, known occurrences of species,)
    - Define criteria for potential site mitigation projects.
        - Identification of costs relative to potential site mitigation opportunities.
        - Identification of benefits relative to potential site mitigation opportunities.
3 Selection of Mitigation sites

Product 4-1: Guidance document to States on identifying potential site mitigation opportunities (this will ensure consistent information and criteria is used to identify mitigation sites. This guidance will be given to states, the Service, and all parties who may identify potential mitigation sites.)

Product 4-2: A decision-support framework for evaluating and ranking of submitted mitigation sites. This will likely take the form of a series of GIS models and spreadsheets that are designed for non-technical users to rank and optimize mitigation site selection opportunities.

TASK 5: Development of Operational Mitigation Measures

While habitat protection and management may be an effective mitigation for habitat loss, mortality of listed species from wind turbines must also be minimized and in some cases mitigated. Effective mitigation should focus on strategies for operating turbines in such as way as to reduce mortality of listed species. Few tested operational mitigation measures currently exist.

Product 5-1: Report identifying effective operational mitigation to reduce mortality of listed species and criteria for implementation

Product 5-2: Report identifying potential operational mitigation tools that need additional ground-truthing and could be implemented through the MSHCP, and criteria for implementation.

Timeline

This MSHCP initiative is envisioned to be a two-year effort. The states are seeking funding to initiate and complete this effort.

Schedule of Tasks and Deliverables

Work for which funding is requested is scheduled to be accomplished in two years.

Start: June 2010, End: May 2012

Task 1: MSHCP

Task 2: NEPA

Task 3: GI Network Design

Focus Groups

Task 4: Mitigation Site Reports

Focus Groups

Task 5: Operational Mitigation Measures

ESTIMATED COST

Overall Budget

Tasks	Requested Funding	Match	% Match
Task 1: MSHCP Development and Review	$1,500,000		
Task 2: NEPA Compliance and Review	$800,000		
Task 3: Process to select potential mitigation sites	$1,500,000		
Task 4: Development of mitigation sites reports	$345,000		
Task 5: Operational Mitigation	$229,554		
Budgets for IA, MI, MO, OH	$625,446		
Non-Federal Match		$500,000	
Totals	**$5,000,000**	**$500,000**	**10%**

State-by-State Budget and Tasks

Each of the participating states has included a specific grant section on the work they will conduct. Also included are signed 424 forms from each of the states in support of this proposal. See Appendix B

Match

There will be a cost-share of non-federal partners of 10% of the total grant amount of $5,000,000. This match will be provided through a combination of in-kind time provided by industry partners participating in the development of the MSHCP, and via cash contributions. The states are confident that the 10% match requirement will be met if not exceeded.

Partnerships and Outreach

A multi-species habitat conservation plan spanning eight states and proposing to cover 30 species takes numerous partners to ensure its completion. Some of the partners and their roles in this MSHCP include:

1 Department of Natural Resource staff from the states of Illinois, Minnesota, and Wisconsin. These **3** states have agreed to be a party to the HCP, though, are not requesting state assistance planning funding. These states will provide expertise, review the HCP and associated NEPA documents, and participate in the identification of mitigation opportunities through the green infrastructure planning process.

2 While the state of Ohio's Department of Natural Resources is a co-signatory of this grant, the State of Ohio Public Utilities Commission is very interested in this project and is expected to provide review and comments on the development of the HCP as a separate entity from the Ohio Department of Natural Resources.

3 Nisource. NiSource is a natural gas and transmission company that has gained tremendous expertise through the development of its own MSHCP. Nisource also owns a wind-farm in Iowa and has committed to provide in-kind staff support to the wind development HCP. Nisource staff time for two years is estimated at $50,000.

4 Wind Energy Capital Group has agreed to participate in the development of the HCP contributing in-kind staff time to review of the HCP and development of the avoidance, minimization and mitigation measures.

5 TradeWinds has agreed to participate in the development of the HCP actively contributing in-kind staff time to review of the HCP and development of the avoidance, minimization and mitigation measures. See attached letter.

6 The U.S. Army Corps of Engineers has agreed to serve as a cooperating agency to the NEPA compliance document.

7 American Wind Energy Association (AWEA) is anticipated to contribute in-kind support reviewing portions of the HCP and providing technical assistance in the development of the avoidance, minimization, and mitigation measures on behalf of their industry membership.

8 Bat Wind Energy Cooperative will serve as a partner assisting in coordination of the bat surveys necessary for development of the HCP.

9 The Nature Conservancy (TNC) Field Offices in each of the **8** partner states is expected to participate in the development of the process to identify potential mitigation sites. TNC field staff will participate in focus group sessions specifically associated with that task providing information on key species and potential mitigation opportunities. TNC played a similar role in the development of the NiSource HCP.

10 Consumers Energy has agreed to participate in the development of the HCP.

Lit Cited

Arnett, E.B., W.K. Brown, W.P. Erickson, J.K. Fiedler, B.L. Hamilton, T.H.Henry, A. Jain, G.D. Johnson, J. Kerns, R.R. Koford, C.P. Nicholson, T.J. O'Connell, M.D. Piorkowski, and R.D. Tankersley, Jr. 2008. Patterns of bat fatalities at wind energy facilities in North America. Journal of Wildlife Management, 72(1): 61-78.

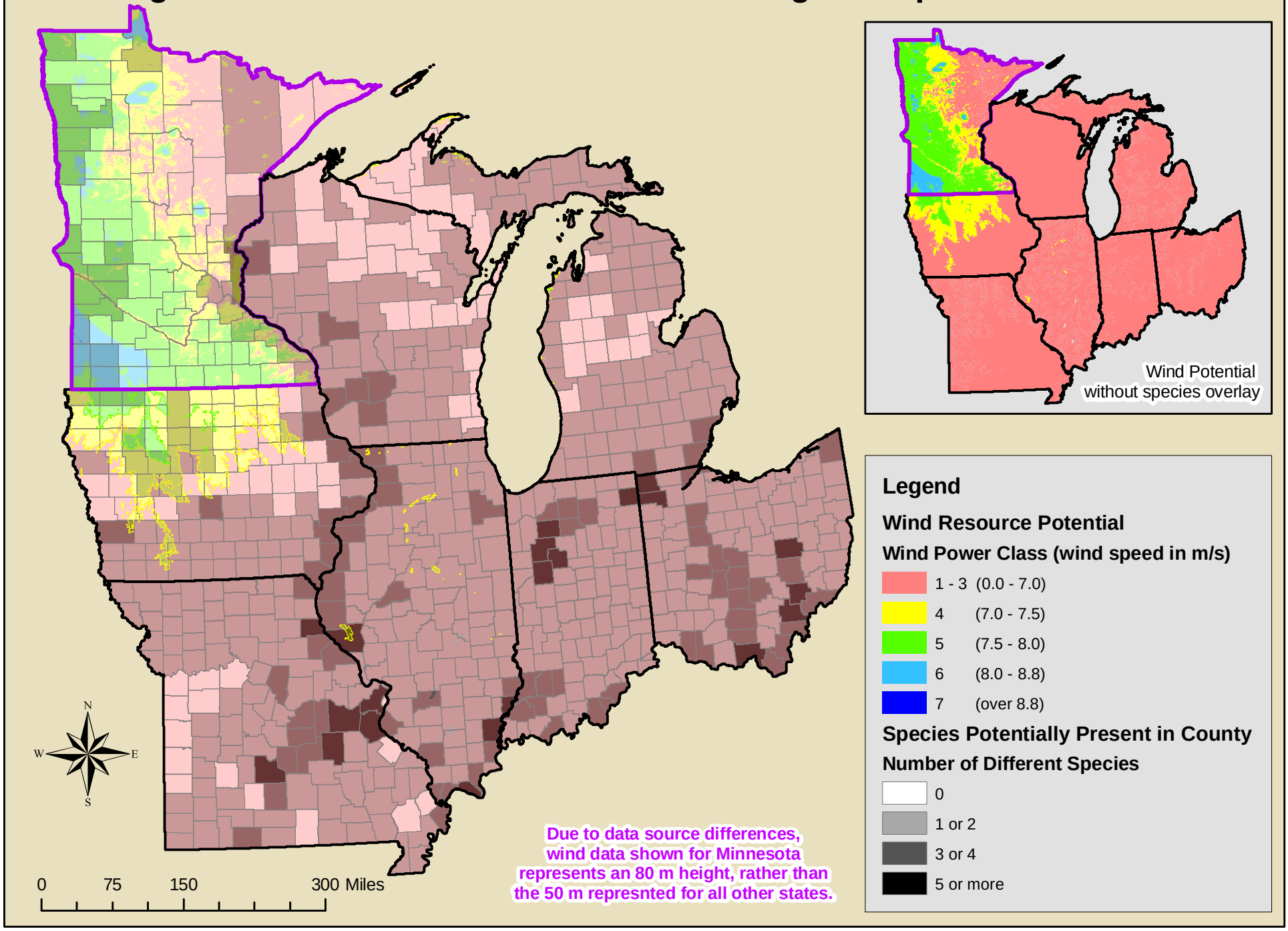
Baerwald, E.F., G.H. D'Amours, B.J. Klug, and R.M.R. Barclay. 2009. Barotrauma is a significant cause of bat fatalities at wind turbines. Current Biology 18(16). 2pp.

Kunz, T.H., E.B. Arnett, W.P. Erickson, A.R. Hoar, G.D. Johnson, R.P. Larkin, M.D. Strickland, R.W. Thresher, and M.D. Tuttle. 2007. Ecological impacts of wind energy development on bats: questions, research needs, and hypotheses. Frontiers in Ecology and the Environment 5(6): 315-324.

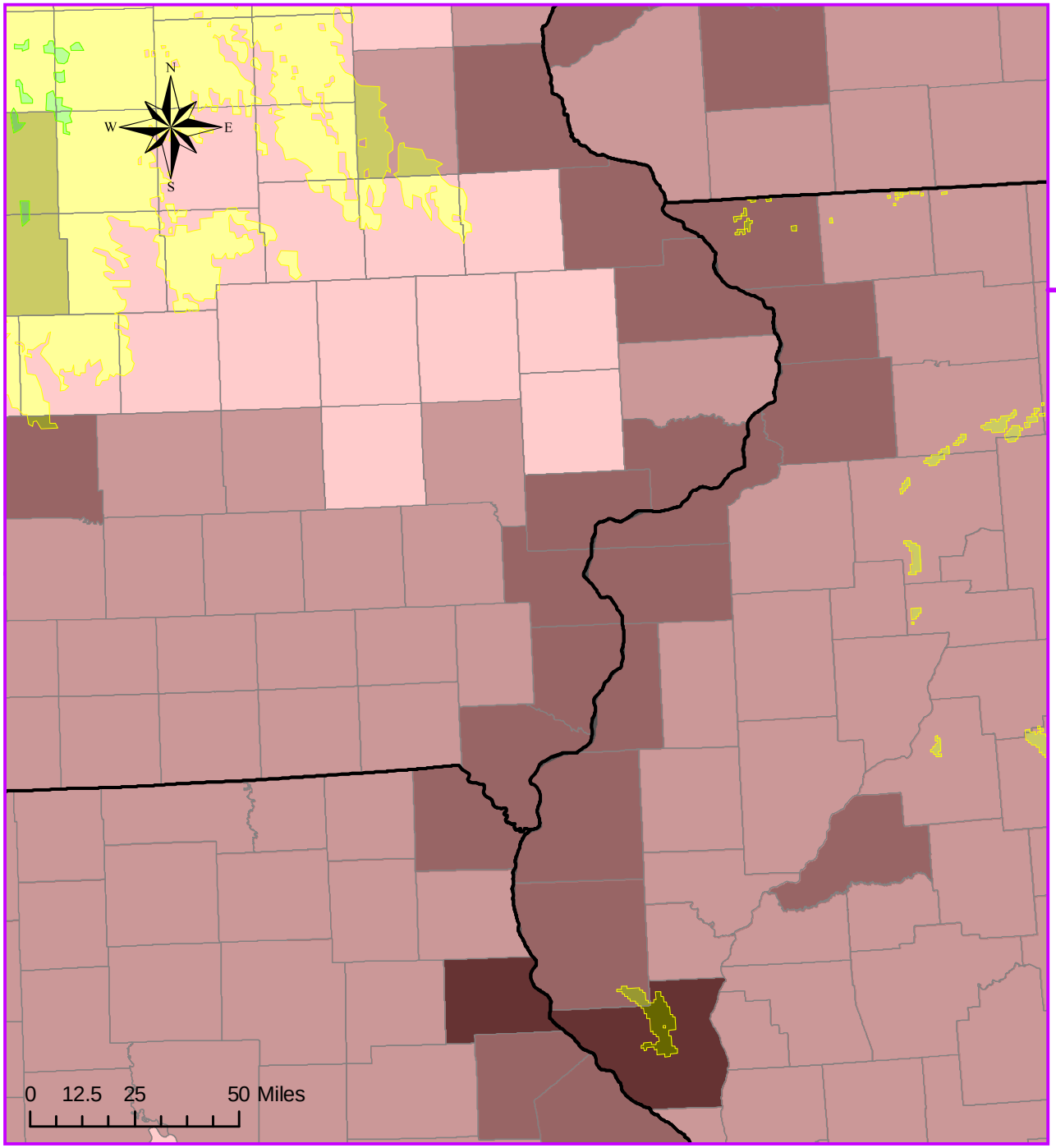
Kurta, A., S.W. Murray, and D.H. Miller. 2002. Roost Selection and Movements Across the Summer Landscape. Pp. 118-129, *in* The Indiana bat: Biology and Management of an Endangered Species, A. Kurta and J. Kennedy eds. Bat Conservation International, Austin, TX. 253 pp.

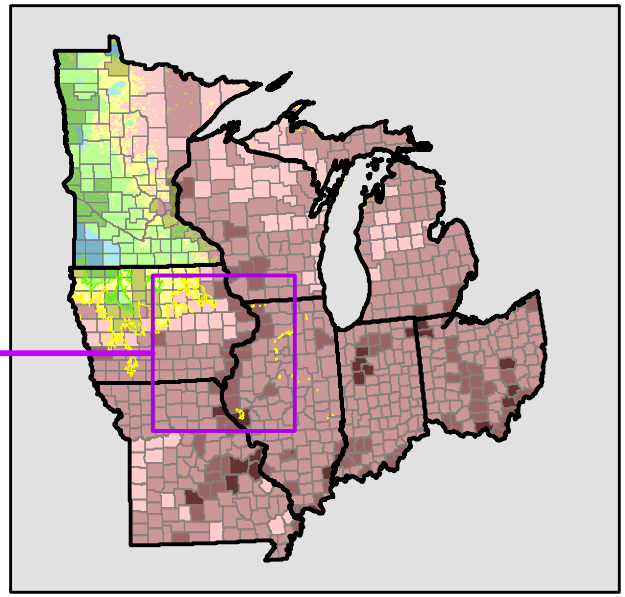
Appendix A:
Wind Maps

Regional Wind Power Potential and Endangered Species Locations



Regional Wind Power Potential and Endangered Species Locations





Legend

Wind Resource Potential

Wind Power Class (wind speed in m/s)

- 1 - 3 (0.0 - 7.0)
- 4 (7.0 - 7.5)
- 5 (7.5 - 8.0)
- 6 (8.0 - 8.8)
- 7 (over 8.8)

Species Potentially Present in County

Number of Different Species

- 0
- 1 or 2
- 3 or 4
- 5 or more

Appendix B:

State Support Documents

APPLICATION FOR FEDERAL ASSISTANCE

Version 7/03

2. DATE SUBMITTED August 19, 2009	Applicant Identifier	
3. DATE RECEIVED BY STATE	State Application Identifier: Indiana	
4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier	

1. TYPE OF SUBMISSION:

Application:	Pre-application
☐ Construction	☐ Construction
☑ Non-Construction	☐ Non-Construction

5. APPLICANT INFORMATION

Legal Name: INDIANA DEPARTMENT OF NATURAL RESOURCES	**Organizational Unit:**
	Department: Indiana Department of Natural Resources
Organizational DUNS: 82-469-7353	Division: Fish and Wildlife
Address:	**Name and telephone number of person to be contacted on matters involving this application (give area code)**
Street: 402 W. Washington Street, Room W-273	Prefix: Ms. / First Name: Katie
City: Indianapolis	Middle Name:
County: Marion	Last Name: Smith
State: IN / Zip Code: 46204	Suffix:
Country: USA	Email: kgsmith@dnr.IN.gov
6. EMPLOYER IDENTIFICATION NUMBER *(EIN)*: 35-6000158	Phone Number (give area code): 317-232-8160 / Fax Number (give area code): 317-232-8150

8. TYPE OF APPLICATION:

New

If Revision, enter appropriate letter(s) in box(es)

(See back of form for description of letters.)

None None

Other (specify):

7. TYPE OF APPLICANT: (See back of form for Application Types)

A. State Government

Other (specify):

9. NAME OF FEDERAL AGENCY: **U.S. DOI - Fish & Wildlife Service**

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER:

15.615 - Cooperative Endangered Species Conservation

Other (specify):

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:

Multi-species Habitat Conservation Plan for Midwest Wind Development - Indiana Portion

12. AREAS AFFECTED BY PROJECT *(Cities, Counties, States, etc.)*:

Statewide

13. PROPOSED PROJECT

Start Date: 6/1/2010 / Ending Date: 8/31/2012

14. CONGRESSIONAL DISTRICTS OF:

a. Applicant: 7 / b. Project: statewide 1-9

15. ESTIMATED FUNDING:

a. Federal	$	4,374,554
b. Applicant	$	0
c. State	$	0
d. Local	$	0
e. Other	$	418,973
f. Program Income	$	0
g. TOTAL	$	4,793,527

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. YES ☐ THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON

DATE:

b. NO ☐ PROGRAM IS NOT COVERED BY E. O. 12372

☑ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?

Yes ☐ If "Yes" attach an explanation. No ☑

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES.

a. Authorized Representative

Prefix: Mr. / First Name: Gregg	Middle Name:
Last Name: McCollam	Suffix:
b. Title: Acting Director, Division of Fish and Wildlife	c. Telephone Number (give area code): 317-232-9382
Email: gmccollam@dnr.in.gov	Fax Number (give area code): 317-232-8150
d. Signature of Authorized Representative	e. Date Signed: August 19, 2009

DNR Indiana Department of Natural Resources

Mitchell E. Daniels, Jr., Governor
Robert E. Carter, Jr., Director

Executive Office
402 W. Washington Street
Indianapolis, IN 46204

August 14, 2009

Kris Hoellen
Director, Conserevation Leadership Network
The Conservation Fund
National Conservation Training Center
698 Conservation Way
Shepherdstown, WV 25443

Dear Ms. Hoellen:

This letter is to confirm that the State of Indiana will participate in the development of a multi-state, multi-species wind energy habitat conservation plan (HCP) and in the Section 6 state assistance planning grant that will provide conservation benefits to species protected under the Endangered Species Act (ESA). The HCP will support the issuance of incidental take permits by the U.S. Fish and Wildlife Service (Service) that will provide take coverage for construction, operation and maintenance of Wind Energy and ancillary facilities in the Midwest region. Indiana Department of Natural Resources staff will participate in the development of the HCP and related documents.

Additionally, in order to facilitate this important effort, Indiana is volunteering to act as project administrator. The approved project would engage The Conservation Fund, an experienced not-for-profit organization, to coordinate the multiple states and environmental aspects of this project. Indiana also would seek to leverage federal partner funds to complete the project. Indiana would not provide any non-federal matching funds, and would join the USFWS in seeking support from wind energy developers and other affected parties.

We believe the HCP provides our state and region a unique opportunity to assist the wind energy industry in developing cooperative and innovative approaches to achieve regulatory compliance with the ESA, while seeking to accomplish the broader conservation and recovery goals of the ESA. It is our understanding that the planning area for this HCP will include the states of Minnesota, Iowa, Missouri, Illinois, Wisconsin, Indiana, Michigan and Ohio and will evaluate lands within each state to identify priority areas for future wind development, as well as areas already supporting wind energy facilities.

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By proactively approaching ESA compliance on a regional basis, the States, the Service, and other stakeholders (e.g. the Federal Energy Regulatory Commission and Army Corps of Engineers) can work together with wind energy companies to develop practices that avoid, minimize and mitigate the impacts that wind energy may have on protected species, while supporting growth of the industry in a environmentally sustainable manner.

Thank you very much for considering this proposal.

Sincerely,

John M. Davis, Deputy Director
Indiana Department of Natural Resources

INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND WILDLIFE

Development of a Multi-Species Habitat Conservation Plan for Wind Energy Development in USFWS Region 3 (Midwest Region Wind Development HCP)

Introduction: The mission of the Indiana Department of Natural Resources (IDNR) is: To preserve, protect, and promote Indiana's cultural, historical and natural resources. Within the IDNR the Division of Fish and Wildlife (IDFW) is statutorily charged with the care and management of the fish and wildlife resources. The mission of the IDFW is: to manage Indiana's fish and wildlife, balancing ecological, recreational, and economic benefits. This mandate includes the protection and management of resident fish and wildlife on the federal threatened and endangered list and candidate species. The habitat conservation process including the development of effective mitigation is consistent the IDFW mission and the IDFW will work cooperatively to accomplish the objectives outlined in this proposal.

IDNR will enlist the support of The Conservation Fund as a contractor in this effort. The Conservation Fund helps city and county planners, regional and watershed organizations, natural resource agencies, economic development agencies, transportation departments, and nonprofits design comprehensive and customized strategies that balance land protection and development. The Fund focuses on large-scale landscape level conservation strategies. The Fund develops comprehensive green infrastructure plans that identify community stakeholders, designs green infrastructure networks, and develops strategies for implementation. The Fund is currently developing a green infrastructure network for the NiSource MSHCP that is using a similar approach to identifying mitigation opportunities for a multi-state, multi-species habitat conservation plan, the first application of such an approach in the country.

Project Statement or Summary: IDNR will assist with developing a multi-species, multi-state habitat conservation plan (MSHCP) that will provide significant conservation benefits to certain species listed under the Endangered Species Act (ESA). There are currently ten (10) federally-listed endangered, threatened and candidate species in Indiana in the Midwest Regional Wind Development HCP species list. MSHCP cooperators prefer an approach that addresses a full range of ongoing activities holistically and identifies and manages species and habitat impacts with more of a cooperative conservation scale that is landscape oriented. Specifically IDNR will perform the following tasks:

1. MSHCP Development and Review

2. NEPA Compliance and Review

3. Development of a Process to Identify Potential Mitigation Sites

4. Development of Potential Mitigation Site Reports

5. Development of Operational Mitigation Measures

IDNR will enlist the support of The Conservation Fund as a contractor in this effort. The Fund will coordinate the work of the 8 States for the tasks outlined above.

Objective: Work collaboratively with FWS, industry and the other affected states on the MSHCP to provide a means to avoid, minimize, and mitigate for adverse effects to rare species caused by wind energy development activities across the 8 states.

Approach:

Task 1: MSHCP Development and Review

Obtain FTE, or equivalent with HCP development expertise, to oversee and facilitate development of 8 state, MSHCP. State peer review of the draft MSHCP document review may vary by state but will include review of background and introductory chapters to the MSHCP as well as work on avoidance and minimization measures and technical species review.

Product 1: Development of the MSHCP

Product 2: State comments pertaining to various chapters of the MSHCP. Format of these comments will vary depending on the chapters reviewed, but all comments will be maintained in a central database.

Indiana Cost = **$ 1,500,000**

Task 2: NEPA Compliance and Review

Obtain the services of an experienced NEPA contractor working on behalf of the States and Industry. States will participate by reviewing and providing comments on the NEPA documents.

Product 1: Development of the NEPA documents.

Product 2: State comments on the NEPA documents.

Indiana Cost = **$ 800,000**

Task 3: Development of a Process to Identify Potential Mitigation Sites:

In order to ensure a consistent and effective mitigation approach across the region, the states will work cooperatively to develop a process for identifying and selecting mitigation sites. This process will be developed cooperatively by the states, industry, and the Service and will be coordinated by The Conservation Fund as agreed to by the states and industry. After the process is developed, the states will then use the process to identify potential mitigation sites in their state – see Development of Potential Mitigation Site Reports Task 4.

The process for identifying and selecting the mitigation sites is described in detail in the main Section 6 grant proposal entitled: "Development of a Multi-Species Habitat Conservation Plan for
Wind Energy Development in USFWS Region 3." The process includes data information and discovery (including the convening of focus groups with the other States) and the green infrastructure network design that will be completed across the 8-state region. This process will result in three products:

Product 1: An inventory and quality assessment of baseline mapping data and related information as well as a process for identifying and filling data gaps needed to complete Product 3-3 below. The final product will be a resource inventory database consisting of GIS data layers with supporting metadata and related information.

Product 2: A documented methodology for defining scales, establishing criteria, and delineating green infrastructure network elements (e.g. hubs, cores, and corridors). This methodology will be a brief written report and will be used to produce Product 3-3 below.

Product 3: A Green Infrastructure Network Design covering the 8-state area. This product will be a series of GIS data layers and maps delineating the network.

Indiana Cost: = **$1,500,000**

Task 4: Development of Potential Mitigation Site Reports

As part of the planning process and in order to better anticipate implementation of the plan, some states will be involved in developing potential mitigation site reports. These reports will serve as source material for industry as it develops mitigation packages in the MSHCP and also can be used by the state agencies for other purposes including State Wildlife Plan implementation and other conservation planning.

The process for identifying and selecting the mitigation sites is described in detail in the main Section 6 grant proposal entitled: "Development of a Multi-Species Habitat Conservation Plan for Wind Energy Development in USFWS Region 3." The Conservation Fund will be developing preliminary and final guidelines for state potential mitigation site reports, which will include criteria for identifying costs and benefits of potential mitigation opportunities. This process will result in two products:

Product 1: Guidance document to States on identifying potential site mitigation opportunities (this will ensure consistent information and criteria is used to identify mitigation sites. This guidance will be given to states, the Service, and all parties who may identify potential mitigation sites.)

Product 2: A decision-support framework for evaluating and ranking of submitted mitigation sites. This will likely take the form of a series of GIS models and spreadsheets that are designed for non-technical users to rank and optimize mitigation site selection opportunities.

Indiana Cost = **$ 345,000**

Task 5: Development of Operational Mitigation Measures

While habitat protection and management may be an effective mitigation for habitat loss, mortality of listed species from wind turbines must also be minimized and in some cases mitigated. Effective mitigation should focus on strategies for operating turbines in such as way as to reduce mortality of listed species. Few tested operational mitigation measures currently exist.

Product 1: Report identifying effective operational mitigation to reduce mortality of listed species and criteria for implementation

Product 2: Report identifying potential operational mitigation tools that need additional ground-truthing and could be implemented through the MSHCP, and criteria for implementation.

Indiana Cost = **$ 229,554**

Total cost to the IDNR = $4,374,554

APPLICATION FOR FEDERAL ASSISTANCE

Version 7/03

		2. DATE SUBMITTED 08/11/2009	Applicant Identifier
1. TYPE OF SUBMISSION: Application	Pre-application	**3. DATE RECEIVED BY STATE**	State Application Identifier
☐ **Construction**	☐ **Construction**	**4. DATE RECEIVED BY FEDERAL AGENCY**	Federal Identifier
☒ **Non-Construction**	☐ **Non-Construction**		

5. APPLICANT INFORMATION

Legal Name: Iowa Department of Natural Resources	**Organizational Unit:** Department:
Organizational DUNS: 010272532	Division: Finance Bureau
Address: Street: 502 E. 9th Street- Wallace State Office Building	**Name and telephone number of person to be contacted on matters involving this application (give area code)** Prefix: Mr. First Name: Mike
City: Des Moines	Middle Name
County: Polk	Last Name Heldenbrand
State: Iowa Zip Code 50319-0034	Suffix:
Country: US	Email: Mike.Heldenbrand@dnr.state.ia.us
6. EMPLOYER IDENTIFICATION NUMBER *(EIN)*: 42-6004572	Phone Number (give area code) (515) 281-5631 / Fax Number (give area code) (515) 281-6794
8. TYPE OF APPLICATION: ☒ **New** ☐ **Continuation** ☐ **Revision** If Revision, enter appropriate letter(s) in box(es) (See back of form for description of letters.) Other (specify)	**7. TYPE OF APPLICANT:** (See back of form for Application Types) A. State Other (specify)
	9. NAME OF FEDERAL AGENCY: U.S. Department of Interior, Fish and Wildlife Service
10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 15-615 TITLE (Name of Program): Section 6	**11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:** Midwest Region Wind Development HCP-Iowa Plan
12. AREAS AFFECTED BY PROJECT *(Cities, Counties, States, etc.)*: Statewide	
13. PROPOSED PROJECT Start Date: 06/01/2010 Ending Date: 05/31/2012	**14. CONGRESSIONAL DISTRICTS OF:** a. Applicant 04 b. Project 01-05

15. ESTIMATED FUNDING:

a. Federal	$ 240,000.00
b. Applicant	$ 40,000.00
c. State	$
d. Local	$
e. Other	$
f. Program Income	$
g. TOTAL	$ 280,000.00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. Yes. ☒ THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON

DATE:

b. No. ☐ PROGRAM IS NOT COVERED BY E. O. 12372

☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?

☐ Yes If "Yes" attach an explanation. ☒ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Authorized Representative

Prefix Mr.	First Name Mike	Middle Name
Last Name Heldenbrand		Suffix
b. Title Federal Aid Coordinator		c. Telephone Number (give area code) (515) 281-5631
d. Signature of Authorized Representative Mike Heldenbrand		e. Date Signed 8/11/09

Fields of Opportunities

STATE OF IOWA

CHESTER J. CULVER, GOVERNOR
PATTY JUDGE, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
RICHARD A. LEOPOLD, DIRECTOR

August 10, 2009

Kris Hoellen
Director, Conservation Leadership Network The Conservation Fund
698 Conservation Way
Shepherdstown, WV 25443

Dear Ms Hoellen,

This letter is to confirm that the State of Iowa will participate in the development of a multi-state, multi-species wind energy habitat conservation plan (HCP) and in the section 6 state assistance planning grant that will provide conservation benefits to species protected under the Endangered Species Act (ESA). The HCP will support the issuance of incidental take permits by the U.S. Fish and Wildlife Service (Service) that will provide take coverage for construction, operation, and maintenance of Wind Energy and ancillary facilities in the Midwest region.

Such an HCP provides our state a unique opportunity to assist the wind energy industry in developing cooperative and innovative approaches to achieve regulatory compliance with the ESA, while seeking to accomplish the broader conservation and recovery goals of the ESA. It is our understanding that the planning area for this HCP will include the states of Minnesota, Iowa, Missouri, Illinois, Wisconsin, Indiana, Michigan, and Ohio and will evaluate lands within each state to identify priority areas for future wind development, as well as areas already supporting wind energy facilities

By proactively approaching ESA compliance on a regional basis, the States, the Service, and other stakeholders (e.g. the Federal Energy Regulatory Commission and Army Corps of Engineers) can work together with wind energy companies to develop practices that avoid, minimize and mitigate the impacts that wind energy may have on protected species, while supporting growth of the industry in a environmentally sustainable manner.

Thank you very much for considering this proposal.

Sincerely,

Ken Herring

Kenneth Herring, Administrator
Division of Conservation and Recreation

502 EAST 9th STREET / DES MOINES, IOWA 50319-0034
PHONE 515-281-5918 FAX 515-281-6794 www.iowadnr.gov

STATE OF IOWA

CHESTER J. CULVER, GOVERNOR
PATTY JUDGE, LT. GOVERNOR

DEPARTMENT OF MANAGEMENT
CHARLES J. KROGMEIER, DIRECTOR

August 11th, 2009

TO:
Interior, U.S. Department of

FROM:
Kathy Mabie
Iowa Grants Management Director
Grants Enterprise Management Office
Iowa Department of Management

RE:
Grant Title – Section 6 Endangered Species Act

GRANT CONTACT INFO:
Mike Heldenbrand
Natural Resources, Iowa Department of
5152815631
mike.heldenbrand@dnr.iowa.gov

You are receiving this letter as evidence that the required Iowa Grants Enterprise Management (GEMS) Review of the Section 6 Endangered Species Act grant application has been completed.

The Iowa Grants Enterprise Management Office recommends that the application be approved for funding. If you have questions please contact Mike Heldenbrand as listed above.

IOWA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF CONSERVATION AND RECREATION and Division of Environmental Services

The mission of the Iowa Department of Natural Resources is: *To conserve and enhance our natural resources in cooperation with individuals and organizations to improve the quality of life in Iowa and ensure a legacy for future generations.* Two Divisions with the Department, Division of Conservation and Recreation and Environmental Services, will work together to accomplish the objectives defined in the HCP grant proposal.

There are 12 federal listed or candidate species in Iowa that may be affected by wind power development in Iowa as determined by the USFWS Field Office. The Iowa Department of Natural Resources will participate in the plan development and will perform the following tasks:

1. Conduct an acoustical and mist net survey for Indian bats in western Iowa.
2. Complete updated land cover mapping for all counties within the known and potential range of the Indiana bat in Iowa.
3. MSHCP Document Review
4. NEAPA Compliance Review
5. Development of a Process to Identify Potential Mitigation Sites
6. Development of Potential Mitigation Site Reports

<u>Iowa Research</u>

Indiana Bat Survey for western Iowa

The expansion of wind power developments into southwest Iowa calls attention to the need to better delineate the range of the Indiana bat in Iowa. Previous surveys by Clark et al. (1987), Iowa DNR staff, and several development projects have delineated south-central and southeast as the summer range of the species in Iowa. In Missouri the counties adjacent to Iowa in the southwest are listed as within the range of the Indiana bat by the Missouri Department of Conservation and the U.S. Fish and Wildlife Service. It therefore appears that the species is very likely to be found during summer in southwest Iowa. These counties were not included in previous surveys for the species

Iowa Department of Natural Resources proposes to contract for acoustical monitoring, a mist net survey, and radio telemetry tracking of Indiana bats in 5 counties (Adams, Dallas, Fremont, Guthrie and Pottawattamie) in west-central and southwest Iowa. The survey will be conducted during the summer of 2010 if all federal approvals are received and a contract is signed by June 1, 2010. If there is a delay past June 1, 2010 the survey work will be completed by July 15, 2011.

Anabat detectors will be used to collect data on bat activity and determine if Myotis species are present at 50 sites in the five counties. Based on the results of the acoustical surveys, 20 sites with the greatest potential for Indiana bats will be mist netted. However,

a minimum of two sites will be mist netted in any county. The mist net survey will follow the USFWS Indiana Bat Mist-Netting Guidelines.

The contractor and Iowa DNR personnel will attach miniature radio transmitters on up to five adult Indiana bats at each site where Indiana bats are captured. Tracking will identify roost sites and provide information on movements. The transmitters will be attached using Skin-Bond or a similar surgical glue. Tracking will be conducted for a maximum of three days or until the bat can no longer be located.

Clark, B. K., J. B. Bowles, and B. S. Clark. 1987. Summer status of the endangered Indiana bat in Iowa. American Midland Naturalist 118:32-39.

Indiana Bat Survey of Western Iowa		
The IDNR will contract with a qualified consultant		$155,000.00
Field Review of Selected Survey Sites		
60 hours IDNR Staff at $50/hour (includes fringes)		$ 3,000.00

Iowa Land Cover Update

The IDNR GIS Section is in the process of assembling the information needed to develop high-resolution land cover coverage for the state. This coverage will be needed to develop accurate mitigation site reports. If funding is received through this grant the IDNR will be able to devote a fulltime position to completing the coverage by September 2011 so that it can be used to in the development of the potential mitigation site reports.

Land Cover Mapping		
1600 hours at $50/hour (includes fringes)		$ 80,000.00
Federal Share	$ 40,000.00	
State Share	$ 40,000.00	
MSHCP Document Review		
160 hours at $50/hour (includes fringes)		$ 8,000.00
NEAPA Compliance Review		
220 hours at $50/hour (includes fringes)		$ 11,000.00
Development of a Process to Identify Mitigation Sites		
160 hours at $50/hour (includes fringes)		$ 8,000.00
Development of Potential Mitigation Site Reports		
200 hours at $50/hour (includes fringes)		$ 10,000.00
Grant Coordination and Fiscal Management		
100 hours at $50/hour (includes fringes)		$ 5,000.00

Total Project	$280,000
Federal Share	$240,000
State	$ 40,000

APPLICATION FOR FEDERAL ASSISTANCE

Version 7/03

2. DATE SUBMITTED August 19, 2009	Applicant Identifier	
3. DATE RECEIVED BY STATE	State Application Identifier Michigan	
4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier	

1. TYPE OF SUBMISSION:

Application :	Pre-application
☐ **Construction**	☐ **Construction**
☑ **Non-Construction**	☐ **Non-Construction**

5. APPLICANT INFORMATION

Legal Name: MICHIGAN DEPARTMENT OF NATURAL RESOURCES

Organizational DUNS: 805339991

Address:

Street: PO BOX 30028

City: LANSING

County: INGHAM

State: MI Zip Code: 48909-7528

Country: USA

Organizational Unit:

Department: Michigan Department of Natural Resources

Division: Wildlife

Name and telephone number of person to be contacted on matters involving this application (give area code)

Prefix: Mr. First Name: Eric

Middle Name:

Last Name: Sink

Suffix:

Email: sinke@michigan.gov

Phone Number (give area code) (517) 335-1064

Fax Number (give area code) (517) 373-1547

6. EMPLOYER IDENTIFICATION NUMBER *(EIN)*: 38-6000134

8. TYPE OF APPLICATION: New

If Revision, enter appropriate letter(s) in box(es)

(See back of form for description of letters.)

None None

Other (specify):

7. TYPE OF APPLICANT: (See back of form for Application Types)

A. State Government

Other (specify):

9. NAME OF FEDERAL AGENCY: **U.S. DOI - Fish & Wildlife Service**

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER:

15.615 - Cooperative Endangered Species Conservation

Other (specify):

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:

Multi-species Habitat Conservation Plan for Midwest Wind Development - Michigan Portion

12. AREAS AFFECTED BY PROJECT *(Cities, Counties, States, etc.)*:

Statewide

13. PROPOSED PROJECT

Start Date: Ending Date:

14. CONGRESSIONAL DISTRICTS OF:

a. Applicant: Eighth b. Project:

15. ESTIMATED FUNDING:

a. Federal	$	223,446
b. Applicant	$	0
c. State	$	0
d. Local	$	0
e. Other	$	24,827
f. Program Income	$	0
g. TOTAL	$	248,274

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. YES ☐ THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON

DATE:

b. NO ☐ PROGRAM IS NOT COVERED BY E. O. 12372

☑ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?

Yes ☐ If "Yes" attach an explanation. No ☑

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES.

a. Authorized Representative

Prefix: Ms. First Name: Mindy Middle Name: S.

Last Name: Koch Suffix:

b. Title: Resource Management Deputy

c. Telephone Number (give area code) (517) 373-0046

Email:

Fax Number (give area code) (517) 373-1164

d. Signature of Authorized Representative

e. Date Signed: August 19, 2009

BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 3048-0044

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1.		$0	$0	$223,446	$24,827	$248,274
2.						$0
3.						$0
4.						$0
5. Totals		$0	$0	$223,446	$24,827	$248,274

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT SEGMENT BUDGET DETAILS (Segment 1)	(Segment 2)	(Segment 3)	(Segment 4)	Total (5)
a. Personnel	$16,600				$16,600
b. Fringe Benefits	$6,308				$6,308
c. Travel	$0				$0
d. Equipment	$0				$0
e. Supplies	$0				$0
f. Contractual	$220,000				$220,000
g. Construction	$0				$0
h. Other - Audit - 0.0038	$940	$0			$940
i. Total Direct Charges *(sum of 6a-6h)*	$243,848	$0			$243,848
j. Indirect Charges - 0.1932	$4,426	$0			$4,426
k. TOTALS *(sum of 6i-6j)*	$248,274	$0			$248,274
7. Program Income	$0	$0	$0	$0	$0

SECTION C - NON-FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8.		$0	$24,827	$24,827
9.				$0
10.				$0
11.				$0
12. TOTAL *(sum of lines 8-11)*	$0	$0	$24,827	$24,827

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	**1st Quarter**	**2nd Quarter**	**3rd Quarter**	**4th Quarter**
13. Federal	$111,723	$27,931	$27,931	$27,931	$27,931
14. Non-Federal	$12,414	$3,103	$3,103	$3,103	$3,103
15. TOTAL *(sum of lines 13 and 14)*	$124,137	$31,034	$31,034	$31,034	$31,034

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
	FUTURE FUNDING PERIODS (Years)			
(a) Grant Program	(b) First	(c) Second	(d) Third	(e) Fourth
16.	$111,723.16	$0	$0	$0
17.				
18.				
19.				
20. TOTAL *(sum of lines 16-19)*	$111,723	$0	$0	$0

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges: 19.32% on Personnel and Fringe Benefits
23. Remarks:	

STATE OF MICHIGAN

DEPARTMENT OF NATURAL RESOURCES

LANSING

JENNIFER M. GRANHOLM
GOVERNOR

REBECCA A. HUMPHRIES
DIRECTOR

August 5, 2009

Ms. Kris Hoellen, Director
Conservation Leadership Network
The Conservation Fund
698 Conservation Way
Shepherdstown, West Virginia 25443

SUBJECT: Midwest Wind Energy Habitat Conservation Plan - Grant Application

Dear Ms. Hoellen:

This letter is to confirm that the State of Michigan will participate in the development of a multi-state, multi-species, wind energy habitat conservation plan (HCP) and in the Section 6 State assistance planning grant, which will provide conservation benefits to species protected under the Endangered Species Act (ESA). The HCP will support the issuance of incidental take permits by the U.S. Fish and Wildlife Service (Service) which will provide take coverage for construction, operation, and maintenance of wind energy and ancillary facilities in the Midwest region.

Such an HCP provides Michigan a unique opportunity to assist the wind energy industry in developing cooperative and innovative approaches to achieve regulatory compliance with the ESA, while seeking to accomplish the broader conservation and recovery goals of the ESA. It is our understanding that the planning area for this HCP will include the states of Minnesota, Iowa, Missouri, Illinois, Wisconsin, Indiana, Michigan, and Ohio, and will evaluate lands within each state to identify priority areas for future wind development, as well as areas already supporting wind energy facilities.

By proactively approaching ESA compliance on a regional basis, the states, the Service, and other stakeholders (e.g., the Federal Energy Regulatory Commission and Army Corps of Engineers) can work together with wind energy companies to develop practices that avoid, minimize, and mitigate the impacts that wind energy may have on protected species, while supporting growth of the industry in a environmentally sustainable manner.

NATURAL RESOURCES COMMISSION
Keith J. Charters, Chair • Mary Brown • Hurley J. Coleman, Jr • John Madigan • Timothy L. Nichols • J. R. Richardson • Frank Wheatlake

STEVENS T. MASON BUILDING • P.O. BOX 30028 • LANSING, MICHIGAN 48909-7528
www.michigan.gov/dnr • (517) 373-2329

Great Lakes, Great Times, Great Outdoors!

Thank you very much for considering this proposal. If you have any questions or need additional information, please contact Mr. Christopher Hoving, Endangered Species Coordinator, Wildlife Division, at 517-373-1263, or you may contact me.

Sincerely,

Rebecca A. Humphries
Director
517-373-2329

cc: Ms. Mindy Koch, Resource Management Deputy, DNR
Mr. Dennis Knapp, Asst. to the Resource Mgt. Deputy, DNR
Dr. Russ Mason, DNR
Dr. Patrick Lederle, DNR
Mr. Christopher Hoving, DNR

Project Title: Wind Turbine HCP: Bat and Bird Migration along the Great Lakes Coastline in High Priority Wind Energy Development Areas

Submitted by: Barbara J. Barton
Michigan Natural Features Inventory
Stevens T. Mason Bld.
530 W. Allegan St.
Lansing, MI 48909
(734) 576-8427
bartonb1@michigan.gov

Date: August 11, 2009

Project Period: 2010-2012

Total Budget: $466,763
($141,800 - Year 1, $156,301 – Year 2, $162,875 Year 3)

Project Statement:

In this multi-year study, we are conducting a survey as to whether bats and birds follow linear migration routes adjacent to the Great Lakes coastline in high priority wind development areas in order to inform wind turbine siting. Answering this question is important to the wind-power industry because it may affect placement of individual turbines and perhaps entire wind farms. Areas of high persistent winds frequently occur along coastlines and our study will help determine whether wind farms placed in such areas will have a greater impact on bats than wind developments that are placed elsewhere. By learning the migratory habits of bats and birds, specifically whether they are using the coastline, inland pathways, or offshore routes, wind energy developers can significantly reduce negative impacts to bats by siting wind turbines in non-migratory areas. The Ontario Ministry of Natural Resources, our collaborator in Canada, is addressing the question of east/west migration in Lakes Huron, Ontario, and Erie under separate funding. The results of these studies will provide valuable information on bat migration in the Great Lakes. This information will also be useful to local planning agencies as they develop guidelines for wind turbine siting. HCP funding will allow us to expand our pilot project to study the Lake Michigan coastline, which is being funded in 2010 by a grant from the U.S. Department of Energy, into other priority Great Lakes coastal areas.

Objectives:

The objective of this study is to monitor and record the presence bats and nocturnal migrant birds in a north-south direction and in association with the Saginaw Bay, Lake Superior shoreline in the Whitefish Point area, and the Lake Michigan/Lake Huron Shorelines and islands at the Straights of Mackinaw.

BUDGET

Below is a proposed budget for a three year study which includes Saginaw Bay (2010), the southeast shoreline of Lake Superior (Whitefish Point area) (2011) and the Straights of Mackinaw (2012).

Budget Item	**Year 1 2010**	**Year 2 2011**	**Year 3 2012**	**TOTAL**
Salary and fringes	$42,240	$44,352	$46,570	**$133,162**
Administration	$22,513	$23,639	$24,821	**$70,973**
Travel	$12,835	$14,810	$14,310	**$41,955**
Subcontract	$70,000	$73,500	$77,175	**$220,675**
Total	**$147,588**	**$156,300**	**$162,875**	**$466,763**

Total contribution from FWS Section 6 HCP: **$223,446**
Other Sources: **$ 24,827**

Total: $248,274

APPLICATION FOR FEDERAL ASSISTANCE

Version 7/03

2. DATE SUBMITTED 08/10/2009	Applicant Identifier Missouri	
3. DATE RECEIVED BY STATE	State Application Identifier HCP multi-state	
4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier	

1. TYPE OF SUBMISSION:

Application	Pre-application
☐ Construction	☐ Construction
☒ Non-Construction	☐ Non-Construction

5. APPLICANT INFORMATION

Legal Name: Missouri Department of Conservation	Organizational Unit:
	Department:
Organizational DUNS 879016764	Division: Wildlife Division
Address:	Name and telephone number of person to be contacted on matters involving this application (give area code)
Street: 2901 West Truman Blvd.	Prefix: Mr. First Name: Daniel
City: Jefferson City	Middle Name T.
County: Cole	Last Name Zekor
State: MO Zip Code 65109	Suffix:
Country: USA	Email: Daniel.Zekor@mdc.mo.gov
6. EMPLOYER IDENTIFICATION NUMBER *(EIN)*: 4 4 - 6 0 0 0 0 9 8 7	Phone Number (give area code) (573) 522-4115 / Fax Number (give area code) (573) 526-3976
8. TYPE OF APPLICATION: ☒ New ☐ Continuation ☐ Revision If Revision, enter appropriate letter(s) in box(es) (See back of form for description of letters.) Other (specify)	**7. TYPE OF APPLICANT:** (See back of form for Application Types) A. State Other (specify)
	9. NAME OF FEDERAL AGENCY: U.S. Department of Interior, Fish and Wildlife Service
10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 1 5 - 6 1 6 TITLE (Name of Program): HCP Planning Grant	**11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:** Region 3 Wind Development HCP.
12. AREAS AFFECTED BY PROJECT *(Cities, Counties, States, etc.)*: FWS Region 3 States	
13. PROPOSED PROJECT Start Date / Ending Date:	**14. CONGRESSIONAL DISTRICTS OF:** a. Applicant 4 / b. Project MO-All

15. ESTIMATED FUNDING:

a. Federal	$ 0.00
b. Applicant	$
c. State	$ 0.00
d. Local	$
e. Other	$
f. Program Income	$
g. TOTAL	$

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. Yes. ☐ THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON

DATE

b. No. ☐ PROGRAM IS NOT COVERED BY E. O. 12372

☒ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?

☐ Yes If "Yes" attach an explanation ☒ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Authorized Representative

Prefix Mr.	First Name Daniel	Middle Name T.
Last Name Zekor		Suffix
b. Title Federal Aid Coordinator		c. Telephone Number (give area code) (573) 522-4115
d. Signature of Authorized Representative		e. Date Signed

MISSOURI DEPARTMENT OF CONSERVATION

Headquarters

2901 West Truman Boulevard, P.O. Box 180, Jefferson City, Missouri 65102-0180

Telephone: (573) 751-4115 ▲ Missouri Relay Center: 1-800-735-2966 (TTY)

JOHN D. HOSKINS, Director

August 10, 2009

Kris Hoellen
Director, Conservation Leadership Network, The Conservation Fund
698 Conservation Way
Shepherdstown, WV 25443

Dear Ms. Hoellen:

The Missouri Department of Conservation supports the need for a multi-state, multi-species wind energy habitat conservation plan (HCP) that could provide conservation benefits to species protected under the Endangered Species Act (ESA) and to state-listed species. By proactively approaching ESA compliance and state interests on a regional basis, the States and the U.S. Fish and Wildlife Service (USFWS) can work together with wind energy companies to develop practices that avoid, minimize, and mitigate the potential impacts that wind energy may have on protected plants and animals. The desired outcome of these cooperative efforts is to support an emerging alternative energy industry and to provide implementation solutions that are environmentally sustainable.

A multi-state HCP provides Missouri a unique opportunity to assist the wind energy industry in developing cooperative and innovative approaches to achieve regulatory compliance with the ESA, while accomplishing the broader conservation and recovery goals of the ESA and state interests in protecting and managing public-trust fish, forest, and wildlife resources It is our understanding that the planning area for this HCP will include the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin.

It will be important to include state interests and state-listed species in the HCP. A disadvantage, from a state perspective, of increasing focus on federally-listed species and the guidelines in an HCP, could be fewer opportunities to provide comments on development activities that impact state-listed species and the lands that support them. In Missouri for example, prairie chickens, grassland birds, and grassland communities are of particular concern and could be impacted by wind energy development.

We appreciate your coordination and efforts to work with the USFWS to develop the proposal. Doyle Brown, Policy Coordinator, will be the primary contact for Missouri if you have questions and may be contacted at Doyle.Brown@mdc.mo.gov or 573-522-4115 Extension 3355. Doyle should receive drafts of the proposal for review and comment.

Sincerely,

John Hoskins

JOHN D. HOSKINS
DIRECTOR

JDH:DT:mh

c: Charlie Scott, U.S. Fish & Wildlife Service

COMMISSION

DON C. BEDELL
SIKESTON

DON R. JOHNSON
Festus

CHIP McGEEHAN
Marshfield

BECKY L. PLATTNER
Grand Pass

APPLICATION FOR FEDERAL ASSISTANCE

Version 7/03

1. TYPE OF SUBMISSION: Application ☐ Construction ☒ Non-Construction	Pre-application ☐ Construction ☒ Non-Construction	**2. DATE SUBMITTED**	Applicant Identifier
		3. DATE RECEIVED BY STATE	State Application Identifier
		4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

5. APPLICANT INFORMATION

Legal Name: STATE OF OHIO	Organizational Unit:
	Department: Department of Natural Resources
Organizational DUNS: 198568982	Division: Division of Wildlife
Address:	Name and telephone number of person to be contacted on matters involving this application (give area code)
Street: 2045 Morse RD	Prefix: Mr. First Name: Keith
City: Columbus	Middle Name DeWitt
County: Franklin	Last Name Lott
State: Ohio Zip Code 43229-6693	Suffix:
Country: United States	Email: keith.lott@dnr.state.oh.us
6. EMPLOYER IDENTIFICATION NUMBER *(EIN)*: 31-1334820	Phone Number (give area code) (419) 602-3141 / Fax Number (give area code) (419) 433-2851
8. TYPE OF APPLICATION: ☒ New ☐ Continuation ☐ Revision If Revision, enter appropriate letter(s) in box(es) (See back of form for description of letters.) Other (specify)	**7. TYPE OF APPLICANT:** (See back of form for Application Types) A. State Other (specify) **9. NAME OF FEDERAL AGENCY:** U.S. Department of Interior, Fish and Wildlife Service
10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 15-615 TITLE (Name of Program): Coop. Endangered Species Conservation	**11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:** Development of a Multi-Species Habitat Conservation Plan for Wind Energy Development in USFWS Region 3 (Midwest Region Wind Development HCP)
12. AREAS AFFECTED BY PROJECT *(Cities, Counties, States, etc.)*: State of Ohio	
13. PROPOSED PROJECT Start Date: 01/01/2010 Ending Date: 12/31/2011	**14. CONGRESSIONAL DISTRICTS OF:** a. Applicant all b. Project

15. ESTIMATED FUNDING:

a. Federal	$ 162,000.00
b. Applicant	$
c. State	$
d. Local	$
e. Other	$ 16,200.00
f. Program Income	$
g. TOTAL	$ 178,200.00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. Yes. ☐ THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON

DATE:

b. No. ☒ PROGRAM IS NOT COVERED BY E. O. 12372

☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?

☐ Yes If "Yes" attach an explanation. ☒ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Authorized Representative

Prefix Mr.	First Name Sean	Middle Name D.
Last Name Logan		Suffix
b. Title Director, Ohio Department of Natural Resources		c. Telephone Number (give area code) (614) 265-6879
d. Signature of Authorized Representative Anthony G. Williams A.D. (For)		e. Date Signed 8/19/09

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Authorized for Local Reproduction

Standard Form 424 (Rev.9-2003)
Prescribed by OMB Circular A-102

David M. Graham, Chief, Wildlife

8-19-09
Date

APPLICATION FOR FEDERAL ASSISTANCE

Version 7/03

1. TYPE OF SUBMISSION: Application ☐ Construction ☒ Non-Construction	Pre-application ☐ Construction ☒ Non-Construction	**2. DATE SUBMITTED**	Applicant Identifier
		3. DATE RECEIVED BY STATE	State Application Identifier
		4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

5. APPLICANT INFORMATION

Legal Name: STATE OF OHIO	Organizational Unit:
	Department: Department of Natural Resources
Organizational DUNS: 198568982	Division: Division of Wildlife
Address:	Name and telephone number of person to be contacted on matters involving this application (give area code)
Street: 2045 Morse RD	Prefix: Mr. First Name: Keith
City: Columbus	Middle Name DeWitt
County: Franklin	Last Name Lott
State: Ohio Zip Code 43229-6693	Suffix:
Country: United States	Email: keith.lott@dnr.state.oh.us
6. EMPLOYER IDENTIFICATION NUMBER *(EIN)*: 3 1 – 1 3 3 4 8 2 0	Phone Number (give area code) (419) 602-3141 Fax Number (give area code) (419) 433-2851
8. TYPE OF APPLICATION: ☒ New ☐ Continuation ☐ Revision If Revision, enter appropriate letter(s) in box(es) (See back of form for description of letters.) Other (specify)	**7. TYPE OF APPLICANT:** (See back of form for Application Types) A. State Other (specify)
	9. NAME OF FEDERAL AGENCY: U.S. Department of Interior, Fish and Wildlife Service
10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 1 5 – 6 1 5 TITLE (Name of Program): Coop. Endangered Species Conservation	**11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:** Development of a Multi-Species Habitat Conservation Plan for Wind Energy Development in USFWS Region 3 (Midwest Region Wind Development HCP)
12. AREAS AFFECTED BY PROJECT *(Cities, Counties, States, etc.)*: State of Ohio	
13. PROPOSED PROJECT Start Date: 01/01/2010 Ending Date: 12/31/2011	**14. CONGRESSIONAL DISTRICTS OF:** a. Applicant all b. Project

15. ESTIMATED FUNDING:		**16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?**
a. Federal	$ 162,000.00	a. Yes. ☐ THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON DATE:
b. Applicant	$	
c. State	$	
d. Local	$	b. No. ☒ PROGRAM IS NOT COVERED BY E. O. 12372
e. Other	$ 16,200.00	☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW
f. Program Income	$	**17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?**
g. TOTAL	$ 178,200.00	☐ Yes If "Yes" attach an explanation. ☒ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Authorized Representative Prefix Mr.	First Name Sean	Middle Name D.
Last Name Logan		Suffix
b. Title Director, Ohio Department of Natural Resources		c. Telephone Number (give area code) (614) 265-6879
d. Signature of Authorized Representative Richard H. Mallory AD. (Fin)		e. Date Signed 8/19/09

Previous Edition Usable
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Standard Form 424 (Rev.9-2003)
Prescribed by OMB Circular A-102

David M. Graham, Chief, Wildlife

8-19-09
Date

Introduction

Since 1960 Indiana bat (*Myotis sodalis*) populations have declined by 57% (Clawson 2002). As a result it was placed on the Endangered Species list in 1967. In 2007, the population was estimated to be at 468,184; of which 67% over-winter within USFWS Region 3 (USFWS 2007). Prior to the emergence of White-nose syndrome (WNS), the leading causes of decline were thought to be the loss of suitable breeding and over-wintering habitat.

Indiana bats are considered to be a forest dwelling species (USFWS 2007), foraging along riparian areas, floodplains, wetlands, and upland forests (Cope et al. 1974, Humphrey et al. 1977, Menzel et al. 2001, 2005, Murray and Kurta 2004). Though not usually considered foraging habitat, Indiana bats have been documented spending a considerable amount of time (~50%) feeding over agricultural fields (Menzel et al. 2001, Sparks et al. 2005). Due to the sustained higher wind speeds the focus of much of the development of wind turbine facilities in the Midwest is within agricultural regions. It is unclear as to how far from forests Indiana bats will roam.

These bats are known to travel up to 8.37 km (5.2 miles) from the primary roost tree to feed (Sparks et al. 2005). Foraging heights for this species are poorly documented. Humphrey et al. (1977) estimated through acoustic analysis that Indiana bats forage at heights between 2-30m. In 2001, Menzel et al. pointed out that technological limitations make the detection of any *Myotis* bat at distances greater than 30m using acoustic monitoring unlikely due to the weak strength of their echolocation pulses, so the results of the Humphrey study may have been specious. Capture rates of Indiana bats have been found to be higher at between 7.6 to 10.6m, suggesting that the preferred foraging heights of Indiana bats maybe in the upper canopy (Brack 1983), or even above the canopy (Sparks et al. 2005). It is unknown as to whether these foraging bouts extend within the rotor swept area of a typical wind turbine (between 35-95m depending upon turbine model).

In the fall Indiana bat maternity colonies break up and the bats will migrate up to 545 km (357 miles) to suitable hibernacula sites to over-winter (Winhold and Kurta 2006). Bats will head to hibernacula sites beginning in the first 2 weeks of August through mid-September (Humphrey et al. 1977, Kurta et al. 1993), though this may vary by latitude, so it is unknown during what times of the year wind turbines would not pose a threat to local bats.

Much of Region 3 is considered within the range of the Indiana bat (Figure 1). To date no wind energy facility has been constructed when Indiana bats were found during pre-construction monitoring. Though multiple wind turbine facilities have been constructed within the range of the Indiana bat, none have been found during post-construction mortality studies. Two species with similar feeding and migratory strategies have been found struck at wind turbine facilities, the little brown (*M. lucifugus*) and northern (*M. septentrionalis*) myotis (Arnett et al. 2007).

During the summers of 2008 and 2009 pre-construction mist net surveys were conducted at 5 proposed wind turbine facilities along the Bellefontaine ridge in Central Ohio. Due to low human population densities and high wind energy potential the Bellefontaine ridge is one of the most suitable regions for wind development within the state. As a result of these surveys twenty-four Indiana bats were captured. Radio telemetry led to the identification of at least 6 maternity colonies comprised of several hundred individuals. Maternity colonies are typically comprised of less than 100 adult females (Harvey 2002), though 1 site within the state has over 300 individuals (A. Boyer personal comm. 2009). Indiana bats show strong site fidelity (Kurta and Murray 2002), so it is expected that these individuals and their young will return to this ridge each year, potentially increasing the exposure of bats to turbines and potentially increasing the likelihood of take.

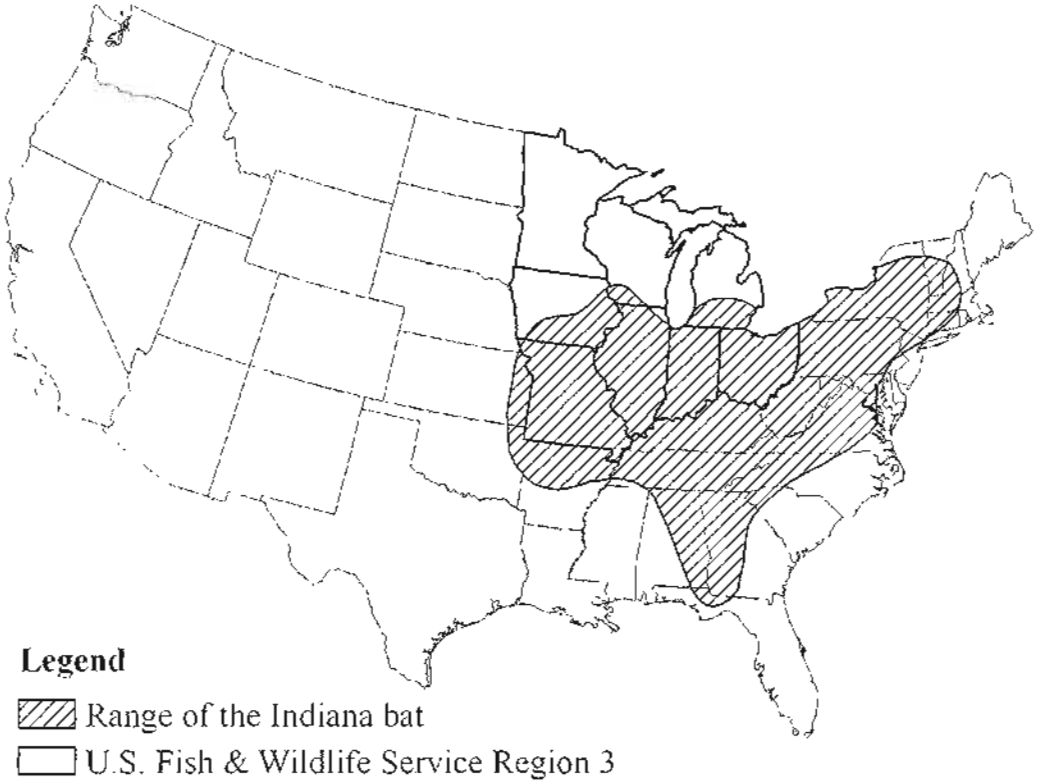
Purpose

- To determine flight heights of Indiana bats in order to assess the likelihood of strike.
- Investigate the maximum distance Indiana bats travel from a forest patch across an agricultural landscape.
- To investigate wind speed thresholds for Indiana bat activity.

Methods

Mist netting will be used to capture Indiana bats from 15 June – 31 July during the summer of 2010. In order to maximize the likelihood of capturing Indiana bats, netting sites will focus on locations near previously identified maternity sites (though no closer than 20m). A maximum of 20 lactating female Indiana bats will be tagged with a combination of a 0.25 gram Lotek radio transmitter, and chemiluminescent light tag. Radio transmitters will be affixed using Skin Bound, or similar adhesive, and light tags with Elmer's paste. This combination maximizes the observations for telemetry, but minimizes the weight since the light tag will most likely be preened off within the night. Between 2-3 bats will be radio tagged on each trapping occasion; and additional incidental captures will be light tagged and banded with Ohio Department of Natural Resources issued lipped metal bands. Observations of light tagged bats will provide information on flight heights (above/below canopy level/estimated height). Telemetry data will be analyzed in ArcGIS version 9.2. This information will be used to determine the distance this species will travel from forest patches and the distance traveled by individual bats each night. Correlations between bat movements and wind speed will be investigated in an appropriate statistical package.

Figure 1.



Map adapted from U.S. Fish & Wildlife Service data

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Kurta, A., D. King, J.A. Teramino, J.M. Stribley, and K.J. Williams. 1993. Summer roosts of the endangered Indiana bat (*Myotis sodalis*) on the northern edge of its range. American Midland Naturalist 129:132-138.

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Winhold, L. and A. Kurta. 2006. Aspects of migration by the endangered Indiana bat, *Myotis sodalis*. Bat Research News 47:1-11.

U.S. Fish and Wildlife Service (USFWS). 2007. Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, MN. 258 pp.

Feeding ecology of bats

- Generally considered to be forest dwelling- wing morphology paper
- Similar to those of little brown and northern myotis
  - Both of which have been found struck at wind turbine sites (Arnett et al. 2007).
- "Optimal foraging habitat is foliage of riparian and floodplain tree" Humphrey et al. 1977.
- Foraging occurs mainly in forested riparian zones and wetlands, and in agricultural areas and upland woods to a lesser extent (Menzel et al. 2001, 2005, Murray and Kurta 2004, Sparks et al. 2005).
- MYSO may forage in both riparian and non-riparian habitats (Humphrey et al. 1977) Survival rates of the endangered Indiana bat. Journal of Mammalogy 58: 33-36.
- Early studies in Indiana suggested MYSO foraged mostly along riparian streams in close proximity to the roost (Cope et al. 1974, Humphrey et al. 1977) and frequently foraged above the canopy (Sparks and Whitaker Jr.).
- Maximum foraging distance 8.37 km (Sparks et al. 2005) Foraging habitat of the IBat at an Urban-rural interface.
- MYSO spent over 50% of it's time foraging over agricultural fields (Sparks et al. 2005).
- Found that Indiana bats foraging height was 2-30m (Humphrey et al. 1977).
- "most myotid calls are difficult to detect with ultrasonic detectors at distances beyond 30m (Menzel et al. 2001).
- Brack (1983) found that Indiana bat capture rates were significantly greater at heights of 7.6 to 10.6m. Preferred foraging heights used by Indiana bats were in the upper canopy.
- Large portions of the Indiana bats home range can occur over agricultural fields. Additional data on point foraging are needed to determine the extent to with Indiana bats forage over agricultural fields (Menzel et al. 2001).

Flight characteristics

- "Cope et al. 1973 described crepuscular flight patterns of *Myotis sodalis* as direct and along hedgerows parallel to a nearby river"
- LaVal et al. 1977 attributed difficulties in trapping Indiana bats to their direct flight pattern. Bats in this study were marked with chemiluminescent tags but were not monitored for feeding pulses.
- MYSO, MYLU, and MYSE did not differ in capture height (Lee and McCracken 2004).

Migration

- "Observations suggest (Gardner and Cook 2002) that most females of this species migrate north in the spring, where they form summer maternity colonies under exfoliating bark of dead trees."
- 575 km migration distance (Winhold and Kurta 2006).

Maternity colonies

- Maternity colonies typically use multiple trees, consisting of 1 primary roost and several alternate roosts.
- Definition of primary and alternate roosts (Callahan et al. 1997).
    - >30 individuals primary roost
    - < 30 alternate roosts
- MYSO shows strong philopatry for maternity sites (site fidelity). Kurta and Murray 2002.
- Homerange size 60-258 ha (Menzel et al. 2005, Romme' et al. 2002)

Methods

Multi-azimuth triangulations, synchronously recorded bearings
LOCATE (is there a newer version?).
Transmitter weight and manufacturer, removal of fur (?), skin bond (check Stantec report for specifics). Light tags.

Landuse/landcover grid (Comparisons for distance to edge ArcGIS).

Misc.

Thermal animal detection systems have also proven useful in quantifying bird and bat behavior, flock size, and flight altitudes in response to wind turbines, and Desholm (2003) believed that employing this technology represents perhaps the best way to obtain these data at night.

Ohio Department of Natural Resources
Division of Wildlife - Budget Information

Project Name:
Development of a Multi-Species Habitat Conservation Plan for Wind Energy Development in USFWS Region 3

Project Dates:
01/01/2010 - 12/31/2011

BUDGET INFORMATION:

Federal Funds -

Salaries/Fringe	$0.00
Travel	$0.00
Equipment	$0.00
Supplies	$0.00
*Contractual	$162,000

Match Funds -

Department of Development	$16,200

Total Grant Request: $178,200

*Environmental Consulting Agency

Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR | SEAN D. LOGAN, DIRECTOR

August 4, 2009

Ms. Kris Hoellen
Director, Conservation Leadership Network
The Conservation Fund
698 Conservation Way
Shepherdstown, WV 25443

Re: Midwest Wind Energy Habitat Conservation Plan - Grant Application

Dear Ms. Hoellen:

Please be advised that the State of Ohio will participate in the development of a multi-state, multi-species wind energy habitat conservation plan (HCP) and in the section 6 state assistance planning grant that will provide conservation benefits to species protected under the Endangered Species Act (ESA). The HCP will support the issuance of incidental take permits by the U.S. Fish and Wildlife Service (Service) that will provide take coverage for construction, operation, and maintenance of Wind Energy and ancillary facilities in Ohio and the Midwest region.

Such an HCP provides our state a unique opportunity to assist the wind energy industry in developing cooperative and innovative approaches to achieve regulatory compliance with the ESA, while seeking to accomplish the broader conservation and recovery goals of the ESA. It is our understanding that the planning area for this HCP will include the states of Minnesota, Iowa, Missouri, Illinois, Wisconsin, Indiana, Michigan, and Ohio and will evaluate lands within each state to identify priority areas for future wind development, as well as areas already supporting wind energy facilities

By proactively approaching ESA compliance on a regional basis, the States, the Service, and other stakeholders (e.g. the Federal Energy Regulatory Commission and Army Corps of Engineers) can work together with wind energy companies to develop practices that avoid, minimize and mitigate the impacts that wind energy may have on protected species, while supporting growth of the industry in a environmentally sustainable manner.

Thank you very much for considering this proposal.

Sincerely,

Sean D. Logan
Director

SDL: cs

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

August 5, 2009

Kris Hoellen
Director, Conservation Leadership Network
The Conservation Fund
698 Conservation Way
Shepherdstown, WV 25443

RE: Midwest Wind Energy Habitat Conservation Plan - Grant Application

Dear Ms Hoellen,

This letter is to confirm that the State of Ohio will participate in the development of a multi-state, multi-species wind energy habitat conservation plan (HCP) [and in the section 6 state assistance planning grant] that will provide conservation benefits to species protected under the Endangered Species Act (ESA). The HCP will support the issuance of incidental take permits by the U.S. Fish and Wildlife Service (Service) that will provide take coverage for construction, operation, and maintenance of Wind Energy and ancillary facilities in the Midwest region.

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Thank you very much for considering this proposal.

Sincerely,

DAVID M. GRAHAM
Chief

DMG/JN/al

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

17 August 2009

To all interested parties,

Since 1960 Indiana bat (*Myotis sodalis*) populations have declined by 57% (Clawson 2002). As a result it was placed on the Endangered Species list in 1967. In 2007, the population was estimated to be at 468,184; of which 67% over-winter within USFWS Region 3 (USFWS 2007). Prior to the emergence of White-nose syndrome (WNS), the leading causes of decline were thought to be the loss of suitable breeding and over-wintering habitat.

Indiana bats are considered to be a forest dwelling species (USFWS 2007), foraging along riparian areas, floodplains, wetlands, and upland forests (Cope et al. 1974, Humphrey et al. 1977, Menzel et al. 2001, 2005, Murray and Kurta 2004). Though not usually considered foraging habitat, Indiana bats have been documented spending a considerable amount of time (~50%) feeding over agricultural fields (Menzel et al. 2001, Sparks et al. 2005). Due to the sustained higher wind speeds the focus of much of the development of wind turbine facilities in the Midwest is within agricultural regions.

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potentially increasing the exposure of bats to turbines and potentially increasing the likelihood of take.

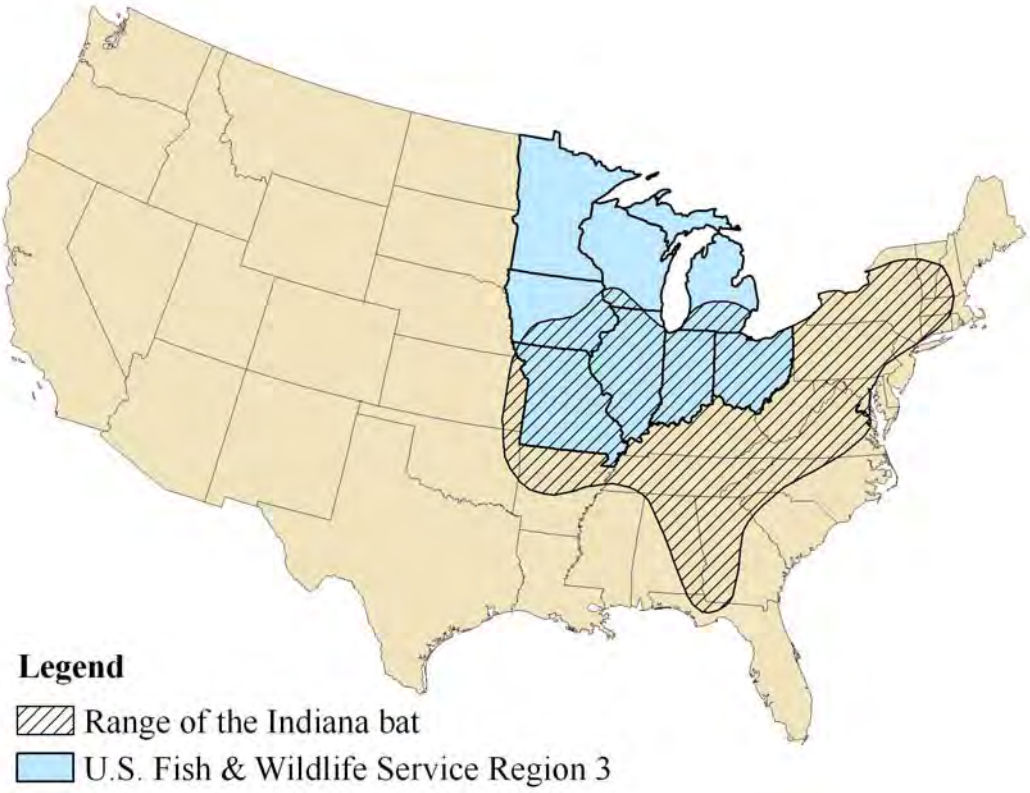
Suitable trees for maternity colonies are dead or dying trees with exfoliating bark, these resources are ephemeral, and new sites need to be located once the previous tree has either fallen or lost its bark. It is unknown how far a colony of bats will wander from the original tree to establish a new colony. The Ohio Department of Natural Resources is proposing monitoring of known colonies of Indiana bats along the Bellefontaine ridge. Emergence counts would be used to track Indiana bat numbers at existing roosts, and radio telemetry would be used to identify alternative roost and core areas of activity. Both pieces of information will be used to avoid and minimize impacts to Indiana bats.

Sincerely,

Keith Lott, Wind Energy Wildlife Biologist

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

Figure 1.



Map adapted from U.S. Fish & Wildlife Service data

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Illinois Department of
Natural Resources
One Natural Resources Way Springfield, Illinois 62702-1271
http://dnr.state.il.us

Pat Quinn, Governor
Marc Miller, Director

August 12, 2009

Ms. Kris Hoellen
Director, Conservation Leadership Network - The Conservation Fund
698 Conservation Way
Shepherdstown, WV 25443

RE: *Midwest Wind Energy Habitat Conservation Plan - Grant Application*

Dear Ms. Hoellen:

This letter is to confirm that the State of Illinois will participate in the development of a multi-state, multi-species wind energy habitat conservation plan (HCP) [and in the Section 6 state assistance planning grant] that will provide conservation benefits to species protected under the Endangered Species Act (ESA). The HCP will support the issuance of incidental take permits by the U.S. Fish and Wildlife Service (Service) that will provide take coverage for construction, operation, and maintenance of Wind Energy and ancillary facilities in the Midwest region.

Such an HCP provides Illinois a unique opportunity to assist the wind energy industry in developing cooperative and innovative approaches to achieve regulatory compliance with the ESA, while seeking to accomplish the broader conservation and recovery goals of the ESA. It is our understanding that the planning area for this HCP will include the states of Minnesota, Iowa, Missouri, Illinois, Wisconsin, Indiana, Michigan, and Ohio and will evaluate lands within each state to identify priority areas for future wind development, as well as areas already supporting wind energy facilities

We believe that by proactively approaching ESA compliance on a regional basis, the States, the Service, and other stakeholders (e.g. the Federal Energy Regulatory Commission and Army Corps of Engineers) can work together with wind energy companies to develop practices that avoid, minimize and mitigate the impacts that wind energy may have on protected species, while supporting growth of the industry in a environmentally sustainable manner.

Thank you very much for your time and consideration. If you have any questions or comments regarding this matter, please do not hesitate to contact Joseph Kath of my staff at (217)785-8764, or via e-mail at: Joe.Kath@illinois.gov.

Sincerely,

Marc Miller
Director
Illinois Department of Natural Resources

cc: John Rogner/IDNR
Glen Kruse/IDNR

MM:jak

Minnesota Department of Natural Resources

Division of Ecological Resources, Box 25
500 Lafayette Road
St. Paul, Minnesota 55155-4025

August 14, 2009

Kris Hoellen
Director, Conservation Leadership Network
The Conservation Fund
698 Conservation Way
Shepherdstown, WV 25443

Subject: Midwest Wind Energy Habitat Conservation Plan - Grant Application

Dear Ms. Hoellen:

This letter is to confirm that the State of Minnesota will participate in the development of a multi-state, multi-species wind energy habitat conservation plan (HCP) that will provide conservation benefits to species protected under the Endangered Species Act (ESA). The HCP will support the issuance of incidental take permits by the U.S. Fish and Wildlife Service (Service) that will provide take coverage for construction, operation, and maintenance of Wind Energy and ancillary facilities in the Midwest region.

Such an HCP provides our state a unique opportunity to assist the wind energy industry in developing cooperative and innovative approaches to achieve regulatory compliance with the ESA, while seeking to accomplish the broader conservation and recovery goals of the ESA. It is our understanding that the planning area for this HCP will include the states of Minnesota, Iowa, Missouri, Illinois, Wisconsin, Indiana, Michigan, and Ohio and will evaluate lands within each state to identify priority areas for future wind development, as well as areas already supporting wind energy facilities

By proactively approaching ESA compliance on a regional basis, the States, the Service, and other stakeholders (e.g. the Federal Energy Regulatory Commission and Army Corps of Engineers) can work together with wind energy companies to develop practices that avoid, minimize and mitigate the impacts that wind energy may have on protected species, while supporting growth of the industry in a environmentally sustainable manner.

Thank you very much for your work on this project.

Sincerely,

Jim Garwood for

Steve Hirsch
Director

Appendix C:

Other Support Documents

TRADEWIND ENERGY®

Harvesting the Power of the Wind

INDUSTRY LETTER

Midwest Wind Energy Habitat Conservation Plan - Grant Application

Dear Ms. Hoellen,

This letter is to confirm that TradeWind Energy (Company) will participate in the development of a multi-state, multi-species habitat conservation plan (HCP) that will provide conservation benefits to species protected under the Endangered Species Act (ESA). The HCP will support the issuance of incidental take permits by the U.S. Fish and Wildlife Service (Service) that will provide take coverage for construction, operation, and maintenance of Wind Energy and ancillary facilities in the Midwest region.

Such an HCP provides our industry a unique opportunity to develop cooperative and innovative approaches to achieve regulatory compliance with the ESA, while seeking to accomplish the broader conservation and recovery goals of the ESA. It is our understanding that the planning area for this HCP will include the states of Minnesota, Iowa, Missouri, Illinois, Wisconsin, Indiana, Michigan, and Ohio and will evaluate lands within each state to identify priority areas for future wind development, as well as areas already supporting wind energy facilities

By proactively approaching ESA compliance on a regional basis, our industry, the States, the Service, and other stakeholders (e.g. the Federal Energy Regulatory Commission and Army Corps of Engineers) can work together to further avoid, minimize and mitigate impacts that our facilities may have on protected species while continuing to operate and grow our industry in a environmentally sustainable manner.

Thank you very much for considering this proposal.

Sincerely,

CEO

Southlake Technology Park 16105 W 113th Street, Suite 105 Lenexa, Kansas 66219 Phone 913 322 7556 Fax 913 888 0290 www.tradewindenergy.com

Wind Capital Group

Bringing Wind Energy Home®

August 19, 2009

Kris Hoellen
The Conservation Fund
698 Conservation Way
Shepherdstown, WV 25443

Dear Ms. Hoellen,

Wind Capital Group is interested in participating in the development of a multi-state, multi-species habitat conservation plan (HCP) that will provide conservation benefits to species protected under the Endangered Species Act (ESA). We understand that the HCP will support the issuance of incidental take permits (if necessary) by the U.S. Fish and Wildlife Service (Service) that will facilitate the construction, operation, and maintenance of Wind Energy and ancillary facilities in the Midwest region.

A HCP provides the wind industry a unique opportunity to develop cooperative and innovative approaches to achieve regulatory compliance with the ESA, and to support the broader conservation and recovery goals of the ESA. It is our understanding that the planning area for this HCP will include the states of Minnesota, Iowa, Missouri, Illinois, Wisconsin, Indiana, Michigan, and Ohio. The plan will evaluate lands within each state to identify priority areas for future wind development, as well as areas already supporting wind energy facilities

By proactively approaching ESA compliance on a regional basis, our industry, the States, the Service, and other stakeholders (e.g. the Federal Energy Regulatory Commission and Army Corps of Engineers) can work together to further avoid, minimize and mitigate impacts that our facilities may have on protected species, while continuing to operate and grow renewable energy in a environmentally sustainable manner.

Thank you very much for considering this proposal.

Sincerely,

Stacy McAnulty

Stacy McAnulty
Senior VP, Construction
Wind Capital Group

www.windcapitalgroup.com

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