

FINDINGS AND RECOMMENDATIONS
FOR ISSUANCE OF SECTION 10(a)(1)(B) INCIDENTAL TAKE PERMIT
ASSOCIATED WITH THE HIGH PRAIRIE WIND ENERGY CENTER
HABITAT CONSERVATION PLAN

*(Habitat conservation plan for Indiana bat, northern long-eared bat, and little brown bat at High
Prairie Wind Energy Center in Adair and Schuyler Counties, Missouri)*

Contents

1.0	Introduction and Background	2
1.1	Description of the Proposed Action	3
1.2	Covered Species	3
1.3	Types of Covered Activities	4
1.4	Alternatives to the Taking	4
1.5	Conservation Strategy	4
1.5.1	Incidental Take Avoidance and Minimization and Mitigation Measures	5
1.5.2	Monitoring, Reporting, and Notification	5
1.5.3	Unforeseen and Changed Circumstances	6
2.0	Analysis of Effects	6
3.0	Public Involvement and Updates Included in the Final HCP and EA	8
4.0	Incidental Take Permit Criteria- Analysis and Findings	8
5.0	General Criteria and Disqualifying Factors- Findings	10
6.0	Recommendation on Permit Issuance	10
7.0	Supporting Materials	11
8.0	Literature Cited	11

1.0 Introduction and Background

The U.S. Fish and Wildlife Service (Service) proposes to issue an Incidental Take Permit (ITP) for 6 years for the implementation of the Habitat Conservation Plan for High Prairie Wind Energy Center (HCP). The purpose of the ITP is to authorize the incidental take of the Covered Species associated with HCP implementation. Take would be authorized for Covered Species, including the Indiana bat (*Myotis sodalis*), Northern long-eared bat (*M. septentrionalis*), and little brown bat (*M. lucifugus*). Take authorization for the little brown bat will go into effect if the species becomes listed in the future. The Service is authorized to complete this action under the authority of section 10(a)(1)(B) and section 10(a)(2) of the Endangered Species Act of 1973, as amended (ESA; 16 United States Code [USC] §§1531-1544) .

The Service received the proposed HCP and application from the Permittee (Union Electric dba Ameren Missouri, previously TG High Prairie, LLC) in November 2020. The proposed application and HCP met the application requirements put forth by 50 CFR 17.22(b)(1), 50 CFR 17.32(b)(1), and 50 CFR 13.12. The requested ITP is to be issued to the Permittee, who owns and operates High Prairie Wind Energy Center (Project), in Adair and Schuyler Counties, Missouri.

The Service involved the public by making a Notice of Availability for the draft HCP and draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) available for review and comment. These documents were published in the Federal Register on December 1, 2020 (85 FR 77234–77236). Public comments were accepted during a 30-day period following publication of the Notice of Availability. Both documents were available through the Regulations.gov website, and paper copies were available upon request.

Following the public review and comment period, the Service reviewed input and updated the draft EA as appropriate, the Service also worked with the Permittee to update the HCP as appropriate. Considering the updated HCP and EA, the Service completed an intra-service Section 7 biological and conference opinion (Opinion), drafted conditions of the proposed permit, and prepared the analysis and findings (contained in this document) for the permit.

Documents used in the preparation of this Statement of Findings and Recommendations include the HCP, an associated Finding of No Significant Impact (FONSI) under NEPA, and the Service's Section 7 biological and conference opinion on the proposed permit. Other supporting materials include the Notice of Availability and associated documents, public comments, draft permit conditions, and Memo from Stantec dated 4.14.2021.

1.1 Description of the Proposed Action

The proposed action is the potential issuance of the six-year incidental take permit (ITP) and includes the incidental take authorization, along with the associated conservation measures, adaptive management, and monitoring provisions in the Habitat Conservation Plan (HCP) that would go into place upon issuance. Section 10(a)(2)(A) of the Endangered Species Act of 1973, as amended (ESA; 16 United States Code [USC] §§1531-1544) requires that no permit may be issued by the Service authorizing any taking unless the applicant submits a conservation plan that specifies the following requirements: the impact that will likely result from such taking; what steps the applicant will take to minimize and mitigate such impacts and the funding that will be available to implement such steps; what alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized; and such other measures as the Service may require as being necessary or appropriate for the purposes of the plan. The proposed HCP meets the requirements of section 10(a)(2)(A) and are summarized herein.

The Project is an approximately 400 megawatt (MW) wind-energy facility, which consists of 175 wind turbine generators and associated access roads, an underground electrical collection system, substations, a switchyard, meteorological (MET) towers, an operations and maintenance building, overhead transmission lines, laydown yards, temporary batch plants, and temporary crane paths. The Project is located in Adair and Schuyler counties in northern Missouri. The Project began commercial operations in December of 2020.

The lands covered by the HCP include the Plan Area and Permit Area (see HCP Figure 1). The 114,090-acre Plan Area includes all areas that will be affected directly and indirectly by activities associated with operation of the Project. This includes the entire Permit Area (explained below), as well as areas of mitigation. The areas of mitigation are the land credits purchased from the Chariton Hills Conservation Bank and includes 217 acres (synonymous with mitigation credits). The 113,873.2-acre Permit Area is the geographic area within the project boundary where the impacts of the activities occur for which ITP coverage is requested.

The requested permit term is 6 years. The functional operational life of the Project will continue for 30 years from the initial year of operation. Following the expiration of the 6-year permit, the Applicant may develop a new HCP and apply for a longer-term ITP or avoid take of listed bats at the Project for the remaining 24 years of operational life.

1.2 Covered Species

The Permittee is applying for a Permit for the Indiana bat, northern long-eared bat, and little brown bat for the covered activities as described below. The Indiana bat is currently listed as endangered under the ESA. The northern long-eared bat is currently listed as threatened under the ESA. The little brown bat is not currently listed under the ESA.

1.3 Types of Covered Activities

Operation of Project turbines is the only “Covered Activity” for which take authorization is being sought. Take authorization under the ITP will also address collection of any dead or injured Covered Species during post-construction monitoring for permit compliance. The Permittee will implement conservation measures to minimize and mitigate potential take that may occur as a result of Project operations.

1.4 Alternatives to the Taking

Two alternatives, the *Avoidance Alternative* and the *More Restrictive Alternative*, were considered to determine practicability and reported in the HCP. Under the *Avoidance Alternative*, take of Covered Species would be avoided by feathering turbines up to at least 6.9 m/s at night (but could include up to ceasing operations at night) during the bat active season, such that take is unlikely. As a result, no section 10(a)(1)(B) permit would be issued and no HCP would be implemented by the applicant. The Permittee determined the avoidance alternative fails to meet the Project’s purpose and need.

Under the *More Restrictive Alternative*, the Applicant would implement an HCP but turbines would cut in to the wind at higher wind speeds (6.0 m/s) than the proposed action. Based on publicly available data from other wind energy facilities, increasing cut-in speed to 6.0 m/s could reduce the potential for all-bat mortality, including Covered Species. However as reported in HCP Section 7.2.4.1 there is a substantial overlap in the mean percent reduction, thus the take of Covered Species may not be significantly different than if turbines cut-in at 5.0 m/s (proposed action). The Permittee determined the restrictive alternative fails to meet the Project’s purpose and need.

1.5 Conservation Strategy

The purpose of the HCP is to avoid, minimize, and mitigate effects to the Covered Species. The conservation strategy contains the following (as summarized below): (1) identification and implementation of incidental take avoidance, minimization, and mitigation measures to reduce impacts to Covered Species; (2) monitoring, reporting and notification requirements; and (3) responses to changed circumstances. The permittee assures funding for the conservation strategy, and all obligations under the HCP, using a variety of financing mechanisms including: the Project’s annual Operation and Maintenance budget; provision of a contract with Chariton Hills Mitigation Bank; and a security for changed circumstances and contingency funding (HCP Chapter 8).

1.5.1 Incidental Take Avoidance and Minimization and Mitigation Measures

The proposed action describes measures to avoid, minimize or mitigate the adverse effects to Covered Species. Collectively these measures reduce take of the Covered Species, and permanently protect summer habitat to offset impacts of the action. These measures include:

Operational minimization: From April 1 – October 31st, turbines will be cut-in at wind speeds of 5.0 m/s at night (45 minutes before sunset to 45 minutes after sunrise). Below the 5.0 m/s cut-in speed, turbine blades will be “feathered” (i.e., turbine blades will be pitched into the wind to minimize spinning to less than two rotations per minute). The only exception to turbine operational adjustments are when temperatures are at or below 40°F. Turbines will be allowed to operate at full capacity at or below this temperature. Previous studies at other wind facilities have shown that feathering turbine blades at specific wind speeds significantly reduces the number of bat fatalities (see HCP Section 7.2.1.4). These studies suggest that feathering below 5.0 m/s (i.e. proposed action), would reduce bat mortality by an average of 62 percent.

Mitigation: Mitigation activities will have beneficial effects to Covered Species during migration and as summer roosting habitat. The action includes mitigating the impacts to Covered Species by protecting occupied habitat in perpetuity at Chariton Hills Conservation Bank. The Service authorized the bank pursuant to a Conservation Bank Enabling Instrument (dated July 11, 2018; USFWS 2018). Based on the outputs from the Resource Equivalency Analysis Models (REA Model) for Wind Energy Projects (USFWS 2016a, b, c), 162.2 acres of summer habitat mitigation is required to fully offset the taking, however 217 acres were reserved as part of this Action. Therefore, the Action includes 54.8 more mitigation acres, or 33% more mitigation than needed to offset the taking and has a net neutral or minor beneficial impact to Covered Species.

1.5.2 Monitoring, Reporting, and Notification

Two distinct types of monitoring will be conducted during the implementation of the HCP. *Standardized fatality monitoring* informs adaptive management strategies that minimizes impacts and ensure impacts remain within the predetermined limits of the HCP. *Maternity colony monitoring* provides information on the persistence and population dynamics of maternity colonies within the Permit Area and does not inform adaptive management during the HCP and permit term. Monitoring, reporting, and notification includes:

Standardized fatality monitoring will be conducted annually from April 1 – October 31st. The Permittee will use Evidence of Absence software (EoA) (Dalthorp et al. 2017) based on the prior year’s site-specific data to design annual search protocols such that the average detection probability is at least 0.2 for the term of the HCP. For details see HCP Section 7.3-Monitoring Protocols.

Maternity colony monitoring will occur as a result of adaptive management (HCP Appendix C), or in years 4 and 5. The persistence of maternity colonies within the Permit Area will be monitored using mist-net surveys, with subsequent radio telemetry and emergence counts. The focus of maternity colony monitoring will be on the Indiana bat, but little brown bats will also be

monitored if take is documented through the standardized fatality monitoring. Maternity colony monitoring of northern long-eared bats will occur only if they are captured during monitoring for the other Covered Species. For details see HCP Section 7.4-Maternity Colony Monitoring.

Reporting and notifications to the Service will be provided annually and seasonally. The Permittee will provide an annual monitoring report describing methods and results of take compliance monitoring following completion of the field surveys and data analysis for each year. The report will be submitted to the Service by December 15th each year. Seasonal summaries will also be provided to the USFWS within 30 days of each season ending (i.e., by June 15 for Spring, by September 15 for Summer, and November 31 for Fall). Any fatality of a Covered Species, or federally listed species will be reported to the Service and Missouri Department of Conservation within 24 hours of positive species identification.

1.5.3 Unforeseen and Changed Circumstances

HCP assurances ('No Surprises'), described in 63 FR 8859, provides a foundation for contingency planning in an HCP. The contingency planning is addressed by identifying potential unforeseen and changed circumstances and the appropriate response to these events. Unforeseen circumstances mean changes in circumstances that could not be anticipated or planned for, that result in a substantial and adverse change in the status of a covered species. Changed circumstances are those changes that can be reasonably anticipated or planned for. Should they occur, the process for responding to them in 50 CFR 17.32(a)(5) or 17.22(a)(5) will be followed. The HCP identifies the following as foreseeable changed circumstances warranting planning consideration: 1) Listing of additional species, such as the tri-colored bat; 2) Change in risk to gray bats, such that gray bats are detected in the Permit Area, or a fatality occurs; 3) New technology or information that improves monitoring, estimating, and/or minimizing mortality. --- Each of these potential changed circumstances are addressed in the HCP, along with descriptions of triggers that will indicate the circumstances have occurred and responses that can be implemented and measured for effectiveness (see HCP Section 8.2). Changed circumstances for mitigation will be dealt with as part of the contract with Chariton Hills Conservation Bank and are included in the price of mitigation.

2.0 Analysis of Effects

The Service has determined the potential impacts to Covered Species from the proposed action will be minimized and mitigated to the maximum extent practicable by measures described in the HCP and the associated ITP (summarized in Section 1.5, above). In addition, after reviewing the current status of the Covered Species, the environmental baseline for the Action Area, the effects of the proposed actions at the High Prairie Wind Energy Center, the Service determined that the Project, as proposed, is not likely to jeopardize the continued existence of the Covered Species.

High Prairie Energy Center HCP Findings and Recommendations

The detailed analyses of the impacts are detailed in the Service's Biological and Conference Opinion (Opinion), and the basis for these determinations are summarized below:

Operational Minimization: Based on research at other wind facilities, the Service anticipates seasonal turbine operational adjustments to be implemented under this HCP to average a 62% reduction in bat fatality compared to fully operational turbines.

Standardized fatality monitoring: Fatality monitoring is anticipated to detect 20% percent of all bat carcasses. Detected carcasses will be corrected with EoA software to calculate take. Calculated take will inform adaptive management programs. Adaptive management has been incorporated into the HCP and provides flexibility to make modifications, as needed, to the proposed minimization measures if the measures have been ineffective or insufficient to meet permitted take levels or other objectives of the HCP. The Service finds the monitoring program sufficient to provide the data the Service needs to ensure compliance with permitted take levels.

Mitigation: Mitigation acres were determined using the REA Model and acres will be managed and protected through Chariton Hills Conservation Bank. Mitigation includes protection of 217 acres of occupied forested habitat in perpetuity, which is 54.8 more acres than required to fully offset the taking.

Analysis: The impact of the take was analyzed using a hierarchical framework including the following steps: 1) effects to individuals; 2) effects to maternity colonies and hibernating populations; 3) effects to the OCRU (for Indiana bat) and the Missouri population (for northern long-eared bat and little brown bat as there are no established recovery units for these species); and, 4) effects to the range-wide population. There is no potential for the Project to affect critical habitat. Up to 72 Indiana bats, 18 northern long-eared bats, and 96 little brown bats may be taken as the result of interactions with wind turbines at the Project during the permit term. In step 2, we analyzed the impacts of the taking of individuals on the maternity colonies and hibernating populations to which those individuals belong. In the analysis we included the impact of the take and didn't consider the offset of mitigation. We concluded that take from the project does not cause an appreciable difference in the fitness of the affected hibernating population, or Missouri population of Covered Species. Therefore, we concluded it is unlikely the project will cause appreciable reductions in the likelihood of survival and recovery of Covered Species within the recovery unit or range-wide population.

3.0 Public Involvement and Updates Included in the Final HCP and EA

In accordance with the National Environmental Policy Act, the Draft Environmental Assessment (EA) was circulated for public review and comment on December 1, 2020. Concurrently, the Draft Habitat Conservation Plan (HCP) was also published for public review and comment. The public review period was initiated with the publication of the Notice of Availability in the Federal Register (85 FR 77234–77236), and the 30-day public comment period ended on December 31, 2020. A comment letter was received from the Missouri Department of Conservation (MDC), two sets of comments were received from the general public, and one comment was received from the Applicant. Comments were considered in assessing project impacts. The U.S. Fish and Wildlife Service (USFWS) provided responses to the general comments and those on the EA, and the permittee provided responses to comments on the HCP. Responses are presented in Appendix G of the Final EA.

Substantive changes made as a result of public comments include more protective adaptive management for little brown bat maternity colonies, and updates to the effects analysis in the EA to include a longer time frame for population modeling and the updated adaptive management thresholds for little brown bat maternity colonies.

Substantive changes to the HCP were also made in response to a detected female Indiana bat fatality on April 15th, 2021. In coordination with the Service and MDC, the Permittee updated the conservation program to bolster the minimization and adaptive management strategies and to include the fatality as part of the impact analyzed in the HCP. Although the ITP does not authorize take that occurred prior to the effective date of the permit, the HCP was modified to ensure the impacts of the April fatality are considered during HCP implementation such that the project stays within the sideboards of the impact of the taking analyzed in the HCP, the Service's EA, and the Service's Biological and Conference Opinion. Therefore the fatality does not affect the analysis and findings (Section 4) or the recommendation provided in Section 6, below.

4.0 Incidental Take Permit Criteria- Analysis and Findings

As mandated by Section 10(a)(2)(B) of the Act, and set forth in 50 CFR 17.22 (d)(2) and 50 CFR 17.32 (d)(2) for endangered and threatened species, respectively; the Service finds that issuance criteria for an Incidental Take Permit are met. The Service makes the following findings regarding this specific project and permit action:

1. *The take will be incidental;*

The Service finds the taking of Covered Species under the HCP will be incidental to otherwise lawful activities. The activities for which incidental take coverage are sought under the ITP is the operation of turbines at the High Prairie Wind Energy Center. Any take of Covered Species associated with these covered activities will be incidental to, and not the purpose of, this lawful activity.

2. *The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such takings;*

The Service finds the Permittee will minimize and mitigate the impacts of take of Covered Species to the maximum extent practicable. They have developed an HCP, pursuant to the incidental take permit requirements codified at 50 CFR 17.22(b)(1) and 50 CFR 17.32(b)(1), which require measures to minimize and mitigate the effects of issuing the ITP. Under the provisions of the HCP, the impacts of take will be minimized, mitigated, and monitored through the following measures:

- a) Identification and implementation of incidental take avoidance and minimization measures to reduce impacts to the Covered Species (summarized above in 1.5, and detailed in Chapter 7 of the HCP);
- b) Permanently protecting occupied forested habitat at Chariton Hills Conservation Bank (summarized above in 1.5, and detailed in Chapter 7 of the HCP);
- c) Establishment of monitoring, adaptive management, and reporting strategies to document take limit compliance, adjust turbine operations based on effectiveness of minimization, and notification to the Service (summarized above in 1.5, and detailed in Chapters 7 and 8 of the HCP).

3. *The applicant will ensure that adequate funding for the conservation plan and procedures to deal with unforeseen circumstances will be provided;*

The Permittee assures funding for the conservation strategy, and all obligations under the HCP, using a variety of financing mechanisms including: the Project's annual Operation and Maintenance budget; provision of a contract with Chariton Hills Mitigation Bank; and a security for changed circumstances and contingency funding (HCP Chapter 8).

4. *The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild;*

This criterion incorporates the ESA Section 7 jeopardy standard, which is defined at 50 CFR 402.02: "Jeopardize the continued existence of means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the

reproduction, numbers or distribution of that species.” In accordance with section 7 of the ESA, the Service prepared an intra-agency biological and conference opinion to evaluate whether the taking associated with the HCP would jeopardize the continued existence of any covered species. In the biological opinion, which we have attached and incorporated into this document by reference, the Service concluded that the proposed incidental take of the Covered Species is not likely to jeopardize the continued existence of these species.

5. *The measures, if any, required under paragraph (b)(1)(iii)(D) of this section will be met; and*

The Service finds that all additional measures required by the Service as necessary or appropriate for the HCP are included in the HCP, the Permit, and by extension the Biological and Conference Opinion.

6. *The Service received such other assurances that were deemed required for the plan to be implemented.*

The Service finds the HCP provides the necessary assurances that the plan will be carried out by the Permittee.

5.0 General Criteria and Disqualifying Factors- Findings

The Service has no evidence that the permit should be denied on the basis of the criteria and conditions set forth in 50 CFR 13.21 (b)-(c). The Applicant has met the criteria for the issuance of the permit and there are no disqualifying factors that would prevent the permit from being issued under current regulations.

6.0 Recommendation on Permit Issuance

Based on the foregoing findings with respect to the proposed action, I recommend approval of a permit to High Prairie Wind Energy Center for the incidental take of the Indiana bat, northern long-eared bat, and little brown bat in accordance with the HCP, and the biological and conference opinion.

Karen Herrington, Field Supervisor
Missouri Ecological Services Field Office
U.S. Fish & Wildlife Service

7.0 Supporting Materials

- Final HCP; “High Prairie Wind Energy Center Habitat Conservation Plan”
- Draft 10(a)(1)(B) Incidental Take Permit conditions
- Biological and Conference Opinion on the U.S. Fish and Wildlife Service’s approval of a Habitat Conservation Plan and the issuance of an associated Section 10(a)(1)(B) Permit under the Endangered Species Act
- NEPA Finding of No Significant Impact and the associated Final Environmental Assessment
- Notice of Availability of Permit Application, and associated documents
- Memo from Stantec dated 4.14.2021

8.0 Literature Cited

Dalthorp, D., M. Huso, and D. Dail. 2017. Evidence of Absence (v2.0) software user guide. Data Series 1055. U.S. Department of the Interior, U.S. Geological Survey in cooperation with the U.S. Fish and Wildlife Service. 109 pp. Available at: <https://pubs.er.usgs.gov/publication/ds1055>.

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