



# Illinois Department of Natural Resources

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Bruce Rauner, Governor  
Wayne A. Rosenthal, Director

## **Authorization for Incidental Take and Implementing Agreement**

Pursuant to the Illinois Endangered Species Protection Act (Act) (520 ILCS 10/5.5) and the regulations adopted to implement the Act (17 Ill. Adm. Code 1080), authorization is hereby granted to Pioneer Trail Wind Farm, LLC (hereinafter referred to as PTWF) for the incidental take of the Indiana bat (*Myotis sodalis*) and the northern long-eared bat (*Myotis septentrionalis*). The Illinois Department of Natural Resources (hereinafter referred to as the Department) has determined that the taking is incidental to activities associated with the operation of the Pioneer Trail Wind Farm, a wind energy facility located east of the towns of Paxton and Loda in Ford and Iroquois Counties, Illinois. The 94 General Electric 1.6-megawatt (MW) wind turbines with 82.5 meter rotor diameter (and associated infrastructure) that make up the wind farm are scattered over an area of approximately 12,500 acres. Two Illinois Natural Areas Inventory (INAI) sites lie within the project footprint. These include Clarence Railroad Prairie (INAI #0993) and Clarence West Railroad Prairie (INAI #0550).

### **Procedural History**

The Department received a federal Habitat Conservation Plan (HCP) [as was required for issuance of an incidental take permit under the federal Endangered Species Act by the U.S. Fish and Wildlife Service (hereinafter referred to as the USFWS)] from Locke Lord LLP on behalf of PTWF on March 2, 2015, as a request for authorization for the incidental take of the Indiana bat and northern long-eared bat. Since the HCP was not yet approved by the USFWS, which is required for the State to accept the plan "... in lieu of the conservation plan described in this Section." under 17 Ill. Adm. Code 1080.10(c); the Department requested additional information on March 31, 2015, to bring the HCP submittal into conformance with the State's requirements for completeness as prescribed by 17 Ill. Adm. Code 1080.10. That additional information was received by the Department on April 3, 2015. The public notice period will be detailed under #6 of the Compliance section below.

### **Compliance with the Illinois Endangered Species Protection Act**

The Act includes six criteria that must be satisfied for the authorization of incidental take of an endangered or threatened species. These criteria and the Department's determination for each are listed below.

1. The taking will not be the purpose of, but will only be incidental to, the carrying out of an otherwise lawful activity:

The stated and apparent purpose of this project is the operation of the 94 turbines that make up the Pioneer Trail Wind Farm in Ford and Iroquois Counties, Illinois. Each turbine is capable of generating 1.6 MW of electrical energy. The height of each turbine is approximately 400 feet at the highest blade tip position. **Commercial operation began in January 2012** and PTWF has estimated 45 years of productive life for the wind farm. However, the life of this project's commercial-scale wind turbines is estimated at 25 years. Take of Indiana bats and northern long-eared bats could result from collisions with the rotating turbine blades or from barotrauma (injury caused by the sudden pressure changes near turbine blades). The take of these species that could result from this project is not the purpose of PTWF's activities, but is incidental to the carrying out of an otherwise lawful activity.

2. The parties to the conservation plan will, to the maximum extent practicable, minimize and mitigate the impact caused by the taking:

The conservation plan submitted by Locke Lord LLP on behalf of PTWF describes measures that have been or will be implemented to minimize and mitigate the potential adverse effects of this project on the Indiana bat and northern long-eared bat. The measures proposed and/or completed by PTWF include:

Avoidance of stream and wetland areas, as well as mature trees, was a priority in project layout. All project turbines are located more than 1,000 feet from contiguous forested habitat as recommended by USFWS to be the best practice for avoiding potential bat habitat impact.

To avoid direct impacts on summer maternity habitat, PTWF reviewed habitat information to ensure that no suitable Indiana bat or northern long-eared bat summer maternity habitat is located within the Pioneer Trail Plan Area and relocated two turbines that were planned for construction within 1,000 feet of a woodland with a direct connection to summer maternity habitat located outside of the Plan Area.

PTWF is currently curtailing cut-in speeds (raise the wind speed at which turbines begin to generate power and send it to the grid) from the manufacturer's rated cut-in speed of 3.5 m/s (7.8 mph) to 6.9 m/s (15.4 mph) during the fall migration period (August 15 – October 15) to reduce impacts to bats under the terms of a Technical Assistance Letter from the USFWS dated March 29, 2012, and PTWF's Bird and Bat Conservation Strategy. **The USFWS issued an Incidental Take Permit (ITP) on June 26, 2015**, allowing PTWF to curtail at 5.0 m/s (11.2 mph) from sunset to sunrise when the ambient temperature is above 10° Celsius (50° Fahrenheit) from August 15 to October 15, based on a rolling 10-minute average. PTWF will implement the new curtailment regime as of August 15, 2015 (or after the State of Illinois Incidental Take Authorization is executed, whichever is later).

PTWF is permitted by the USFWS to implement an adaptive management process that will allow adjustment of cut-in speeds if monitoring results indicate that the

conservation measures implemented by PTWF are not having the desired effect or are needlessly restrictive.

PTWF proposes to feather turbine blades below the manufacturer's rated cut-in speed of 3.5 m/s for the remainder of the year to minimize turbine rotation when power is not being generated.

Summer habitat and winter habitat mitigation projects are proposed to compensate for the projected take of Indiana bats and northern long-eared bats. Summer and winter habitat projects were negotiated with the USFWS, including monitoring components for each.

PTWF will implement a mortality monitoring plan over the life of the project that provides a means of ensuring compliance with the USFWS ITP. The monitoring program includes standardized carcass searches, searcher efficiency trials, and carcass removal trials. Monitoring is intended to enable PTWF to estimate overall bat mortality rates from the project, estimate Indiana bat and northern long-eared bat mortality at the project, and evaluate the circumstances under which fatalities occur.

It is the opinion of the Department that these measures, along with any additional terms and conditions listed in the Authorization section of this document will, to the maximum extent practicable, minimize and mitigate the impact caused by the potential taking.

3. The parties to the conservation plan will ensure that adequate funding for the conservation plan will be provided:

PTWF has estimated that the cost of implementation of minimization and mitigation measures (as permitted by USFWS) will be approximately \$3,685,410 over the life of the project. As part of their application for a federal ITP, PTWF has agreed to provide a letter of credit in favor of the USFWS to assure that funding will be available for all mitigation obligations plus potential changed circumstances.

4. Based on the best available scientific data, the Department has determined that the taking will not reduce the likelihood of survival or recovery of the endangered species or threatened species in the wild within the State of Illinois, the biotic community of which the species are a part, or the habitat essential to the species' existence in Illinois:

**Pre-construction acoustic surveys** were conducted for bats in the PTWF Plan Area between April 15, 2010, and November 4, 2010, utilizing both stationary and mobile echolocation detectors. Two stationary detectors were deployed at different heights on one meteorological tower located in the south-central part of the project area approximately two miles from the nearest forested habitat. Bats were recorded on 145 of 201 stationary survey nights. Fifteen mobile surveys (6 transects each) were conducted, with emphasis on the fall migration period (post-

July 15). Fifty-eight bat passes were recorded with the highest number of passes located in the southwest corner of the Plan Area. Of the calls identifiable to the species-level, none of them were confirmed as state or federally listed. However, six genus-level *Myotis* calls were recorded during the stationary surveys (July 3, July 27, August 11, and August 14); and three genus-level *Myotis* calls were recorded during the mobile surveys (August 20 and August 25). PTWF concluded that during the 2010 season, bat activity within the Plan Area was highest from mid-July through early October.

Two years of **post-construction bat mortality monitoring** occurred at 50 of the 94 PTWF turbines (selection criteria noted in HCP):

- First year – fall migration (August 13 – October 10, 2012) and spring migration (April 2 – May 8, 2013); in accordance with PTWF's Avian and Bat Protection Plan of 2012, turbines were curtailed at 6.9 meters/second (m/s) or 15.4 miles per hour (mph) during the fall season. A total of twenty-six bat carcasses were located during the surveys. None of the mortalities included state or federally listed species; however, four of the carcasses located during the fall survey were indicated as little brown bats (*Myotis lucifugus*) in the report prepared by ARCADIS – two found on September 12 and two found on October 10, when turbines were curtailed at 6.9 m/s. PTWF and their current consultant, Stantec, question the bat identification based on known misidentifications in 2013 by ARCADIS; however, the 2012 carcasses had been disposed of, therefore no confirmatory identification can be established.
- Second year – fall migration (August 5 – October 2, 2013) and spring migration (March 31 – May 7, 2014); turbines were curtailed at 6.9 m/s during the fall season. A total of thirty-seven bat carcasses were located during the surveys; none were state or federally listed species. No *Myotis* species were found.

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The **Indiana bat** is listed as an endangered species in Illinois because of its decline in numbers over recent decades. The species is also listed as endangered at the federal level. Historically, that decline was believed to be primarily caused by damage to caves and mines in which Indiana bats hibernate and disturbance of bats during hibernation. Since its discovery during the winter of 2006-2007 in New York, White Nose Syndrome, a fungal infection that causes mortality of hibernating bats, has dramatically increased the pressure on Indiana bat populations in Illinois and across its range. The disease was confirmed in Illinois populations in 2013. The low reproductive rate of bats coupled with the vulnerability to disease afflicting the species at hibernacula is a cause of concern for potentially severe population level declines. The USFWS has designated Critical Habitat for the Indiana bat at Blackball Mine in LaSalle County, although this is not the largest hibernation site for the species in Illinois.

Little is known about the vital period in early spring and late fall when the species migrates. In spring, gravid females move quickly to previously-used maternity colony sites, arriving within several days of emergence in April; males may also migrate, but may remain in close proximity to the hibernation site. Pups are born in late May or early June, and are often volant by late June or mid-July. The summer habitat of Indiana bats is forested areas, where the bats use trees with exfoliating bark as day roosts and for maternity colonies. Fall migration typically begins in late July or early August. In contrast to the spring, females may visit several hibernation sites over several weeks before selecting one to spend the winter, experiencing one or more mating opportunities at each location. In the winter, the Indiana bats hibernate in dense clusters in caves or abandoned mines that provide the needed temperature and humidity conditions. Disturbance of bats during hibernation can cause excessive energy expenditure and lead to mortality when the remaining fat reserves are not adequate to keep bats alive until spring.

The Illinois Natural Heritage Database includes 71 element occurrence records for the Indiana bat that are classified as extant populations. These records include both hibernacula and locations at which bats have been captured during surveys conducted during the summer breeding season. Data reflects the presence of Indiana bats at Illinois maternity colonies and/or day roosts as early as April 11 and as late as October 4. Locations are scattered across much of the southern  $\frac{3}{4}$  of Illinois. While the range of Indiana bats in Illinois is broad, declines in the number of bats found at traditional hibernacula indicate that the species remains in jeopardy. In 1990, biologists identified an Indiana Bat maternity colony along the Middle Fork of the Vermilion River south of Paxton. In 2010, biologists captured eight Indiana Bats, including four post-lactating females, a non-reproductive adult female, and three juveniles along the Middle Fork of the Vermilion River and its tributaries. In August 2014, biologists captured three post-lactating females and two adult males in the same area. These findings suggest Indiana Bat maternity colonies are annually present along the upper Middle Fork of the Vermilion River. However, the migration pathways of these bats remain unknown.

The Department has issued 4 previous Incidental Take Authorizations (ITA) for the Indiana bat. Two were for wind energy projects and two were for electric transmission projects. Minimization/mitigation measures for the wind energy projects included modification of turbine operations based on wind speeds (curtailment and feathering) and monitoring of turbine-related mortality. No Indiana bats were discovered during ITA mortality monitoring; although the species was confirmed to be present through acoustic detection, indicating that avoidance and minimization measures were successful. Both of the wind energy projects previously authorized to take Indiana bats in Illinois involved single turbine installations.

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The USFWS listed the **northern long-eared bat** as a federal threatened species effective May 4, 2015; therefore, per the Act, the species was automatically listed in Illinois. The northern long-eared bat was designated a threatened species by the Illinois Endangered Species Protection Board. As with the Indiana bat, the primary threat to the continued existence of the northern long-eared bat is White Nose Syndrome. Threats from habitat modification, wind energy development, climate change, and contaminants may become more significant if population decline due to White Nose Syndrome continues.

The banding of northern long-eared bats has revealed potential longevity of twenty years. The species uses trees for day roosts and maternity colonies in the summer, but occasionally roosts in human structures such as bridges and barns. In contrast to the Indiana bat's preference for dead or dying trees with exfoliating bark, northern long-eared bats use both live and dead trees. Northern long-eared bats use trees of a broader range in size than Indiana bats and are more likely to use trees that are relatively isolated (not within a forest). Females bear a single young in late June to early July. Foraging home ranges have been shown to exceed 150 acres. Migration between summer habitat and hibernacula may be limited to approximately 60 miles; although no hibernation sites in Illinois are known within this radius of PTWF. Winter hibernating habitats are caves and abandoned mines, although the northern long-eared bat is not known to form large winter colonies. Hibernation sites for northern long-eared bats using summer habitat in the vicinity of PTWF have not been determined.

The Illinois Natural Heritage Database includes 87 element occurrence records for northern long-eared bats that are classified as extant populations. These occurrences include both summer locations of maternity colonies and winter hibernacula. Locations are scattered across the entire state. In 2002, biologists captured 2 post-lactating females along the Middle Fork of the Vermilion River in Ford County. In 2010, biologists captured six northern long-eared bats, including four post-lactating females, a juvenile female, and an individual which escaped before processing, along the Middle Fork of the Vermilion River and its tributaries in Ford and Champaign Counties. In August 2014, biologists captured two post-lactating females and one adult male in the same area. These findings suggest northern long-eared bat maternity colonies are annually present along the upper Middle Fork of the Vermilion River. However, the migration pathways of these bats remain unknown.

The Department has issued no previous ITAs for the northern long-eared bat. Since the species is a very recent addition to the state and federal endangered and threatened species lists, no other project has prompted the need to apply for take authorization for this species.

The Department is aware of three documented instances in Illinois where the death of a northern long-eared bat is attributable to a wind turbine, each of which occurred prior to the species being listed. Two of these occurred in Vermilion

County during federally-authorized bat acoustic deterrence experiments conducted at another wind farm within ten miles of PTWF, on September 25, 2013, and August 31, 2014. The third occurred on May 24, 2014, in western Illinois during monitoring at a single-turbine installation. In all three cases, the turbines were operating at the manufacturer's recommended cut-in speeds.

The Department has concluded that the taking proposed herein will not reduce the likelihood of survival or recovery of the Indiana bat or northern long-eared bat in the wild within the State of Illinois, the biotic community of which the species are a part, or the habitat essential to the species' existence in Illinois. This conclusion is based on the following considerations:

Based on data the State of Illinois has received in personal communications with the USFWS, bat mortality studies as of 2015 at wind farms across the US reflect the confirmed loss of 8 Indiana bats and 42 northern long-eared bats. Known losses in the State of Illinois include 0 Indiana bats and 3 northern long-eared bats. With 2,350 commercial-scale turbines currently operational in Illinois, and estimating total bat mortality (listed and non-listed) at 10 bats/year/turbine mortality; the documented losses of these two listed species equates to 0.013 % of estimated total bat mortality from turbines in Illinois in 2014. It is important to note, however, that the Department is not aware that any proportional relationship has been shown between total bat mortality and listed bat mortality.

Illinois wind turbine mortality survey data, consistent with regional and national data, reveal that three non-listed species of bats are most threatened by wind farm development. These include the eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), and silver-haired bat (*Lasionycteris noctivagans*). *Myotis* species comprise only a tiny fraction of bats killed at Illinois wind turbines during normal operations. Minimization measures implemented through this authorization have a proven record of reducing total bat mortality and *Myotis* bat mortality and should greatly reduce the risk of mortality for *Myotis* bats at PTWF.

White Nose Syndrome is the main threat to populations of Indiana bat and northern long-eared bat in Illinois. Losses to other causes (like wind installations) will become more important over time, but the Department believes the losses at PTWF permitted under this authorization will not cause a reduction in the survivability or recovery of the species in the wild in Illinois. Monitoring and adaptive management will ensure that this continues to be true.

PTWF has constructed the 94 turbines primarily on agricultural land with limited suitable habitat for day roosts or maternity colonies and no winter hibernacula. Suitable maternity colony and day roost habitat does exist nearby along the Middle Fork of the Vermilion River, as well as potentially within the urban forest in the town of Paxton. Bats that may be taken by the operation of the PTWF are most likely to be individuals foraging or passing through the area during migration. A critical aspect missing from the best available science related to wind farm operation and the industry's interface with bats is a lack of understanding of bat migration and foraging behavior.

The USFWS estimates the 2015 hibernating population of Indiana bats in Illinois to number approximately 56,000. Because the northern long-eared bat prefers to hibernate in crevices, winter population estimates for this species are not as reliable, but this species has long been far more numerous in Illinois than the Indiana bat. The nearest known hibernaculum for both species in Illinois is Blackball Mine in LaSalle County, approximately 75 miles northwest of the project area, although no evidence exists that Ford and Iroquois County bats migrate in that direction or to that location. Other potential hibernation sites exist in the State of Indiana which might be utilized by bats in the vicinity of PTWF. The pathway of both spring and fall migrations will strongly influence the exposure of listed bats to the risks of collision and barotrauma.

The Department concludes that the potential take of Indiana bats and northern long-eared bats due to the operation of PTWF is not likely to reduce the likelihood for survival and recovery of either species in the State of Illinois.

5. Any measures required under Section 5.5(b)(6) of the Act will be performed:

These measures are listed below under "Authorization." This authorization is, by definition, subject to those terms and conditions and the signature of a representative of PTWF indicates PTWF's commitment to performing those measures.

6. The public has received notice of the application and has had the opportunity to comment before the Department made any decision regarding the application:

Public notice of PTWF's request for authorization of incidental take was published in the Breeze Courier (official state newspaper) on April 15, 2015, and in the Paxton Record on April 15, April 22, and April 29, 2015. Copies of the conservation plan were deposited at the Paxton Carnegie Library and at the A. Herr Smith and E.E. Smith Library in Loda, where they were available for public review. The conservation plan was also placed on the Department's website. The deadline for public comment was May 29, 2015. Eighteen public comments were received by the Department. The comments were transmitted to PTWF on June 1, 2015. An analysis of the comments was received by the Department on June 8, 2015, including a description of the revision made to the conservation plan in response to public comment.

### **Authorization**

It is the determination of the Department that the measures implemented and to be implemented by PTWF will adequately minimize and mitigate the anticipated taking of Indiana bats and northern long-eared bats incidental to activities associated with the operation of the Pioneer Trail Wind Farm, a wind energy facility located east of the towns of Paxton and Loda in Ford and Iroquois Counties, Illinois. Further, the Department has concluded that the take authorized herein will not reduce the likelihood of survival or recovery of the Indiana bat or northern long-eared bat in the wild within the State of Illinois, the biotic community of which the species are a part, or the habitat essential to the species' existence in Illinois.

All terms and conditions included in the aforementioned conservation plan submitted by PTWF to the Department are incorporated into this agreement by reference and are made a part thereof.

Pursuant to Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5] and the Administrative Rules for the Incidental Taking of Endangered and Threatened Species [17 Ill. Adm. Code 1080.40(b)], the authorization is issued subject to the following terms and conditions, which may include additions or modifications to the minimization and mitigation measures proposed by the applicant under Compliance condition #2 above:

1. This authorization is effective upon the signature of the Department and shall remain in effect for a period of **25 years** (expiration October 15, 2040) unless terminated by written agreement of both parties. The Department believes that based on the population level uncertainty related to bats, an opportunity to reevaluate population dynamics and current wind industry trends at the estimated turbine life (25 years) is the preferred permit duration. The term of the permit may be reviewed and extended by the Department in accordance with Authorization condition #2 below upon written request by PTWF no less than three months prior to expiration. This authorization may be revoked pursuant to the Act and 17 Ill. Adm. Code 1080.80(b) if the Department finds that PTWF has failed to comply with any of the terms and conditions or has been responsible for the taking of Indiana bats or northern long-eared bats beyond that which is incidental to activities associated with the operation of the Pioneer Trail Wind Farm, a wind energy facility located east of the towns of Paxton and Loda in Ford and Iroquois Counties, Illinois.
2. The effective period of this authorization may be altered by mutual written agreement between PTWF and the Department. The Illinois Endangered Species Protection Board will be notified of any such alteration. Any substantive changes, including but not limited to a change in the project footprint or a change in the Illinois endangered or threatened species which could potentially be affected, will require that a new conservation plan be submitted to the Department to initiate the review and public notice process as required by the Act. *For the purposes of this authorization, an increase or decrease in the turbine cut-in speed implemented based on mortality of Indiana bats and/or northern long-eared bats in accordance with the adaptive management provisions of this Authorization or as approved by the Department shall not be considered a substantive change.*
3. This authorization is non-transferable.
4. The Department reserves the right of entry to inspect potential habitat, species management and preservation practices, and data collection methodologies. PTWF shall make pertinent records and materials available to the Department for examination on the premises at reasonable times upon request.
5. Copies of any reports, updates, modifications or other project documentation required by the Incidental Take Permit issued on June 26, 2015, by the USFWS shall be provided concurrently to the Department. Likewise, all reports under this authorization shall be

provided to the USFWS. This includes but is not limited to mortality monitoring reports and reports of fatalities of any Indiana bats or northern long-eared bats **within 48 hours of discovery**.

6. The observation of live individuals or discovery of carcasses of **any** Illinois endangered or threatened species within the project plan area shall be reported to the Department **within 48 hours** of discovery. Any such reports shall identify the species found and the location at which the individual was observed.
7. The Department shall review and approve the qualifications of any persons hired or contracted by PTWF to conduct the monitoring required by this authorization. PTWF shall ensure that persons conducting the monitoring first obtain the required IDNR Scientific Collection Permit and IDNR Endangered and Threatened Species Permit.
8. The Department regards curtailment as a minimization strategy scientifically proven by an abundance of research to reduce overall bat mortalities and, therefore, Indiana bat and northern long-eared bat mortalities. The Department requires the following:
  - Curtailment wind speed - **curtailment of all turbines to 5.0 m/s from sunset to sunrise** based on a rolling 10-minute average;
    - Threshold air temperature - **when the ambient temperature is above 15° Celsius (59° Fahrenheit)** based on a rolling 10-minute average;
    - Calendar window - **from August 15 to October 15**;
  - Blade feathering - turbine blades shall be feathered at wind speeds below the curtailment wind speed from August 15 to October 15; turbine blades shall **also** be feathered below the manufacturer's rated cut-in speed of 3.5 m/s from **April 1 to October 31**;
  - Annual Compliance Reporting - reports shall be provided to the Department by **December 31 of each year** for the duration of the authorization and shall include a statement indicating that curtailment requirements were implemented or reasoning for any deviations and corrective actions.
9. Mortality monitoring in fall shall occur during the two years following issuance of the State of Illinois' Incidental Take Authorization (2016 and 2017) when wind turbines are curtailed at 5.0 m/s and during the monitoring period extension as defined under Authorization condition #11 below. Monitoring reports shall be provided to the Department **within 60 days of survey completion**.
10. The following mortality monitoring protocol shall be implemented –
  - 50 of 94 randomly selected turbines – fall monitoring weekly (August 15 - October 15) Year 1 and Year 2 of operation **after issuance of the State of Illinois Authorization** – this will occur in 2016 and 2017 as described above;
  - Year 6 (2021) - spring monitoring (April 1 – May 15) and fall monitoring (August 15 – October 15);

- Every 5 years thereafter – fall monitoring;
  - Every 10 years thereafter – spring monitoring, if no take during Year 6 [if spring take occurs (as outlined in the HCP) – spring monitoring will occur with fall monitoring every 5 years];
  - Any adaptive management change requires 2 subsequent years of spring and/or fall monitoring as described below.
  - Monitoring reports shall be submitted to the Department **within 60 days of completion**. For all *Myotis* fatalities, the report shall include date of find; potential date of fatality; turbine location; wind speed profile, air temperature profile, and power production profile for the responsible turbine on estimated date of fatality; and digital photo.
11. Monitoring – in addition, the Department requires a **fall monitoring period extension, utilizing the same methods, beginning July 15 of each monitoring year** to aid in a determination of whether the August 15 – October 15 curtailment window is effective at minimizing State-listed bat mortality to the maximum extent practicable. If no carcass of a listed bat is discovered during the Year 1 and Year 2 surveys, the extended fall monitoring may be discontinued. If a carcass of a listed bat is discovered, the curtailment period shall be extended a sufficient number of whole weeks to include the earliest date of listed species mortality. Monitoring reports shall analyze mortality outside the curtailment window **separately**. For all *Myotis* fatalities, the report shall include date of find; potential date of fatality; turbine location; wind speed profile, air temperature profile, and power production profile for the responsible turbine on estimated date of fatality; and digital photo.
12. Annual mortality monitoring reporting, as per the description included in the HCP as required by the USFWS, shall include raw data on all bat mortalities and locations.
13. Adaptive Management protocol shall be implemented as follows **based on empirical evidence (i.e. based on covered species fatalities actually observed)**:
- **INCREASES IN CUT-IN SPEED:**
    - If Indiana bat fatalities are  $\geq 3$  OR northern long-eared bat fatalities are  $\geq 2$  during any single monitoring period → cut-in speed shall be raised 0.5 m/s, and two consecutive years of fall monitoring shall occur.
    - The cut-in speed shall be increased as soon as one of the specified triggers is reached (i.e. PTWF shall not wait until the end of the monitoring period to apply the cut-in speed adjustment).
    - Further incremental increases in curtailment are described in the HCP.
    - Spring mortality at this rate will trigger two consecutive years of spring and fall monitoring.
  - **DECREASES IN CUT-IN SPEED:**

- If Indiana bat fatalities are  $\leq 2$  OR northern long-eared bat fatalities are  $\leq 1$  during any single monitoring period → cut-in speed may be reduced 0.5 m/s at PTWF's option.
- If PTWF elects to reduce cut-in speeds, PTWF shall conduct two consecutive years of monitoring during the season(s) for which the cut-in speeds were reduced.
- Further incremental decreases in curtailment are described in the HCP.
- WRITTEN NOTIFICATION to the Department shall occur prior to the implementation of any adaptive management measure.

14. The Department shall accept a range of **175 - 206 acres of summer habitat mitigation** measures as follows:

- At a minimum, 44 acres of currently wooded habitat (of suitable structure to provide summer habitat for the listed bat species) within the Middle Fork of the Vermilion River corridor shall be acquired, transferred to the Champaign County Forest Preserve District (or another local conservation entity), and permanently protected.
- Approximately 131 acres of land within the Middle Fork of the Vermilion River corridor shall be acquired, transferred, restored (with a goal of providing suitable forested structure to provide summer habitat for the listed bat species), and permanently protected. Restorable suitable summer habitat acres are to be identified by the Champaign County Forest Preserve District (or another local conservation entity).
- At this time, the Department believes that the specified mitigation acreage can sufficiently meet the “maximum extent practicable” as defined by the Act for the term of this Authorization. Future reviewers will make a determination as to whether the mitigation standard met herein is sufficient for any potential term extensions based on the known life history information of the covered species and on the accumulated understanding of the interface between the wind industry and the covered species.
- Funding shall be provided by PTWF for acquisition, long-term management agreements, implementation of necessary actions to maintain habitat quality, and monitoring.
- Lands shall be identified and secured; and an agreement shall be executed with the Champaign County Forest Preserve District (or another local conservation entity) within 6 years of issuance of the ITP, which occurred on June 26, 2015; therefore during 2021, an executed agreement shall be provided to the Department.
- Implementation of summer habitat mitigation shall commence within 7 years of ITP issuance. Annual maintenance shall occur for 5 years following restoration. Habitat establishment success and bat use monitoring shall be conducted in Year 3 and Year 7 following completion of restoration on all mitigation lands.

- Ten artificial roost trees shall be attached to utility pole structures in the restoration parcels to potentially decrease the temporal lag that accompanies restoration projects. The roosts shall be monitored each year during the first three years following installation.
- Artificial roost tree projects shall be monitored for bat use coincidentally in any year in which mortality monitoring occurs at PTWF.
- Recreational access to mitigation lands may be permitted for low-impact uses such as hiking, camping, etc., but shall be restricted to those activities that are not expected to disperse bats from summer habitat.
- Permanent easement protection for mitigation lands shall be sought through the Illinois Nature Preserves Commission, if such lands meet eligibility requirements.
- Proposed locations, proposed restoration methods, easement mechanisms, a detailed study plan for artificial roost trees, and monitoring methodologies for all mitigation measures shall be pre-approved by the Department.
- Mitigation land suitability requirements shall be met as laid out in the USFWS Indiana Bat Resource Equivalency Analysis Model for Wind Energy Projects.
- All mitigation monitoring reports shall be provided to the Department within 60 days of survey completion.

15. Mitigation valuations are based on the Department's best current understanding of the species life history needs and impact analysis relevant to the site available at the time of review.

16. All reports, maps, updates and other documentation shall be submitted to:

Illinois Department of Natural Resources  
 Office of Resource Conservation  
 Endangered Species Program – Incidental Take Authorization Coordinator  
 One Natural Resources Way  
 Springfield, IL 62702-1271

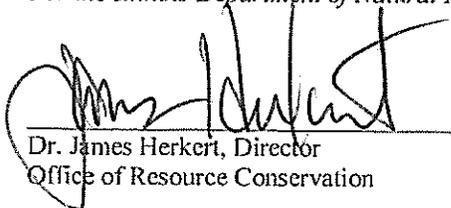
(217)557-8243  
 DNR.ITAcoordinator@illinois.gov

The Department's Endangered Species Program shall provide all reports to the Illinois Endangered Species Protection Board and to the Department's Natural Heritage Database.

17. The PTWF official identified below is authorized to execute this agreement. Execution by PTWF indicates acceptance of all terms and conditions described in this authorization.

18. The execution of this agreement does not waive or excuse the responsibilities of PTWF to comply with all other Federal, State or local regulations, including but not limited to obtaining any required permits for the execution of this project.

*For the Illinois Department of Natural Resources*

  
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Dr. James Herkert, Director  
Office of Resource Conservation

10-8-15  
\_\_\_\_\_  
Date

*For Pioneer Trail Wind Farm, LLC*

  
\_\_\_\_\_  
Paul Bowman  
Senior Vice President

**Paul Bowman**  
**Senior Vice President**  
\_\_\_\_\_  
Printed Name and Title

7 October 2015  
\_\_\_\_\_  
Date