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January 3, 2007

Joe Kath
Terrestrial Endangered Species Project Manager
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271

Re: Conservation Plan
Big Sky Windpower Project
Big Sky Wind, LLC
Bureau and Lee Counties, Illinois
NRC Project No. 06-319-01

Dear Mr. Kath:

Enclosed please find a copy of the Conservation Plan for the Big Sky Windpower Project located in Bureau and Lee counties, Illinois. Submission of this Plan is intended to serve as an application for an Incidental Take Authorization (ITA) for the above referenced project. Four species are covered by the Plan and include the regal fritillary butterfly, Blanding's turtle, Illinois mud turtle and western hognose snake.

No impacts to known habitat for any of the species or impacts to the Ryan Wetland and Sand Prairie INAI Site would occur as a result of the project. Although we feel that the actual risk of a take is very low, it is possible that a take could occur as a result of vehicular mortality on roads adjacent to the Ryan Wetland and Sand Prairie INAI Site. However, no direct construction related mortality or mortality through general degradation of the surrounding habitat is expected to occur.

Once you have completed your review of the plan and feel that is it complete, Big Sky Wind, LLC will publish the required notice in a local and State newspaper. A copy of the notice will be submitted to you for approval prior to publishing.

Please feel free contact me if you need additional information or if you have any questions.

Sincerely,

Natural Resources Consulting, Inc.

Terry J. VanDeWalle
Senior Environmental Scientist

Enclosure

C: Tim Polz, Midwest Wind Energy, LLC w/ enclosure
Joel Schittone, RMT, Inc. w/ enclosure

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PRIMARY CONTACT

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INTRODUCTION

The purpose of this Conservation Plan is to review the proposed Big Sky Windpower Project in sufficient detail to determine to what extent the proposed action may result in an "incidental take" of any of the Illinois state-listed threatened or endangered species listed below.

Target Species

- **Regal Fritillary Butterfly** (*Speyeria idalia*) – Threatened
- **Blanding's Turtle** (*Emydoidea blandingii*) – Threatened
- **Illinois Mud Turtle** (*Kinosternon flavescens*) – Endangered
- **Western Hognose Snake** (*Heterodon nasicus*) – Threatened

Consultation to Date

December 5, 2005: Big Sky Wind, LLC (BSW) representatives met with Illinois Department of Natural Resources (IDNR) staff at the Big Sky Windpower Project site to review site conditions and discuss the details of the project.

March 22, 2006: BSW representatives met with IDNR staff to discuss consultation in accordance with the Illinois Natural Areas Preservation Act [525 ILCS 30/17] and Title 17 Illinois Administrative Code Part 1075. Specifically, potential impacts to the Ryan Wetland and Sand Prairie Illinois Natural Areas Inventory (INAI) Site along with threatened and endangered species known to occur there were discussed. IDNR and Lee County Soil and Water District staff voiced concern over the placement of some of the turbines within 0.25 mile of the Ryan Wetland and Sand Prairie INAI Site. BSW agreed to eliminate five wind turbines from the area of concern and agreed to relocate four additional turbines so that no turbines are closer than 0.25 mile to the Ryan Wetland and Sand Prairie INAI Site.

March 31, 2006: BSW submitted a revised turbine layout to the IDNR reflecting the change in turbine location in the vicinity of the Ryan Wetland and Sand Prairie INAI Site.

April 5, 2006: The IDNR sent a letter to the Lee County Zoning Office modifying the Department's biological opinion regarding the project, stating that as revised the proposed project is unlikely to adversely modify the Ryan Wetland and Sand Prairie INAI Site and that the proposed project is unlikely to adversely affect the essential habitat of the state-listed threatened Blanding's turtle and state-listed threatened regal fritillary butterfly associated with the Ryan Wetland and Sand Prairie INAI Site. The IDNR continued to recommend that an Incidental Take Authorization (ITA) for the Blanding's turtle and regal fritillary butterfly be obtained for any turbine located within a one-mile radius of the Ryan Wetland and Sand Prairie INAI Site.

November 13, 2006: Natural Resources Consulting, Inc. (NRC) requested Natural Heritage Inventory (NHI) data from the IDNR for the project area to overlay on the project plan maps (Figure 2).

December 4, 2006: NRC contacted Keith Shank (IDNR Impact Assessment Section) via telephone to discuss the results of the habitat survey fieldwork and how best to proceed with preparation of the ITA and Conservation Plan. Mr. Shank indicated that there are two ways for BSW to proceed:

1. Provide the IDNR with the results of the habitat assessment indicating that no habitat exists

within the action area for the target species and/or no impacts to the target species would occur as a result of the project and then not apply for the ITA permit.

2. Prepare the Conservation Plan and apply for an ITA permit.

Mr. Shank indicated that BSW would need to decide which option best suits the Big Sky Windpower project.

DESCRIPTION OF THE PROPOSED ACTION

Project Description

The Big Sky Windpower Project is a state-of-the art wind energy project located in Lee and Bureau Counties, Illinois. The wind project has a nameplate capacity of 240 megawatts and consists of up to one hundred and twenty five 2.1 MW wind turbine generators (WTGs). The WTGs are situated on over 13,000 acres in May and East Grove Townships, Lee County and Ohio and Walnut Townships, Bureau County, but the entire project foot print will only occupy a total of approximately 100 acres. The entire output of the windpower project will be enough to power approximately 90,000 average households.

Each WTG is manufactured off site and consists of a 263-foot tower, a nacelle that houses the generator and gearbox, and a three-blade rotor assembly, all of which is shipped to the project location and assembled on-site. From the base of the tower to the tip of the blade, the total height of the WTG is 410 feet. One hundred and twenty-five steel reinforced concrete foundations will be constructed in Lee and Bureau Counties to anchor each WTG. A pad mount transformer will be installed at the base of each WTG and will collect electricity generated by each turbine through cables routed down the inside of the tower. The purpose of the pad mount transformer is to step the voltage up from 600 volts to 34.5 kilovolts (kV) to efficiently transmit power to the collector substation located in East Grove Township. Big Sky will install a 34.5kV underground power collection system between the pad mount transformers and a collector substation. This power collection system will consist of a series of underground cables ranging from 2 to 5 inches in outside diameter. The project substation will be constructed in order to deliver power from the power collection system to the Commonwealth Edison (Com Ed) transmission system. The project substation will receive the power from the power collection system at a voltage of 34.5kV and will step it up to 138kV. The power will then be routed north alongside State Highway 26 for approximately 13 miles where it will then be interconnected into the ComEd 345kV Transmission line at the Lee Energy Center.

In addition to the WTGs and power collection system, the Big Sky Project will construct approximately 35 miles of service roads allowing access to the turbines during and after construction. The service roads will be approximately 15 feet wide and will be constructed of crushed gravel/rock. Two permanent, free-standing meteorological towers will be installed at the project site. These towers will be used for performance testing of the wind turbines to ensure that they meet the manufacturers' guarantees. Each tower will stand approximately 263 feet tall. Two temporary, guyed-wired meteorological towers will also be installed for three to six months during construction to calibrate the permanent towers.

In addition, Big Sky will construct an operation and maintenance building somewhere within the project area. The operations and maintenance building will consist of a shed type metal structure that will house a supervisory control and data acquisition ("SCADA") system that records wind speed, direction, power production and other pertinent information along with office space and sleeping quarters for workers. Big Sky will work with the County Health Departments to ensure that the building is up to code.

Construction of the proposed project is scheduled to begin in 2007.

Action Area

The action area for this Conservation Plan is defined as the area within a one-mile radius of the Ryan Wetland and Sand Prairie INAI Site (Figure 3) and includes the construction, operation and maintenance of 22 turbines and their associated access roads and collector lines located within the action area. This is the area in which construction and operation of the Big Sky Windpower Project poses the greatest risk of "incidental take" of the species included in this Conservation Plan.

SPECIES ACCOUNTS

Regal Fritillary

Species Description

The regal fritillary (*Speyeria idalia* [Drury]) is a large butterfly with a wingspan of 2.7 to 4.2 inches. The forewing dorsal is orange with black marks; the margins are black with small white markings at the edge. The hind wing dorsal is black with a row of postmedian white spots. The submarginal row has orange spots in the male and white spots in the female.

The regal fritillary has one brood, with flight records from mid-June through mid-September. Adult males emerge in mid-June, with females typically emerging several days to perhaps two weeks later. Males exhibit a meandering, but energetic flight behavior in their search for receptive females. Their flight is from two to five feet above the ground. In contrast to males, which by some account make up 80 to 90 percent of the population, females spend more time in a perching or feeding behavior. After mating, females lay their eggs – as many as 2,400 – on a variety of surfaces, including a wide variety of non-host plants, dead leaves, and pebbles. This level of fecundity in the number of eggs and the wide, random dispersal of the individual eggs throughout the landscape are unusual among Lepidoptera.

Although the caterpillars hatch in late summer, they do not feed on the host plant, Bird's-foot violet (*Viola pedata*) and other violets, until the following spring. Winter is spent under leaves and in leaf litter on the ground. They are nocturnal feeders, hiding during the daytime and then feeding during nighttime hours. Adult nectar sources include milkweeds (*Asclepias* sp.), thistles (*Cirsium* sp.), blazing stars (*Liatris* sp.), butterfly weed (*Asclepias tuberosa*), red clover (*Trifolium pretense*), alfalfa (*Medicago sativa*), ironweed (*Vernonia* sp.), pale-purple coneflower (*Echinacea pallida*), and mountain mint (*Pycnanthemum* sp).

Habitat Requirements

The regal fritillary is adapted to a number of habitats, including sand prairies, mesic prairies, old field grasslands, meadows, railroad rights-of-way and marshy areas with grasslands. The species has the ability to disperse to other suitable habitats at considerable distances. Frequently, the butterflies are found near woodlands in these same areas. Although it tolerates a variety of landscapes, at least three conditions are mandatory for regal fritillary's continued existence:

1. Host plants – violets – must be present
2. Nectar sources for the adults must be present
3. The size of the site must be large enough, with five acres possibly the minimum size (the greater the size of the site, the greater likelihood of continued viability of the species).

Some research (Swengel, 2001) indicates even highly degraded areas can hold sizeable regal fritillary populations, provided the above conditions are met.

Populations of this species are extremely localized throughout the landscape, and occur in a small number of sites in Illinois. Populations can vary dramatically from year to year. These factors, combined with the habitat conditions noted above, make the species susceptible to extirpation from a wide range of factors, including extreme weather events, disease, an abundance of predators, land management decisions, collection or inadvertent takings of the species, vehicular traffic, urban growth or development that destroys habitat, demographic stochasticity (chance events in the reproduction of the species, such as a dearth of females during a given brood), and genetic deterioration (loss of genetic variability, leading to reduced fertility).

Species Status in the Action Area

The United States Fish and Wildlife Service lists this species as a species of concern; The Nature Conservancy's Global Rank for this species is G3 – very rare or local throughout its range or found locally in a restricted range (21 to 100 occurrences) (NatureServe, 2006). In Illinois, the regal fritillary has historically been recorded in more than two dozen counties, but today the species is believed to be confined to perhaps eight counties and is currently listed as threatened in the state (Illinois Endangered Species Protection Board, 2006).

Within the action area, the regal fritillary has been recorded at the Ryan Wetland and Sand Prairie INAI Site (Illinois Natural Heritage Database, 2006) (Figure 2). No regal fritillary records are found in the Illinois Natural History Survey insect collection for Lee or Bureau Counties (http://www.inhs.uiuc.edu/cbd/collections/index.html).

Blanding's Turtle

Species Description

Blanding's turtles are large aquatic turtles with an elongated, smooth, high-domed carapace that is black and commonly marked with light colored spots or irregular lines. The plastron varies from yellow with dark black blotches to almost totally black. A movable hinge is present on the plastron. The top and sides of the head are gray to black and the chin, throat and neck are bright yellow. The legs are generally black and may contain some yellow scales. Males have dark upper jaws and a slightly concave plastron, and females have yellow upper jaws and a flat plastron.

Habitat Requirements

Blanding's turtles most commonly inhabit areas with clean, shallow, slow-moving water with silty or organic substrates and abundant aquatic vegetation (Ernst et al., 1994). In Wisconsin, Ross and Anderson (1990) reported that Blanding's turtles spend more time in marshes than in ponds, and that ponds with sand bottoms and no aquatic vegetation are rarely used. In addition, they found that wetlands covered by cattail (*Typha*) mats are not used either, but areas cleared of cattails by muskrats are used.

Habitat preferences appear to vary between juveniles and adults and between seasons. Small juveniles primarily use emergent sedge habitats and shrub hummocks, larger juveniles use sedge/water interfaces, and the largest juveniles are found in open water (Pappas and Brecke, 1992). The turtles hibernate partially buried in the deepest portions of wetlands and streams (Ernst et al., 1994; Oldfield and Moriarty, 1994). In Wisconsin, the turtles were found partially buried in the substrate at mean water depths of 3 feet (Ernst et al., 1994).

Suitable nest sites for Blanding's turtles are upland areas with well-drained, sandy loam or sandy soils (Ross and Anderson, 1990; Ernst et al., 1994; Oldfield and Moriarty, 1994). Most nests in Wisconsin and Minnesota are located in grasslands (Ross and Anderson, 1990; Linck and Moriarty, 1998). Nesting has also been observed in agricultural fields (Linck et al., 1989; Casper, 1998). Female Blanding's turtles may move a considerable distance in search of suitable nest sites (Congdon et al., 1983; Oldfield and Moriarty). However, most nests are located within a few hundred feet of water (Congdon et al., 1983; Linck et al., 1989; Ross and Anderson, 1990).

Species Status in the Action Area

Blanding's turtles are listed as threatened by the State of Illinois (Illinois Endangered Species Protection Board, 2006) primarily due to habitat destruction. The turtles are relatively common in appropriate habitat from the Illinois River northward (Phillips et al., 1999).

Within the action area, Blanding's turtles have been recorded at the Ryan Wetland and Sand Prairie INAI

Site (Illinois Natural Heritage Database, 2006) (Figure 2). Phillips et al. (1999) report a post 1980 photographic record of Blanding's turtles in Lee County and no records for Bureau County. No records are found in the Illinois Natural History Survey reptile and amphibian collection for the Blanding's turtle in Lee or Bureau Counties (http://www.inhs.uiuc.edu/cbd/collections/index.html).

Illinois Mud Turtle

Species Description

The Illinois mud turtle (*Kinosternon flavescens*) is a medium-sized, semi-aquatic turtle with a broad, smooth olive to brown carapace that lacks a vertebral keel. The yellowish to brown plastron has two well developed transverse hinges and dark pigment along the seams. There is some yellow on the chin and neck and along the edge of the upper shell. The head is flattened with whitish to yellow hooked jaws. All four feet are webbed. Adult Illinois mud turtles range in carapace length from 4 to 6 inches.

Habitat Requirements

The Illinois mud turtle is fossorial and prefers a sand prairie or open sand savanna habitat and avoids areas with dense forest (Christiansen et al., 1985; Ernst et al., 1994; Phillips et al., 1999). Habitats with soils of nearly pure sand are required. In Iowa, radio-telemetry has shown that all habitats used by Illinois mud turtles are 238 – 1,475 feet from water in areas of sparse herbaceous cover in elevated sandy dunes (Christiansen et al., 1985).

Aquatic habitats in Illinois include temporary to permanent ponds and backwaters of rivers (Phillips et al., 1999). The turtles spend time in fishless ponds from mid May through June where feeding and breeding occur. The turtles hibernate and aestivate for the majority of the remainder of the year buried in the sand, with a short active period occurring in September or October in some years. Fish, crustaceans, insects and plant material make up the highest percentage of the diet (Christiansen et al., 1985). Females lay 3-7 eggs in a shallow burrow in late June through early July (Phillips et al., 1999).

Species Status in the Action Area

In Illinois, the Illinois mud turtle is known historically from only 14 locations within five counties (Illinois Natural Heritage Database, 2006). Most populations were apparently always small and the species has disappeared from several localities since the 1950's (Ernst et al., 1994) and much of its original habitat along the Green, Illinois and Mississippi rivers has been destroyed (Phillips et al., 1999). The species is currently listed as endangered in Illinois (Illinois Endangered Species Protection Board, 2006).

The Illinois mud turtle is not known to occur within the action area; however, the species was reported in Lee County prior to 1980 (Phillips et al., 1999). The Illinois Natural History Survey reptile and amphibian collection contains one record for the Illinois mud turtle in Lee County for a specimen collected in 1927 and no records of the turtle in Bureau County (http://www.inhs.uiuc.edu/cbd/collections/index.html). The NHI database has no records of Illinois mud turtles within two miles of the Big Sky Windpower project area (Illinois Natural Heritage Database, 2006) (Figure 2).

Western Hognose Snake

Species Description

The western hognose snake (*Heterodon nasicus*) is a medium sized, stout bodied snake (up to 24 inches total length) with a gray or tan back covered with 35-40 dark blotches and an sharply upturned scale at the tip of the nose. The belly and underside of the tail are predominantly black. The scales are keeled and

the anal plate is divided. A transverse bar lying between the eyes extends downward behind each eye to the corner of the mouth.

Habitat Requirements

The western hognose is a prairie or savanna species, preferring grasslands with well drained sandy or gravelly soils for burrowing (Ernst and Ernst, 2003). In Illinois, it is most often observed crossing sandy roads in brushy or weedy sand prairie remnants (Phillips et al., 1999). When frightened, the snake will widen its neck, hiss, and sometimes strike, then roll onto its back and feign death. The snakes mate in the spring and lays eggs in July. The 8-10 young per clutch hatch in August or September. The diet of the western hognose includes toads and other amphibians, reptiles and their eggs, birds, and small mammals, and the species is not as dependant on toads as the related eastern hognose snake (*Heterodon platyrhinos*) (Phillips et al., 1999; Ernst and Ernst, 2003).

Species Status in the Action Area

In Illinois, the western hognose snake is known historically from only 21 locations within 10 counties (Illinois Natural Heritage Database, 2006) and is currently listed as threatened (Illinois Endangered Species Protection Board, 2006).

The western hognose snake is not known to occur within the action area. Phillips et al. (1999) report a post-1980 vouchered specimen from Lee County and no specimens for Bureau County. The Illinois Natural History Survey reptile and amphibian collection contains one record for the western hognose snake in Lee County for a specimen collected in 1929 and no records of the snake in Bureau County (http://www.inhs.uiuc.edu/cbd/collections/index.html). The NHI database has no records of western hognose snakes within two miles of the Big Sky Windpower project area (Illinois Natural Heritage Database, 2006) (Figure 2).

HABITAT ASSSESSMENT

Prior to the field investigation, several data sources were consulted to identify areas of potential habitat for each of the four target species included in this Conservation Plan. These included:

- USGS 1:24,000 Scale Topographic Maps
- Recent Aerial Photography
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Maps
- Natural Resources Conservation Service Soils Data for Lee and Bureau Counties

A field survey for potential habitat for each of the four target species was conducted by NRC biologists on November 20, 2006. Windshield and walking surveys of the entire Big Sky Windpower project area, with particular emphasis on the action area, were conducted to field locate and map any potential habitat for these species that may occur in these areas. No intensive searches or trapping for the butterfly or any of the reptiles were conducted as part of this habitat assessment.

General Habitat Conditions

The project area consists of flat to rolling topography in a highly agricultural setting. Land use on well over 90 percent of the land within the overall Big Sky Windpower Project limits is farmstead or row crop production. A limited number of scattered and fragmented woodlands, wetlands and pasture/old field habitats are found within the project limits.

Regal Fritillary

Two areas of potential habitat for the regal fritillary were found within the action area and are shown in Figure 3. The first is the Ryan Wetland and Sand Prairie INAI Site where the regal fritillary has been previously recorded. The site consists of a wetland – sand prairie complex dominated by big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*) and little bluestem (*Schizachyrium scoparium*). Potential nectar sources were not observed on the day of the site visit due to the timing of the fieldwork; however, it is anticipated that potential nectar sources are present during the butterfly's active season. The Ryan Wetland and Sand Prairie rates as high quality regal fritillary habitat.

A second area of potential habitat is located approximately 0.75 mile southwest of the Ryan Wetland and Sand Prairie INAI Site in the vicinity of proposed Turbines 78 and 81 (Figure 3). An existing dirt access road runs south from St. Mary's Road toward proposed Turbine 81 and then continues south-southeast toward proposed Turbine 78. Habitat on the property consists of dogwood (*Cornus* sp.) dominated scrub-shrub, a red pine (*Pinus resinosa*) planting, scattered old field dominated by several grasses and forbs, and upland deciduous forest. A limited number of potential nectar sources, primarily thistles (*Cirsium* sp.) were observed along the existing access road. The area is surrounded on all sides by cropland.

The scrub-shrub and old field areas, along with the edges of the existing access road are considered to be low quality/marginal regal fritillary habitat, due primarily to the high percentage of trees and shrubs, which limit the suitability of the area. The existing access road bisects this low-quality habitat that could conceivably support a population of regal fritillaries. We emphasize however, that no population of this species is known to exist at this location, and that at the time of the site visit, it was not possible to determine whether an extant population does exist.

No other areas of suitable regal fritillary habitat were found within the action area.

Blanding's Turtle

Within the action area, only the Ryan Wetland and Sand Prairie INAI Site, where the Blanding's turtle has previously been recorded, contains suitable habitat for the turtle (Figure 3). Several wetlands with adjacent sandy slopes suitable for nesting are found at the Ryan Wetland and Sand Prairie site. No other shallow marsh or other suitable wetland habitat is located within the action area. Several farm ponds are located within and adjacent to the action area; however, Blanding's turtles rarely use farm ponds (Christiansen and Bailey, 1988).

A small number of emergent wetlands are located within the project area, but outside of the action area. Although Blanding's turtles are known to use multiple wetlands throughout a year, and in some cases travel large distances between wetlands, these wetlands are too widely distributed and isolated from other suitable habitat, including the Ryan Wetland and Sand Prairie, to make them suitable for Blanding's turtle use.

Illinois Mud Turtle and Western Hognose Snake

Both the Illinois mud turtle and the western hognose snake are dependant on soils of nearly pure sand, and for the mud turtle, these soils must be associated with shallow wetlands (Christiansen et al., 1985; Phillips et al., 1999; Ernst and Ernst, 2003). Soil types and wetland locations were overlaid on aerial photographs prior to the fieldwork in an effort to locate potential habitat for the Illinois mud turtle and western hognose snake (Figure 3). Areas within the project limits mapped as having sandy soils in close proximity to wetlands were investigated during the site visit.

No suitable habitat for either the Illinois mud turtle or the western hognose snake is found within the Big Sky Windpower project limits. From a habitat suitability standpoint, the Ryan Wetland and Sand Prairie INAI Site may contain suitable habitat for both species; however neither species has been recorded at the site and no evidence of an extant population at the site exists.

EFFECTS OF THE PROPOSED ACTION

Direct Effects on Habitat

Regal Fritillary

The placement of proposed Turbines 78 and 81 and their associated connectors and access roads (Figure 3) will impact a total of approximately 2.4 acres of potential low quality/marginal regal fritillary habitat, of which 1.7 acres will be temporary impacts. Therefore, the project will result in the loss of 0.7 acre of potential low quality/marginal regal fritillary habitat located approximately 0.75 – 1.0 mile south of the Ryan Wetland and Sand Prairie.

The majority of the impacted area will be along an existing dirt access road, which will be upgraded to a 16 foot wide gravel access road as part of the project. The upgraded access road will be located primarily along one edge of the potential regal fritillary habitat, thereby reducing habitat fragmentation. Temporary impact areas outside of the final 16 foot drivable portion of the road will be revegetated. It is anticipated that the connector line will be trenched in and will also be revegetated. If additional area is required for use as a crane path, these areas would also be temporarily impacted and would be revegetated.

Due to the small amount of permanent impact and the low quality of the area, no significant loss of eggs, larvae or egg laying habitat is expected to occur. Therefore, we anticipate no adverse impact on the regal fritillary as a result of construction of Turbines 78 and 81 and their associated connectors and access roads.

No impacts to regal fritillary habitat at the Ryan Wetland and Sand Prairie INAI Site will occur.

Blanding's Turtle

Within the action area, suitable Blanding's turtle habitat was only found at the Ryan Wetland and Sand Prairie. NWI maps indicate several wetlands on the property containing the low quality regal fritillary habitat to the south of the Ryan Wetland and Sand Prairie (Figure 3). Only the portion of that property that could be viewed from St. Mary's Road or would be impacted by the project was investigated the day of the fieldwork and no suitable wetlands for Blanding's turtles were observed. If suitable wetlands are located in the interior of the property, they would not be impacted by the project. In addition, no impacts to the Ryan Wetland and Sand Prairie will occur as a result of the proposed project. Therefore, no impacts to Blanding's turtle habitat will occur.

Illinois Mud Turtle and Western Hognose Snake

No habitat for the Illinois mud turtle or western hognose snake is found within the action area; therefore, no impacts to these species will occur as a result of the proposed project.

Incidental Take

Although the actual risk of a take is very low as a result of the proposed project, the potential for an "incidental take" of the regal fritillary, Blanding's turtle, Illinois mud turtle and western hognose snake does nevertheless exist. This take may occur through vehicular traffic on St. Mary's Road and Morgan Road in the vicinity of the Ryan Wetland and Sand Prairie INAI Site and the proposed access road for Turbines 78 and 81. While the risk of an "incidental take" of these species by vehicular traffic does exist, we feel that the risk resulting from the proposed project is not significantly increased over the current conditions. No direct construction related mortality or mortality through general degradation of the

surrounding habitat is expected to occur within the breeding and/or non-breeding portions of the respective species life cycles.

Measures to Minimize Effects of the Proposed Action

Measures have already been taken during the design phase of the project to minimize potential impacts to the species covered by this Conservation Plan and the essential regal fritillary butterfly and Blanding's turtle habitat located within the Ryan Wetland and Sand Prairie INAI Site. Based on concerns expressed by the IDNR and Lee County Soil and Water District over the placement of some of the turbines within 0.25 mile of the Ryan Wetland and Sand Prairie INAI Site, BSW agreed to eliminate five wind turbines from the area of concern and agreed to relocate four additional turbines so that no turbines are closer than 0.25 mile of the of the Ryan Wetland and Sand Prairie INAI Site. As a result of these design changes, the IDNR modified its biological opinion and concluded that the project as now designed in not likely to adversely affect the Ryan Wetland and Sand Prairie INAI Site or essential habitat for the regal fritillary butterfly and Blanding's turtle found within the site.

Additional, measures to be taken by BSW to avoid or minimize impacts to the reptile species include:

1. Placement of silt fence around the turbine foundation construction site at Turbines 84, 86 and 87 to exclude turtles and other animals from the construction area.

2. Providing a qualified biologist with experience with the target species to serve as an on-site Environmental Monitor responsible for instructing construction personnel on the proper placement of silt fences at Turbines 84, 86 and 87, monitoring the silt fences, monitoring ground disturbance activities, such as road building, turbine pad excavation, and trenching for power collection lines, and coordinating with the IDNR in the event of an observation or "incidental take" of one the target species.

3. Informing construction personnel of the possible presence of the rare turtles and snake in the project area and asking them to watch for any turtles or snakes within the construction zone or on adjacent roads. If turtles or snakes of any species are found in the construction area, they could simply be picked up and moved to a safer location outside of the construction area. If observed on public roads, attempts should be made to avoid running the animal over.

Measures to Mitigate Effects of the Proposed Action

1. Temporary impact areas on nonagricultural land associated with Turbines 78 and 81 will be reseeded with a mix of native grasses and forbs including bird's-foot violet (*Viola pedata*), the preferred host plant of regal fritillary larvae.

2. In the event of a documented "incidental take" of any of the species covered by this Conservation Plan as a direct result of the construction or operation of the Big Sky Windpower project, BSW proposes to mitigate for the taking by hiring a qualified biologist with experience with the affected species to conduct a preliminary population survey of the affected species in the area of the taking. The purpose of the survey would be to gain a better understanding of the size, location and movement of the population of the affected species in an effort to avoid any future takings. The final results of the survey would be provided to the IDNR.

Monitoring

The only monitoring proposed is routine observation of species and reporting of road kills by BSW or construction staff in conjunction with their normal duties. The IDNR shall be notified of any regal fritillary, Blanding's turtle, Illinois mud turtle or western hognose snake observations or road kills in the project area.

CONCLUSIONS AND EFFECTS DETERMINATION

Regal Fritillary

We conclude that the proposed Big Sky Windpower Project is **Not Likely to Adversely Affect the Regal Fritillary** for the following reasons:

- Essential regal fritillary habitat within the Ryan Wetland and Sand Prairie INAI Site will not be impacted.
- The closest proposed turbine location to known regal fritillary habitat within the Ryan Wetland and Sand Prairie INAI Site is Turbine 86 at 0.26 mile.
- Natural buffers, including woods, are present and help confine the butterfly to its known habitat.
- 0.7 acre of potential low quality/marginal regal fritillary habitat located approximately 0.75 – 1.0 mile south of the Ryan Wetland and Sand Prairie will be permanently impacted as a result of construction of Turbines 78 and 81 and their and associated connectors and access roads; however, no significant loss of eggs, larvae or egg laying habitat is expected to occur.
- Regal Fritillaries typically fly at a height of 2 – 5 feet above ground, which is lower than the expected lowest point of a turbine blade; therefore, mortality during operation of the turbines is not expected to occur.
- A low risk of "incidental take" as a result vehicular mortality does exist. However, in the event that a regal fritillary should fly out of the known habitat, the likelihood of it encountering either construction or maintenance vehicles is, in our opinion, exceedingly remote. Further, it is anticipated that construction vehicles on access roads will not be traveling at a velocity sufficient to result in an accidental taking, since this species has the ability to evade slow-moving vehicles in such encounters.
- The overall quantity or quality of habitat should not be diminished on a scale that results in jeopardy to the species, because of the complete avoidance of essential habitat located on the Ryan Wetland and Sand Prairie site and minimal impact to low quality/marginal habitat south of the Ryan Wetland and Sand Prairie site.

Blanding's Turtle

We conclude that the proposed Big Sky Windpower Project is **Not Likely to Adversely Affect the Blanding's Turtle** for the following reasons:

- Essential Blanding's turtle habitat within the Ryan Wetland and Sand Prairie INAI Site will not be impacted.
- The closest proposed turbine location to known Blanding's turtle habitat within the Ryan Wetland and Sand Prairie INAI Site is Turbine 84 at 0.4 mile.
- No loss of existing Blanding's turtle habitat will occur as a result of construction of the turbines and associated connectors and access roads.

- Turbines 84, 86 and 87 will be located in existing cropfields south of the Ryan Wetland and Sand Prairie. While Blanding's turtles will at times use cropfields for nesting, the sites they typically choose are close field edges and in sandy loam or sand soils. The proposed locations of Turbines 84, 86 and 87 are near the center of the fields, with the closest 0.4 mile from suitable summer habitat located in the Ryan Wetland and Sand Prairie. Soils in the fields at the proposed turbine locations are mapped as:

  1. Turbine 84 – Dickinson Sandy Loam
  2. Turbine 86 – Muscatune Silt Loam
  3. Turbine 87 – Osco Silt Loam

  Sparta Loamy Sand (88B2) is present in all of the fields adjacent to the Ryan Wetland and Sand Prairie (Figure 3). In addition, areas of Oakville Fine Sand (741D3) and Coloma Sand (689B) are found on uncropped land between Turbines 84 and 86. If Blanding's or other turtles attempted to nest in these fields, it is likely that these areas would be chosen and not the location of the proposed turbines.

- No suitable Blanding's turtle habitat was found within the impact area south of the Ryan Wetland and Sand Prairie; therefore, it is not anticipated that Blanding's turtles would be moving through the construction area in attempt to move between habitat patches.

- A low risk of "incidental take" as a result vehicular mortality does exist, primarily on Morgan Road adjacent to the Ryan Wetland and Sand Prairie. However, the risk of vehicular mortality resulting from the proposed project is not expected to significantly increase over the current conditions. In addition, construction and maintenance personnel will be informed of the possible presence of the turtle in the area and asked to avoid collisions with all turtles if possible, which will further reduce the risk of an "incidental take".

- The overall quantity or quality of habitat should not be diminished on a scale that results in jeopardy to the species, because of the complete avoidance of essential habitat located on the Ryan Wetland and Sand Prairie site.

Illinois Mud Turtle

We conclude that the proposed Big Sky Windpower Project will have **No Effect on the Illinois Mud Turtle** for the following reasons:

- No extant populations are known to exist within two miles of the Big Sky Windpower project limits.

- Illinois mud turtles have not been recorded in the Lee County since 1972.

- No suitable habitat for the Illinois mud turtle was found within the action area.

- Construction and maintenance personnel will be informed of the possible presence of the turtle in the area and asked to avoid collisions with all turtles if possible, which will further reduce the risk of an "incidental take".

Western Hognose Snake

We conclude that the proposed Big Sky Windpower Project will have **No Effect on the Western Hognose Snake** for the following reasons:

- No extant populations are known to exist within two miles of the Big Sky Windpower project limits.
- No suitable habitat for the western hognose snake was found within the action area.
- Construction and maintenance personnel will be informed of the possible presence of the snake in the area and asked to avoid collisions with all snakes if possible, which will further reduce the risk of an "incidental take".

IMPLEMENTING AGREEMENT

BSW will be responsible for overseeing all minimization, monitoring and mitigation efforts identified within the Conservation Plan. BSW will be responsible for planning, contract execution and construction supervision for the entire project.