



Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Pat Quinn, Governor
Marc Miller, Director

November 3, 2014

Ms. Kristine Donarski, Zoning Officer
Bureau County
700 South Main St.
Princeton, IL 61356

**RE: Walnut Ridge Wind LLC, Walnut, Bureau County
Endangered Species Consultation Program
EcoCAT Database Review #1411577**

Dear Ms. Donarski:

This letter satisfies the requirements of the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075 pertaining to consultation with Bureau County on the proposed action. Walnut Ridge Wind LLC proposes to construct a large wind energy facility in northern Bureau County.

The proposed facility is in the vicinity of a number of records of endangered or threatened species, Illinois Natural Areas Inventory (INAI) Sites, and Illinois Nature Preserves which could be affected by the construction and operation of such a facility. In addition, the proposed action may adversely affect the essential habitats of species protected by the *Illinois Wildlife Code* [520 ILCS 5] and the *Illinois Fish & Aquatic Life Code* [515 ILCS 5].

Pursuant to Title 17 Illinois Administrative Code Part 1075.30(e), the Department has an opportunity to once again consult on any proposed action if more than two years elapses between approval of the project and implementation, or if major alteration of the project occurs. The Department last consulted with Bureau County on this project in April 2010, and its implementation has not yet begun. A number of events relevant to this project have occurred in the interim, including the significant expansion of the footprint of the proposed action. Accordingly, the Department is exercising its prerogative to consult anew with the County regarding this project.

The comments and recommendations are based on the current list of endangered or threatened species contained in Parts 1010 and 1050 of the Department's Administrative Rules. However, by law, the Endangered Species Protection Board must evaluate these lists not less than once every five years, and modify them appropriately. Such a revision is pending late in 2014. At this time, the Board has nearly finalized changes to the lists of protected species, but the new lists will not be in effect until after publication by the Secretary of State in the Illinois Register. Where the following comments pertain to a

species newly proposed for listing, that fact is indicated. Both the applicant and the County should become familiar within any new or modified listings which may apply to this project.

Indiana Bat, *Myotis sodalis*. When this project was first reviewed there had been no documented mortality of this species at wind turbines. Over the last five years, six Indiana Bats have been killed at wind energy facilities in Pennsylvania, West Virginia, Ohio, and Indiana; four were fall-migrating females and the fifth was a male at the beginning of the fall migration season. Importantly, the most recently-killed Indiana Bat died during the spring of 2014 in Ohio, demonstrating the species may be vulnerable to collisions with wind turbines throughout their active season. Four deaths, including the spring season casualty, occurred in flat agricultural landscapes very similar to Bureau County, having little or no suitable habitat nearby.

In the past, the Department had no records of the Indiana Bat in Bureau County and therefore it was not addressed in the earlier consultation for this proposed action. This, too, has changed.

In April 2011, the Department and its partners undertook a radio-telemetry study of gravid female Indiana Bats emerging from hibernation in the Black Ball Mine near LaSalle, IL. At the time of the study, most Indiana Bats had already emerged, so that only a small population segment was fitted with transmitters. Several of these bats flew to maternity roosts in the vicinity of Bureau Creek near the Illinois River, establishing the first records of this species in the County.¹ However, roost locations which have been identified in the last few years elsewhere in Illinois often lie near the very top of the watershed; though this was not indicated by the monitored bats, it could be the case for bats the Department did not track.

Suitable maternity habitat for this species exists along Big Bureau Creek and West Bureau Creek, which are tributary to the Illinois River. The use of roost trees in Bureau County means the Department can no longer dismiss the possibility of maternity roosts for this species in the vicinity of the proposed action, a portion of which lies in the West Bureau Creek watershed.

Gray Bat, *Myotis grisescens*. During a February 2012 bat census at the Black Ball Mine, IDNR staff captured and banded an adult male Gray Bat. Also federally-listed and state-listed as an endangered species, this individual was hibernating well outside the region considered its typical range. This species is an obligate cave-roosting species, even in the summer, and forages primarily along stream corridors. However, it has occasionally been found using bridges and culverts as roosts during the summer; thus, though the absence of caves and mines in Bureau County is a strong indicator this species is not present, it remains a possibility the species may be present in Bureau County in small numbers.

The Gray Bat has not been reported as a wind turbine casualty, but few wind energy facilities have been constructed within its generally-accepted geographic range, limiting the opportunities for encounters. This species has been detected acoustically near a commercial-scale wind turbine in Adams County in late July, but only once was detected at rotor-height, with all other detections just above ground level.

Northern Long-Eared Bat, *Myotis septentrionalis*. On October 3, 2013, the U.S. Fish & Wildlife Service announced its preliminary decision to list the Northern Long-Eared Bat as “endangered” on

¹ The study established new Indiana Bat/maternity colony records for LaSalle, Bureau, Putnam, Marshall, and Woodford Counties, where none were previously known. Obviously, our knowledge of this species’ distribution is far from complete.

October 3, 2014, due to the severe in-roads of White Nose Syndrome (see below), to which this species is the most vulnerable of any bat species. In January 2014, the Service recommended that any party conducting operations which may take this species after October 2014 should plan as though it were already listed. Later, the Service re-opened the comment period for this decision, delaying it until no later than April 3, 2015. Hence, at the time this proposed action will be in operation, the Northern Long-Eared Bat will be protected under both state and federal law.

Large numbers of the Northern Long-Eared Bat were found along the Green River in Lee County during preliminary studies for the proposed Green River Wind Farm; the Green River flows along the western side of the proposed Walnut Ridge Wind Farm, suggesting this species might be an issue for Walnut Ridge Wind LLC. In response, and as authorized by the Department of Natural Resources, Walnut Ridge commissioned bat surveys conducted during the summer season of 2014. In three of four surveyed locations, Northern Long-Eared Bats were captured, including lactating females, which imply the presence of one or more maternity colonies.

Nationally, roughly six times as many Northern Long-eared Bats have been reported killed at wind turbines as Indiana Bats, including one at an East Central Illinois Wind Farm in 2013. Because this species is active in the vicinity of the proposed project, the risk of taking the Northern Long-Eared Bat through normal wind turbine operations must be addressed. As might be expected for closely-related species, management recommendations for the Northern Long-Eared Bat closely parallel those for the Indiana Bat. These entail operational adjustments during the periods and conditions of highest risk: during low wind speeds (below 5.5 m/s) at temperatures above 15°C from late July through mid-November.

White Nose Syndrome. Another new factor is White Nose Syndrome (WNS). This is a disease of cave-roosting bats which appeared on the Eastern Seaboard in 2006, and has since killed more than six million bats in more than 20 States and Canadian Provinces. In February 2013, WNS was confirmed to be present in the Black Ball Mine and several other Illinois hibernation sites. The Indiana Bat and Northern Long-Eared Bat are susceptible to this disease, a fact which renders avoidable losses to other causes of more importance. The March 2014 census at Blackball Mine found a roughly 90% reduction in bat numbers, and all bats found were infected with WNS. If this trend is general, it means far fewer cave-hibernating bats will be at risk near wind turbines, but the conservation value of survivors will be greatly increased.

Other cave-roosting bats vulnerable to WNS, such as the **Little Brown Bat**, *Myotis lucifugus*, comprising 47% of the bats captured during the Walnut Ridge mist-net survey, and the **Tricolor Bat**, *Perimyotis subflavus*, are likely to become listed during the life of this project. Both have been tallied as wind turbine collision casualties, though comprising a relatively small proportion of overall bat losses. If either or both are listed, they will also have to be addressed.

In addition, recent research into overall bat losses has shown that a significant portion of bat losses, 30% to 50%, occur below the manufacturer's recommended cut-in wind speed if rotors are allowed to "free-wheel" when no electricity is being generated. Significant reductions of bat mortality can easily be achieved if the practice is not allowed during bat activity seasons, generally April through October.

Recommendation #1: The County should consider a requirement the applicant seek appropriate federal and state permits from the Fish & Wildlife Service and the IDNR for the Northern Long-Eared Bat.² The applicant should give consideration to whether such permits should also address the Indiana Bat, the Gray Bat, and/or other bat species which may be listed within the next few years.

Recommendation #2: The County should consider a requirement for the applicant to conduct at least one season of post-construction bat mortality monitoring to identify the scale of bat mortality due to wind farm operations, and the species sustaining mortality. Results should be reported to both the County and to the Department of Natural Resources. USFWS guidance often recommends three years of intensive mortality monitoring.

Recommendation #3: The County should consider a requirement for the applicant to utilize best available technology at the time of implementation to avoid unnecessary impacts to birds and bats, e.g. feathering blades at wind speeds below the manufacturer's recommended "cut-in" wind speed between April 1 and October 31 each year. Such a practice entails no loss of electrical generation potential.³

*Recommendation #4: The County should consider a requirement for the applicant to curtail turbine operations by feathering blades between July 21 and November 15 annually⁴ whenever wind speeds fall below 6.9 m/s and air temperatures remain above 15°C, unless federal/state permits allow curtailment at lower wind speeds and different temperature thresholds.⁵ Curtailment at 6.9 m/s can reduce total bat mortality by up to 90%, and most bats become much less active at temperatures below 15°C (about 60°F). However, even curtailment at wind speeds of 6.9 m/s and greater cannot guarantee no myotid bats will be taken: one-third of all bats killed at a Ford County wind farm curtailed at this level in August and September of 2012 (a total of 15) were Little Brown Bats, *Myotis lucifugus*.*

Gray/Timber Wolf, *Canis lupus*. At present, this species is federally-protected as "endangered" in Illinois south of Interstate 80, but it is not federally-protected north of that boundary, where the proposed action will be implemented. However, the *Illinois Endangered Species Protection Act* protects the Gray Wolf as endangered throughout Illinois, including the proposed project area.

A Wolf was killed in western Marshall County in 2002, having passed through Bureau County. In March 2010, a large canine believed to be a Wolf was killed just outside Walnut. However, DNA analysis of the carcass showed the animal to be a domestic wolf/dog hybrid not eligible for protection. However, a female Wolf was live-trapped in Whiteside County in December 2012 near Morrison, while

² The only known reduction method which guarantees there will be no prohibited taking is to halt turbine operations after sunset, a practice which could render the project economically infeasible. The take of this species is a rare event during normal operations, and recommended measures reduce this probability further, but the probability of taking will always remain greater than zero. Hence, seeking official sanction for such taking is a prudent measure.

³ Generally, cave-hibernating bat species are active away from the hibernation site only between these dates. As climate change progresses, the activity period may be extended before and after these dates. Bats are most active at low wind-speeds, but turbine blades acquire lethal velocity before the generator "cuts in." Most modern wind turbines "cut-in" at 3.5 m/s (8 mph).

⁴ While bats are killed throughout the active period, research has repeatedly shown that 80% or more of all bat mortality occurs in August, September, and October; this is also true for myotid bats.

⁵ Due to the small numbers of myotid bats involved, curtailment recommendations are based on total bat mortalities, although it is clear that myotid species are far less vulnerable than others. Reductions in total mortality are assumed to proportionately benefit myotid species, but this may not actually be the case.

two Wolves (a female and male) were unlawfully killed in separate incidents in Jo Daviess County in late 2011 and early 2012. A female Wolf was road-killed in December 2013 on Interstate-39 in southern LaSalle County, not only south of I-80 but south of the Illinois River. Hence it is entirely possible that a Wolf may be present from time-to-time within the project area.

Each animal is believed to have been a single animal, not associated with a pack, dispersing from the Great Lakes population in Wisconsin. Wolf sightings continue to be rare in Illinois, but are now more likely than in the past. Wind energy facilities are not known to exert adverse influences on Wolves or wolf habitat absent direct effects to a den or rendezvous site, but no instances of pack behavior or reproduction involving dens or rendezvous points in Illinois have been reported.

*Recommendation #5: The County should consider a requirement for the applicant to assure that persons employed during construction and operation of the wind farm are made aware of the possible presence of Wolves and are trained in the markers which distinguish them from **Coyotes**, *Canis latrans*. Any observations of possible Wolves should be promptly reported to the Department.*

Ornate Box Turtle, *Terrapene ornata*. The applicant has undertaken an assessment of potential habitat for this species within the project area, finding very few locations ideally suited, and no individuals. Nevertheless, because the Department has found that the Visual Encounter Survey (VES) technique has only a 3% chance of detecting even those turtles above ground and subject to observation, the possibility remains this species is present within the project area.

No recent records for this species have been documented in Bureau County, but new records have been established in Whiteside and Lee Counties in the last several years. Specifically, a new record for the Ornate Box Turtle (August 2014) has been identified at the Hahnman Sand Prairie Nature Preserve in Whiteside County, less than three miles north of the project boundary. Recent records within the Big Sky wind energy facility are within a few miles of the proposed Transmission Line terminus in Lee County.

No new recommendations are offered at this time for the Ornate Box Turtle. However, should individuals be found within the project area, data and information pertaining to the thermal conductivity/resistivity of soils covering buried collection power lines will become of interest.

Weed Shiner, *Notropis texanus*; Starhead Topminnow, *Fundulus dispar*. These small fishes exist in significant numbers in the Walnut Special Ditch, the low-gradient channelized portion of Walnut Creek flowing west and south-west of Walnut. Since the Ditch is tributary to the Green River, it is reasonable to presume these species are also present in the Green River.

The Weed Shiner prefers low-gradient streams over largely sandy substrates, but the Starhead Topminnow can be found over other substrates in higher-gradient habitats. It is possible the Starhead Topminnow and the Weed shiner can be found in pools of the upper portion of Walnut Creek.

No turbines will be located close enough to Walnut Special Ditch for shadows to be cast on its channel or for underground power lines to cross the stream or its tributaries, with one exception (but an in-stream dam on the tributary prevents the movement of the listed fishes to the point where power lines will cross). However, at least two turbines are proposed on the east bank of the Green River which will be in

a position to cast shadows on the Green River during early morning hours throughout the year. This may stress fishes in the stream when shadows are present, but should not prevent movements up- and downstream for most of the day.

Potential adverse effects may also result from acoustic effects. Turbines emit acoustic pulses even when they are not turning, simply in response to the passage of the wind. A study in Scotland demonstrated that turbine operations (from machines considerably smaller than those proposed here, located on bedrock) could be detected with terrestrial seismographs at distances in excess of six miles. Vibrations can enter the water through the ground or through the air, or both. Because acoustic vibrations represent an alteration of existing conditions, they may adversely affect the essential habitat of fish and mussels in aquatic environments.

The applicant and the Department have extensively surveyed the scientific literature but have been unable to identify any research specifically related to sub-lethal wind turbine acoustic/kinetic effects on fish. Some recent research on the feasibility of creating “acoustic fences” to exclude fish from hazardous areas using low-frequency infrasound may have some applicability. That research relies on “near-field” effects for such exclusion, and it is likely that turbine locations proposed for this project (with the possible exception of the two machines adjacent the Green River) are far enough from streams to abate any impacts. “Far-field effects” were not studied in any detail but, if there are effects to aquatic organisms, it is more likely that far-field vibrations will be involved.

The Department has no expectation that construction or operation of wind turbines will result in any direct mortality of amphibians, fish, or mussels. However, acoustic effects could produce behaviors with adverse effects on the sustainability of local populations. Acoustic effects could place key habitats off-limits to some species and adversely affect the fitness of species which remain. However, the state of the science today is such that recommendations to control or eliminate potential far-field acoustic/kinetic effects are unwarranted without additional information.

Recommendation #6: The County should consider a requirement for the applicant to determine the pre-construction distribution of these species in the Green River, Walnut Special Ditch and Walnut Creek and to monitor any changes in their distribution plausibly due to flicker or acoustics as or when turbines are operated. Unless other plausible causes of changes in distribution can be identified, changes in distribution can be attributed to turbine operations.

Prairie Hog-Nose Snake, *Heterodon nasicus*. Records for this species exist at the Green River State Fish & Wildlife Area in Lee County and also about eight miles west of the proposed project area in Bureau County at the McCune Sand Prairie Land & Water Reserve. However, a new and recent record has been established in southeastern Whiteside County at the Hahnman Sand Prairie Nature Preserve.

The Prairie Hog-Nose Snake is an egg-predator of the Ornate Box Turtle (although preferred prey consists of toads) and their preferred habitats are the same or similar. The applicant’s search results for Ornate Box Turtles suggest that suitable habitat for the Prairie Hog-Nose Snake is rare or absent within the project area inside Bureau County, and the Department offers no recommendations relative to this species.

Regal Fritillary Butterfly, *Speyeria idalia*. This is another species dependent on tallgrass prairie for successful reproduction. A new record for a large population of this State-listed threatened species has been established at the Hahnman Sand Prairie Nature Preserve in Whiteside County. Current records also exist at the Green River State Fish & Wildlife Area, Sand Prairie State Habitat Area, and Ryan Wetlands and Sand Prairie, all within ten miles of the project area.

Where it is reproductively successful, this Butterfly is present all year long as eggs and larvae, as well as adults. However, this insect is a strong flyer; during their three-month flight period, females of this species have been documented as far as 20 miles from their likely hatching area. Females are not particular where eggs are laid, but are prolific producers, with each female producing up to one thousand eggs, deposited individually or in small groups on convenient plants. When eggs hatch, the new larvae drop to the ground and seek refuge in vegetative litter over the winter, and do not begin to feed until the spring. Violets are the obligatory larval host plant, and usually must be located in the context of a tallgrass prairie community. Past and current railways often support a linear population of this species.

Females metamorphose in late June and early July, when they mate, but they do not lay their eggs until September. During this period they survive on the nectar of flowering prairie plants, which may or may not be plentiful where they hatched. Often their search for food takes them significant distances from ideal reproductive habitat, and appropriate food plants may exist only along roadways. Flight is generally close to the ground, which makes this species vulnerable to vehicle collisions. More intense traffic associated with wind energy facility construction may increase vehicle collision mortality.

Recommendation #7: The County should consider a requirement for the applicant to train project workers to recognize the Regal Fritillary Butterfly (males and females have a slightly different appearance) and to establish a procedure for reporting any observations of this species within the project area.

Recommendation #8: The County should consider a requirement for project construction traffic to avoid roads along which the Regal Fritillary is observed, or to restrict traffic to speeds less than 20 mph in the vicinity of observations.

Endangered or Threatened Birds. Currently, thirty species of migratory birds are listed as endangered or threatened by the Illinois Endangered Species Protection Board. Record-keeping by the Department places emphasis on nesting or breeding locations, not migration routes. In Illinois, there are few geographical features which concentrate migrating birds. Consequently, migrations through most of the State are characterized as “broad-front” movements. In addition, migration timing is influenced by a number of factors, so that only generalizations can be stated regarding when particular species may be present.

It should be borne in mind that any of the state-listed birds may occur in Bureau County when conditions are favorable; it is impossible to predict when and where individual birds may be at risk. To date, two listed species are documented to have been struck by commercial wind turbines: the **Osprey**, *Pandion haliaetus*, and the **Black-Billed Cuckoo**, *Coccyzus erythrophthalmus*.

The Osprey was injured at a wind farm in McLean County (September 2007), a county where no breeding records of this species exist. Ospreys migrate as individuals, not in flocks or family groups.

Many Ospreys are reared in nests on manmade objects, such as light standards and utility poles, and this may produce an inclination to attempt to roost on a wind turbine nacelle. A few Ospreys breed along the Illinois River below Peoria, but more breed in northern Illinois and Wisconsin; migrants may be at risk at Walnut Ridge.

A Black-Billed Cuckoo was struck and killed at a wind farm in adjacent Henry County (July 2012), in terrain similar to that of the Walnut Ridge project. Henry County has no records of nesting by this species. Neither does Bureau County, but that does not rule out a similar event at Walnut Ridge. A second and third Black-Billed Cuckoo (September 2013, July 2014) were killed at a wind farm in Vermilion County where there was no evident reason to expect such events.

Neither the Osprey nor the Cuckoo has been regarded as unusually susceptible to wind turbine collisions, illustrating the difficulty of planning for such incidents. However, the documented loss to wind turbines of three Black-Billed Cuckoos in three years may indicate a heightened level of vulnerability for that species.

Among the listed birds with nearby nesting records are the **Short-Eared Owl**, *Asio flammeus*; the **Upland Sandpiper**, *Bartramia longicauda*; the **Loggerhead Shrike**, *Lanius ludovicianus*; the **Yellow-Headed Blackbird**, *Xanthocephalus xanthocephalus*; the **Common Moorhen**, *Gallinula chloropus*; the **Black-Crowned Night Heron**, *Nycticorax nycticorax*; and the **Least Bittern**, *Ixobrychus exilis*.

The **Short-Eared Owl** is a grassland ground-nesting raptor, with breeding records at Sand Prairie State Habitat Area, a few miles north of the project area. The Owl relies heavily on its acute hearing to locate prey. The lack of grasslands within the proposed project area means the proposed action is unlikely to displace this species from existing habitat. The Owls will likely avoid the vicinity of wind turbines because turbine noise may render them unable to locate their prey. This makes it less likely Owls will collide with turbine blades. However, the species is vulnerable to vehicle collisions because most flights are low to the ground and turbine noise will not be a factor during construction.

The **Upland Sandpiper** has demonstrated some tolerance for wind turbines in the vicinity of nests; one pair has persistently nested in a grassed waterway near a wind farm in McLean County for several years, but the Department has been unable to obtain particulars. The nesting location is well within sight and sound of wind turbines (based on photographs), but may not be subject to flicker effects. The Upland Sandpiper may be at risk during mating flights, which are very acrobatic and pass through wind turbine rotor elevations. Sandpiper records near Walnut Ridge are associated with Sand Prairie State Habitat Area. Though often considered a “grassland” species, grassed waterways and roadsides apparently provide sufficient habitat in many cases.

The **Loggerhead Shrike** preys on large insects and small mammals, often impaling prey on thorns, twigs, or barbed-wire fences for several days before consuming them because its beak structure makes dismembering fresh kills difficult. It prefers savanna-like conditions, with grasslands bordered by small trees and shrubs. It has been documented nesting at several locations in southwestern Lee County. Except during migration, the Shrike is thought to be at slight risk of blade collision; the removal of trees along roads and at intersections to facilitate transportation of turbine components may be a greater threat, posing the risk of nest destruction if the bird’s presence has not been identified.

The **Yellow-Headed Blackbird**, **Black-Crowned Night Heron**, and **Common Moorhen** nest in hemi-marshes, wetlands with about equal mixes of vegetation and open water. There is little or no nesting habitat for these species within the Walnut Ridge project footprint, but all three species have been documented at the Green River State Fish & Wildlife Area in Lee County. Unlike most species, which display a north-south migration pattern, the Yellow-Headed Blackbird's pathway through northern Illinois is east and west. This species' breeding populations are concentrated in the Chicago area, so that numbers of migrants may be passing through this vicinity.

The **Least Bittern**, a small heron, nests in the emergent vegetation of marshes. It has been documented from the Green River SFWA. No marshes are known to exist in close proximity to the Walnut Ridge project areas. In general, waterfowl appear to be at extremely low risk of wind turbine collision.

Non-listed Migratory Birds

Bald Eagle, *Haliaeetus leucocephalus*. The Bald Eagle remains protected under the *Bald and Golden Eagle Protection Act* and the *Migratory Bird Treaty Act*, each as stringent as the better-known *Endangered Species Act*. To date, only six Bald Eagles are documented to have been killed by wind turbines in all of North America. Illinois has experienced a significant increase in Bald Eagle nests over the last few years, and it is likely that additional Bald Eagle nests will appear along some streams in the area during the project's life.

For several years there has been an active Bald Eagle nest on Bureau Creek near Tiskilwa, and the Department has received several unconfirmed reports of Bald Eagle nests along the Green River. Migrating Bald Eagles have been sighted several times in western Lee County.

Commercial turbines within ten miles of an active nest are thought to pose some risk to Bald Eagles, both adults and fledglings. Bald Eagles migrate overland, although their hunting efforts are generally associated with water bodies. The Fish & Wildlife Service recommends that parties seeking to build wind turbines within ten miles of Bald Eagle activity areas consult with the Service about their proposals.

Golden Eagle, *Aquila chrysaetos*. The Golden Eagle is protected under the same statutes which apply to the Bald Eagle. The Golden Eagle does not breed in Illinois, but in the fall and winter descends into Illinois before returning north in the spring. This species has been reported as far south as St. Louis, and several years ago a Golden Eagle was photographed attacking a White-Tailed Deer at Nachusa Grassland in Lee County. In 2012, an injured Golden Eagle was recovered from a corn field near Champaign, IL. Walnut Ridge is located well-within the winter range of Golden Eagles.

Far more Golden Eagles have been killed by wind turbines than Bald Eagles, though mainly in the West. Unlike the Bald Eagle, which feeds primarily on fish, Golden Eagles are predators of terrestrial animals. However, lacking data to demonstrate that Golden Eagles congregate in specific locales, it is difficult or impossible to assess potential risk, beyond the fact some mortality risk exists.

American Golden Plover, *Pluvialis dominica*. This migratory bird is not listed as endangered or threatened, and does not breed in Illinois, but it has specific spring migration habitat requirements which are adversely affected by wind turbine construction and operations. At one time, the Department was

concerned that large numbers could be killed at wind turbines, but sufficient evidence has accrued to alleviate concerns about direct mortality. However, it is now virtually certain this species is consistently displaced from habitat within a quarter-mile of a wind turbine, which generally means it cannot use habitat within a wind farm, since it also avoids other structures erected by humans. Given this level of knowledge, it is no longer necessary for the applicant to perform special studies regarding effects to this species, as was once recommended, but it would be helpful if special note were taken of this species' presence and behavior during any avian studies otherwise conducted.

Recommendation #9: The County should consider a requirement the applicant perform post-construction monitoring to determine whether the project kills migratory birds. Results should be reported to both the County and to the Department of Natural Resources.

Nature Preserves/Land & Water Reserves. The proposed wind farm will be visible from within a number of public and private lands protected under the provisions of the *Illinois Natural Areas Preservation Act*.

Walnut Ridge turbines will be visible from the **Ryan Sand Prairie & Wetlands LWR** (six miles) and the **Foley Sand Prairie Nature Preserve** (4 miles) in Lee County, and the **Hahnaman Sand Prairie Nature Preserve** (two miles) in Whiteside County. Turbines closest to the Hahnaman Sand Prairie will be highly visible. However, visitors to these sites can already see wind turbines of the Big Sky Energy Center and will be able to see the approved-but-not-yet-constructed turbines of the Green River Phase I LLC Wind Farm. Walnut Ridge is likely to have less visual impact than the Green River project.

Walnut Ridge turbines will be clearly visible from the **McCune Sand Prairie Land & Water Reserve** (nine miles) and the **Myers Woods Nature Preserve** (nine miles) in Bureau County, and will still be visible from IDNR's **Mineral Marsh Nature Preserve** (twelve miles) in Henry County, but not close enough that turbines will be obtrusive.

State Parks/Recreation Areas. Turbines which are part of this project will be visible from the **Maytown State Habitat Area** (over six miles), from the **Green River State Fish & Wildlife Area** (over five miles), and from the **Sand Prairie State Natural Area** (three miles) in Lee County, but these areas are already visually affected by turbines of the Big Sky Wind Farm, and they will lie closer to proposed turbines of the Green River Wind Farm.

Turbines will be as close as 2.5 miles to the **Hennepin Canal State Trail & Greenway** and will be readily visible over a long stretch of this linear historic and recreational facility in Bureau and Whiteside Counties. Turbines will also be visible from portions of the **Mautino State Fish & Wildlife Area** (over eight miles) in Bureau County, and from portions of the **Johnson-Sauk Trail Recreation Area** (fifteen miles) in Henry County.

Consultation on the part of the Department is closed, unless Bureau County desires additional information or advice related to this proposed action. In accordance with 17 Ill. Adm. Code 1075.40(h), the County must notify the Department of its decision regarding these recommendations, whether it will:

- Proceed with the action as originally proposed;

- Require the action to be modified per Department recommendations (please specify which measures if not all will be required); or
- Forgo the action.

This consultation is valid for two years unless new information becomes available which was not previously considered; or the proposed action is substantially modified; or additional listed species, essential habitats, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above-listed conditions develop, a new consultation is necessary.

If additional protected resources are encountered during the project's implementation, the applicant must comply with the applicable statutes and regulations. Also, note that closing consultation does not imply IDNR's authorization or endorsement of the proposed action. Please contact me if you have questions regarding this review.

Sincerely,



Keith M. Shank
Impact Assessment Section
Division of Natural Heritage
Ph. (217) 785-5500
keith.shank@illinois.gov