



# Illinois Department of Natural Resources

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

Pat Quinn, Governor  
Marc Miller, Director

May 9, 2014

Mr. Kenneth Lynn, Consulting Environmental Scientist  
Ameren Services  
1901 Chouteau Ave.  
P.O. Box 66149, MC 635  
St. Louis, MO 63166

**RE: Illinois Rivers Project, Herleman-Meredosia Segment, Multiple Counties  
IDNR Environmental Resources Review  
EcoCAT Review #1411059**

Dear Mr. Lynn:

This letter provides IDNR's comments resulting from its review of the approved route between the proposed Herleman Road Substation and the Meredosia Energy Center for this portion of the Illinois Rivers Project 345-kV transmission line.

This review considered potential avian impacts; potential effects to species listed as endangered or threatened by the Illinois Endangered Species Protection Board and their essential habitats; potential effects to sites identified in the Illinois Natural Areas Inventory (INAI Sites); potential effects to State Parks; potential effects to large forest blocks or grasslands; and potential effects to wetland resources.

**Eagles. Bald Eagle, *Haliaeetus leucocephalus*.** More than 5,000 Bald Eagles, were present in Illinois during the Winter Count of 2014, shattering prior records. About 90% of these birds were concentrated along the Mississippi River, with most of the remainder concentrated along the Illinois River. Numerous Bald Eagle nests are known both upstream and downstream on the Mississippi River in Adams and Pike Counties, as well as along the Illinois River in the vicinity of Meredosia in Morgan County. *The approved corridor near Meredosia may lie within 660 feet of active Bald Eagle nests on both sides of the Illinois River.*

**Golden Eagle, *Aquila chrysaetos*.** These birds are being reported in increasing numbers, as well, but are only winter residents. This species has been identified along the Mississippi River as far south as Monroe County in recent years. The Department is unaware of reports of this species along the approved route, but the presence of this species is likely, from time to time.

Both species are vulnerable to collision with power lines and electrocution while perching. *The Department recommends the design and configuration of the power line and its supporting structures*

*employ the methods recommended by the Avian Power Line Interaction Committee (APLIC) to limit Eagle injury/mortality.*

As you know, each of these species is protected by the federal *Bald and Golden Eagle Protection Act*. *The Department recommends a late winter/early spring survey to assure that no new nests have been built within 660 feet of the proposed route, prior to beginning construction.* If such a nest is found, Ameren should promptly consult with the Fish & Wildlife Service to determine the best means of proceeding.

**Other Migratory Birds.** In recent years, increasing numbers of the **American White Pelican, *Pelicanus erythrorhynchus***, have been migrating through—and even breeding in—Illinois waters. This species is protected under the federal *Migratory Bird Treaty Act*. The Department is aware of a recent electrocution of an adult White Pelican near Lake Carlyle. The American White Pelican has a larger wing-span than the Eagles, with spans up to 10 feet not uncommon. Hence, facility designs intended to avoid electrocutions of large raptors, which typically provide only 60-72 inches of clearance, are likely insufficient to avoid electrocutions of this species. *Ameren may wish to consider providing greater clearances on support structures located in the vicinity of large waterways or lakes which may be used by this species.*

**Endangered Bats.** Wooded areas of Adams, Pike, and Morgan County fall within the range of populations of the **Gray Bat, *Myotis grisescens***; the **Indiana Bat, *Myotis sodalis***; and the **Northern Long-Eared Bat, *Myotis septentrionalis***. The Indiana Bat and Gray Bat are both federally-listed as endangered and state-listed as endangered. The Northern Long-Eared Bat will become federally-listed as endangered in October 2014, whereupon it will automatically become state-listed, as well. The USFWS has already issued guidance stating that those operations which may result in taking the Northern Long-Eared Bat after October 2014 should be treated as though they will take a listed species, beginning immediately.

**Gray Bat, *Myotis grisescens*.** The nearest Gray Bat hibernation records are from Burton Cave in Adams County, not far from the Herleman Substation location, and from southern Pike County along the Illinois River. However, Gray Bats have been found hibernating as far north as the Blackball Mine in LaSalle County in recent years (2013), a site which lies outside the “accepted” range of this species. Hence, caves and mines along the Illinois River bluffs may provide habitat for this species. The Gray Bat is a true “cave bat,” roosting in caves and mines in both winter and summer. However, this species feeds along riparian corridors, often fifteen miles or more from its cave roosts. It should be presumed to feed along streams, sloughs, and riverbanks in the project area during the summer activity season, which extends from April through November. Gray Bats were acoustically detected at the Pigeon Creek Wind Turbine northeast of Payson in 2012; the approved corridor runs 0.8 miles north of this location across the headwaters of Pigeon Creek

**Indiana Bat, *Myotis sodalis*.** The Indiana Bat and the Northern Long-Eared Bat hibernate in caves and mines in the winter, but roost in trees during the summer activity season, which extends from late March through mid-November. The Indiana Bat has a number of Priority Four hibernaculae in Adams and Pike Counties, and an extremely high number of maternity roost trees (>40) were identified in the Fishhook Creek INAI Site, which is bisected by the approved route, in 1989. The deeply dissected and forested stream valleys of Adams and Pike Counties provide suitable habitat but most have not been subjected to

intensive survey efforts. It would be prudent to presume the Indiana Bat is present in suitable habitat throughout the Ipava-Meredosia Corridor. The Indiana Bat was acoustically detected at the Pigeon Creek Wind Turbine northeast of Payson in both 2011 and 2012.

**Northern Long-Eared Bat, *Myotis septentrionalis*.** The Northern Long-Eared Bat is more common than either the Gray Bat or Indiana Bat, and may be presumed to be present in suitable habitat throughout the Herleman-Meredosia Corridor. Its life history and behavior is very similar to that of the Indiana Bat.

*If a presumption of presence is rejected, the Department recommends mist-netting and acoustic surveys during June to characterize bat activity and populations along the route. The approved route intersects wooded areas at many points. To avoid violating protective statutes, tree-clearing should occur before April 1 or after November 15. Tree removal between these dates is not unlawful, but should be preceded by mist-net and acoustic surveys to avoid felling any trees currently in use by Indiana Bats or Northern Long-Eared Bats. (Maternity colonies of these species will not be sharing a maternity roost.) Felling such trees while they are in use is a violation of both state and federal statutes. Northern Long-Eared Bats may roost in trees as small as three inches diameter-at-breast-height (dbh), while Indiana Bats prefer larger trees (generally > nine inches dbh).*

The **Fishhook Creek Illinois Natural Areas Inventory (INAI) Site** is located on either side of the County Line between Adams and Pike Counties, and on either side of Illinois Route 104, in Sections 11, 12, 13, 14, and 15 of Township 3 North, Range 5 West in Adams County; and in Sections 7 and 18 of Township 3 South, Range 4 West. Fishhook Creek was added to the INAI because it provides essential habitat for the Indiana Bat and represents an unusual concentration of that species. The approved route will have its greatest adverse effect on the bat species' habitat as it follows the section line between Sections 7 and 18 in Pike County, where the cleared right-of-way will fragment existing forest blocks. This may have a greater effect on the Northern Long-Eared Bat than the Indiana Bat, since the former appears to prefer roosting in forest interiors, whereas the Indiana Bat often roosts in trees at forest edges.

Mist-netting activities, which require permission from both federal and state agencies, should be supplemented by radio-telemetry. Female Indiana Bats forage *an average distance* of 2.5 miles from a primary roost tree. Hence, a mist-net capture of lactating females may not indicate a roost tree near the area of primary interest. Radio-telemetry aids in identifying the specific location of roosts.

Both state and federal statutes provide procedures for obtaining permission to take listed bats incidentally during other lawful activities, such as power line construction. However, the procedures differ in important respects, and state and federal permits must be obtained separately, if avoidance measures are deemed insufficient to guarantee no prohibited taking will occur.

**Other Endangered/Threatened Plants and Animals.** **Regal Fritillary Butterfly, *Speyeria idalia*.** In recent years, large numbers of this State-listed threatened butterfly have been observed at the Meredosia Energy Center, along Yeck Road and Koch Lane near Meredosia, and at numerous other sites in the floodplains east of the Illinois River in Morgan County. [While the Department has not received reports of this species from the west side of the Illinois River, it is unlikely the River poses a barrier to butterfly movement.]

Although these populations appear to have been decimated by the drought of 2012, it is likely that suitable habitat has been or will soon be re-colonized by this strong-flying insect. Because of the complex life-history of this protected insect and the difficulty of avoiding prohibited taking where it may be abundant, **the Department recommends Ameren consider seeking an Incidental Take Authorization pursuant to Part 1080 of the Department's Administrative Rules for the Regal Fritillary Butterfly.**

Female Regal Fritillaries deposit their small clusters of eggs on a variety of plants beginning in September, with each female depositing up to 1,000 eggs in total. Newly-hatched larvae fall to the ground and overwinter beneath vegetative detritus. In the spring, each larva must find a suitable host plant on which to feed. This species will feed only on plants in the *Viola* genus, but the violets must occur in the context of the equivalent of a tallgrass prairie community. After developing through five or six instars, the larvae pupate.

Male Regal Fritillaries (distinguishable by a slightly different hind-wing pattern) emerge as adults from late May to the middle of June, with females emerging after mid-June. The two sexes commingle for about ten days, during which mating occurs, after which the males die. Females enter a condition known as “diapause,” in which egg development is delayed. Females must survive until the beginning of the oviposition period in September. To do so, they feed on the nectar of flowering forbs, which, being exceptionally strong fliers, they will fly far afield to find if they are not available locally. This is likely the major means of population dispersal. However, unless the flowering forbs are also in the vicinity of suitable host plants in an appropriate context, subsequent recruitment may not be successful.

The Department has observed that where forested areas are penetrated by roads and power line corridors, Regal Fritillaries can be found moving along such routes in what would otherwise be inhospitable habitat. Moving vehicles in such confined areas have a higher probability of striking butterflies.

All butterflies are noted for a behavior known as “puddling,” and the Regal Fritillary is no exception. Butterflies congregate on the ground at the edges of puddles, where they can extract necessary mineral nutrients from the soil. They are also attracted to fresh animal dung for the same purpose. Off-road vehicles moving at speed have the potential to strike and kill puddling butterflies before they can evade the vehicle.

During the egg and larval stages, this species is particularly vulnerable to fire and other disturbances of the habitat, such as herbicide spraying, mowing, and off-road vehicle use. Adults are vulnerable to unlawful collecting and to collisions with vehicles, because flowering forbs are often restricted to field margins along roadsides. Any regional catastrophe, such as drought, flooding, or a late freeze, can also severely restrict the availability of food plants. At all life stages, this species must contend with a variety of insect, avian, and mammalian predators, as well as fungal and bacterial diseases.

In early summer 2012, Regal Fritillaries were reported emerging and flying from at least ten locations in western Morgan and Cass Counties, but none were observed after July 3, suggesting the extreme high temperatures of the severe late-summer drought suppressed these populations. However, provided habitat remains available, the Department expects these populations to rebound.

This species presents a challenge, not only to power line construction activities, but to on-going maintenance activities as well. While it is obvious that encounters will be much more likely in some localities than others, the flight abilities of this species means the possibility of an encounter may exist anywhere up to 20 miles from the site of adult emergence. The use of broad-spectrum broad-leaf herbicides also threatens the obligatory larval host plants and the flowering forbs required to sustain adults.

**Illinois Chorus Frog, *Pseudacris (streckeri) illinoensis*.** This is another ecologically interesting species which is abundant in the floodplains of Scott, Morgan, and Cass Counties, especially around Meredosia. Despite repeated efforts, no populations have been located on the west side of the Illinois River. The species is known to be averse to flowing waters, so that the Illinois River may pose an effective barrier to dispersal of this species to suitable habitat west of the River.

Although a member of the arboreal tree-frog family, the Illinois Chorus Frog is a fossorial species which spends most of its life underground, silent and out of sight. It has developed physiological adaptations which allow it to burrow forwards, in contrast to most amphibians, which burrow backward. However, given its small size, it is limited to burrowing in pure sand or predominantly sandy soils. Consequently, populations are generally limited to sand prairies found in glacial outwash areas of current or ancient river floodplains. Precisely such habitat dominates the Meredosia area in Morgan County.

However, being an amphibian, the Illinois Chorus Frog requires water in which to lay its eggs, and water which remains long enough (about 60 days) for tadpoles to metamorphose into adults. The sandy soils in which it spends most of its time cannot sustain such pools. This species must undergo seasonal migrations to ephemeral or permanent bodies of standing water to successfully recruit juveniles. A study of 36 choruses of breeding Frogs found that most pools were within 200 meters of an area of sandy soil which would support burrowing, but movements up to 900 meters have been reliably reported. Movements to and from breeding ponds occur at night.

Illinois Chorus Frogs prefer breeding pools with a maximum depth of slightly more than one meter which contain plant debris or detritus from the prior growing season, and are free of fish and other potential egg predators. Male Frogs cling to such debris while calling for mates, and mating occurs in the same context. Such pools can occur in roadside ditches and farmed wetlands, as well as vernal woodland pools.

Frogs emerge from underground and move to breeding ponds very soon after ice-melt, with calling and breeding beginning when body temperatures reach about 50 degrees Fahrenheit. Breeding can occur as early as February in warm winters, and as late as early May in cooler years. Breeding usually peaks in March and April.

Only the male Frogs engage in calling behavior. Although the Frogs themselves are small, their voices are not, and the most common method to survey for the presence of this species is to travel along roadways with periodic stops to listen for this species' distinctive call, which is audible for more than a mile. It is then possible to locate the breeding pond and to roughly estimate the number of males present and active that evening. Often, fewer than five or six males are present in a "chorus."

The drawbacks to this method of assessing populations are obvious. If conditions that spring are not conducive, the Frogs will not attempt to breed and their presence will go unremarked. Even where they are identified, reasonable estimation of population numbers is difficult. Moreover, dispersal areas can be only roughly inferred from the location of breeding ponds, and no indication of population density in dispersal areas can be derived. In addition, it has been shown successive years of good or poor breeding conditions can result in huge fluctuations in both population numbers and in the extent of territory occupied. Consequently, the absence of the Illinois Chorus Frog from apparently suitable habitat during a single survey period is not a reliable guide to its presence in the past or future.

Very little is known about the behavior of this species once it goes underground. It has been demonstrated this species is capable of moving and feeding (on worms and soil insects) underground. Like its arboreal cousins, this species may share their ability to endure freezing and thawing with minimal harm. Nevertheless, the depth of its underground activity may vary seasonally, being deeper in winter and shallower in warmer seasons.

Large populations persist in areas almost entirely devoted to mechanized agriculture, although some popular herbicides, such as atrazine, are known to be highly toxic to it, suggesting the mechanical aspects of agricultural activities are generally compatible with this species' ecology. The fact that Frogs are generally underground when agricultural chemicals are applied may provide them some degree of protection from chemical toxicity.

*Given these characteristics, the Department presumes that all suitable sandy soils within 900 meters (slightly greater than half a mile) of a known breeding location are currently occupied by the Illinois Chorus Frog.*

This species has a number of vulnerabilities. Drainage "improvements" which drain or prevent flooding of breeding ponds are detrimental. Adults and juveniles crossing roads to breed or disperse are subject to road-kill and exposure to predators. Eggs and tadpoles are extremely sensitive to chemical pollution. Frogs deep enough underground are preserved from being crushed to some degree when heavy vehicles pass above, but excavations in dispersal areas have the potential to injure or kill Frogs which are present. Consequently, excavation and construction in suitable Illinois Chorus Frog habitat has a high probability of resulting in the prohibited taking of this species.

Known breeding locations exist directly adjacent to the Meredosia Energy Center and inside or within 900 meters of the proposed power line corridor near its Meredosia terminus. The disturbance of known breeding sites should be avoided, but the dispersal distances and population densities within suitable soils are not known with any degree of certainty. The Department believes construction activities associated with the power line are likely to injure or kill some number of Illinois Chorus Frogs, despite efforts to avoid harming them. While it is possible current populations can sustain such losses, ***the Department recommends Ameren consider seeking an Incidental Take Authorization pursuant to Part 1080 of the Department's Administrative Rules for the Illinois Chorus Frog for actions associated with construction of the power line.***

**Loggerhead Shrike, *Lanius ludovicianus*.** The approved route intersects several localities with nesting records for this State-listed endangered bird. These records date to 1989 and 1990, a period when the Shrike was listed as "threatened," and may or may not continue to indicate areas where this

bird may continue to breed. In actuality, this species could be encountered anywhere along the route where conditions are suitable.

Often considered a grassland species, the Shrike prefers old fields and open meadows containing or bordered by shrubs and small trees. Many such areas exist in Adams and Pike Counties. Its diet consists primarily of large insects (grasshoppers and beetles) or small rodents. Its presence can be deduced through observations of insects or small animals impaled on twigs, thorns, or barbed-wire fences; it is easier for the Shrike to dismember prey which has decomposed to an extent, and it uses impalement to briefly store its prey.

The primary threat to this species from power line construction would be the inadvertent destruction of a nest through clearing operations or equipment movements. The species is migratory, so disturbance of likely habitat areas during the late fall or winter would be least likely to result in harassment, injury, or death. If this cannot be done, a June breeding bird survey would help identify areas where special care should be used to avoid violations of applicable statutes.

**Decurrent False Aster, *Boltonia decurrans*.** A number of populations of this federally-listed endangered plant are located along the floodplains of the Illinois River from LaSalle-Peru southward. This plant is present near the Illinois River and its backwaters in Pike and Morgan Counties. Decurrent False Aster is a biennial plant with wind-borne seeds which readily colonizes disturbed areas. A major cause of its decline is the conversion of many floodplains to agricultural areas protected from flooding by levees.

As with other federally-listed endangered plants, the federal *Endangered Species Act* applies directly only to those plants found on federal property, such as the federal Meredosia Fish & Wildlife Refuge. On non-federal lands, this and other federally-listed plants are protected consistent with applicable state law. In Illinois, such plants are automatically state-listed as endangered or threatened, which means “taking” such plants requires the written permission of the land owner as mandated by the *Illinois Endangered Species Protection Act*. The Illinois Department of Natural Resources is not empowered to authorize the take of such plants contrary to the desires of the land owner.

Consequently, *the Department recommends seeking permission to take from the owners of properties where such plants may be found.* Under Illinois law, the prohibited “taking” of a plant may be summarized as “to harm in any manner.” This encompasses such common maintenance activities as mowing and herbicide application, as well as other forms of physical damage and habitat modification such as soil compaction and rutting.

**Bent (Ozark) Milk Vetch, *Astragalus distortus*.** This very rare plant is located in the project area. In 2012, 95 individual plants of this species were found growing within the grounds of the Meredosia Energy Center, near the substation which will support the Ipava-Meredosia power line. This discovery was not the product of a general survey of the vicinity, but was incidental to an effort to quantify the suitability of this area as Regal Fritillary habitat.

As previously noted, endangered plants are protected by law only to the extent of prohibiting taking of the plant without the express written permission of the land owner; the owner remains free to manage or dispose of the plants as the owner sees fit. In this case, the owner of the Meredosia Energy Center has

the power to destroy or conserve this population without interference from local, state, or federal authorities (except to the extent that actions adversely affecting the plants are federally-funded or state-funded—agencies can specify the conditions under which their funds can be expended).

IDNR strongly recommends the owner of the Meredosia Energy Center take steps to protect and conserve this population of Bent Milk Vetch. Such measures could include protecting the locations of individual plants from mowing, herbiciding, grading, construction, or other such disturbances; collecting seeds or translocating a subset of individual plants to attempt establishment of the plant in additional more convenient locations elsewhere within the property, or working with agencies or conservation organizations to translocate and establish populations on lands where the plants would be at less risk.

This begs the question, however, of whether other populations of this plant exist along the approved power line route, on lands owned by others. Because unnoticed individual plants may exist along the route the Department recommends Ameren seek the written permission of land owners in Morgan County to take this species through construction and maintenance operations. Further, Ameren should authorize contractors and other agents to take this species on lands it owns under the conditions Ameren specifies.

**Arrowwood, *Viburnum molle*.** Sometimes called Softleaf Arrowwood or Kentucky Viburnum, this state-listed threatened species occurs on forested slopes and limestone bluffs in Adams and Pike Counties. The nearest known occurrence is just over a mile from the approved power line route, in the **Burton Creek Natural Area INAI Site**, but unknown populations may be encountered, since most woodlands along the route have not been botanically surveyed. A June survey of woodlands which will be cleared might be advisable. Arrowwood is most readily identifiable by its leaves and flowers; winter identification immediately preceding clearing operations may be difficult. As with other state-listed plants, the express written permission of the landowner is required to harm these plants in any manner.

**Illinois Natural Area Inventory (INAI) Sites.** The adverse modification of the **Fishhook Creek INAI Site** has already been described in the paragraphs dealing with bats.

The **Rice School Geological Area INAI Site** is located nearly a mile south of the approved route, and will not be adversely modified.

The **National Starch Bed INAI Site** and the **Woods Lake Bed INAI Site** are both mussel beds in the Illinois River, located very near or beneath the point at which the proposed line will cross from Pike County into Morgan County. Both are designated because they contain more than ten species of living mussels, including the State-listed threatened **Ebonysell Mussel, *Fusconaia ebena***. However, because lines are expected to be extended across the River by helicopter, no disturbance of the river bed is anticipated, and neither INAI Site is expected to be adversely modified.

As indicated, the **Burton Creek Natural Area INAI Site**, which supports a stand of Arrowwood, is located just over a mile northeast of the approved route along I-172; it will not be adversely modified in any way.

**Dedicated State Nature Preserves and Land & Water Reserves.** There are currently no Nature Preserves or Land & Water Reserves within view of the power line route.

**State Parks.** The **Meredosia Lake State Fish and Wildlife Area** is located just over a half-mile north of the Meredosia Energy Center, beginning on the north side of the Village of Meredosia. Otherwise there are no State Parks with 2.5 miles of the approved power line route. **Siloam Springs State Park** is located four miles north of the route, while **Fall Creek Gorge State Natural Area** is located 2.5 miles south of the corridor.

**Forest or Grassland Blocks.** Numerous forest blocks occur along and in the vicinity of the approved power line route. Some forest fragmentation will be associated with this project. Some of the existing blocks to be affected appear large enough to support area-sensitive interior forest migratory birds. However, given the topography and land cover of Adams and Pike Counties, impacts to large forest blocks appear unavoidable. Smaller grasslands and pastures are present along the route, but adverse effects to fauna using them are unlikely to be significant, unless they support the Loggerhead Shrike.

**Wetland Resources.** Significant wetlands occur along the route only near the Illinois River in Pike and Morgan Counties. Power line construction is unlikely to alter their hydrology, but the right-of-way will convert riparian forest to herbaceous cover. This change is unlikely to adversely affect wildlife in the vicinity. However, Bald Eagles may be present very near the proposed corridor; it is difficult to predict whether such changes will modify their use of the area.

The Department of Natural Resources appreciates this opportunity to comment on the potential wildlife issues facing this project. Should there be any questions, please do not hesitate to contact me.

Sincerely,



Keith M. Shank  
Division of Ecosystems and Environment  
[keith.shank@illinois.gov](mailto:keith.shank@illinois.gov)  
(217) 785-5500