Final Environmental Assessment

Wildhorse Mountain Wind Facility Habitat Conservation Plan for the Indiana Bat and Northern Long-Eared Bat

SEPTEMBER 2022

PREPARED FOR

U.S. Fish and Wildlife Service

PREPARED BY

SWCA Environmental Consultants

FINAL ENVIRONMENTAL ASSESSMENT

WILDHORSE MOUNTAIN WIND FACILITY HABITAT CONSERVATION PLAN FOR THE INDIANA BAT AND NORTHERN LONG-EARED BAT

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1 INTRODUCTION, PURPOSE AND NEED, AND DECISION TO BE MADE

The U.S. Fish and Wildlife Service (Service) has prepared the Wildhorse Mountain Wind Facility Habitat Conservation Plan Environmental Assessment in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code 4321 et seq.)[1], and its implementing regulations in the Code of Federal Regulations (C.F.R.) at 40 C.F.R. § 1500, and Section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended. This environmental assessment has evaluated the impacts of, and alternatives to, issuance of an Incidental Take Permit (Permit) to Southern Power, doing business as Wildhorse Wind Energy, LLC (Wildhorse Wind Energy or Applicant). An application for a Permit was submitted to the Service by the Applicant on October 18, 2019, along with the draft proposed Indiana Bat and Northern Long-eared Bat Habitat Conservation Plan for the Wildhorse Mountain Wind Facility, Pushmataha County, Oklahoma (HCP) (Wildhorse Wind Energy 2019a), which is incorporated by reference. The Applicant prepared the HCP to address incidental take of Indiana bats (*Myotis sodalis*) and northern long-eared bats (*Myotis septentrionalis*) from operation of the existing Wildhorse Mountain Wind Energy Project (Project). The Indiana bat is listed as endangered under the Endangered Species Act, and the northern long-eared bat is listed as threatened. This environmental assessment provides an evaluation of potential impacts to the human and natural environment resulting from issuance of a Permit, which includes implementation of the proposed HCP (Wildhorse Wind Energy 2019a), including avoidance and conservation measures.

The Project has been constructed within Pushmataha County, Oklahoma. The Project consists of 29 wind turbines with a total nameplate generating capacity of 100 megawatts. Pre-construction surveys conducted within the Project Area revealed the presence of both bat species, therefore construction occurred during the inactive season (November 1 – March 31) in order to eliminate the risks of bat mortality, and Project operations commenced on December 26, 2019.

The HCP Plan Area includes areas where authorized incidental take could occur (i.e., Permit Area), as well as where conservation measures would take place, including off-site mitigation. In total, the Plan Area is 13,731.6 acres including the 13,641.6-acre Permit Area and the Kiamichi River Mitigation Site (Mitigation Site), consisting of 90 acres of contiguous forested habitat in Pushmataha County (Figure 1.1) (Wildhorse Wind Energy 2019a).

[1] On July 16, 2020, the Council on Environmental Quality instituted updates to the regulations implementing the procedural provisions of the National Environmental Policy Act (*Federal Register* 85:137). The effective data for the new rule is September 14, 2020. Pursuant to the authority in 40 C.F.R. § 1506.13, "The regulations in this subchapter apply to any NEPA process begun after September 14, 2020. An agency may apply the regulations in this subchapter to ongoing activities and environmental documents begun before September."

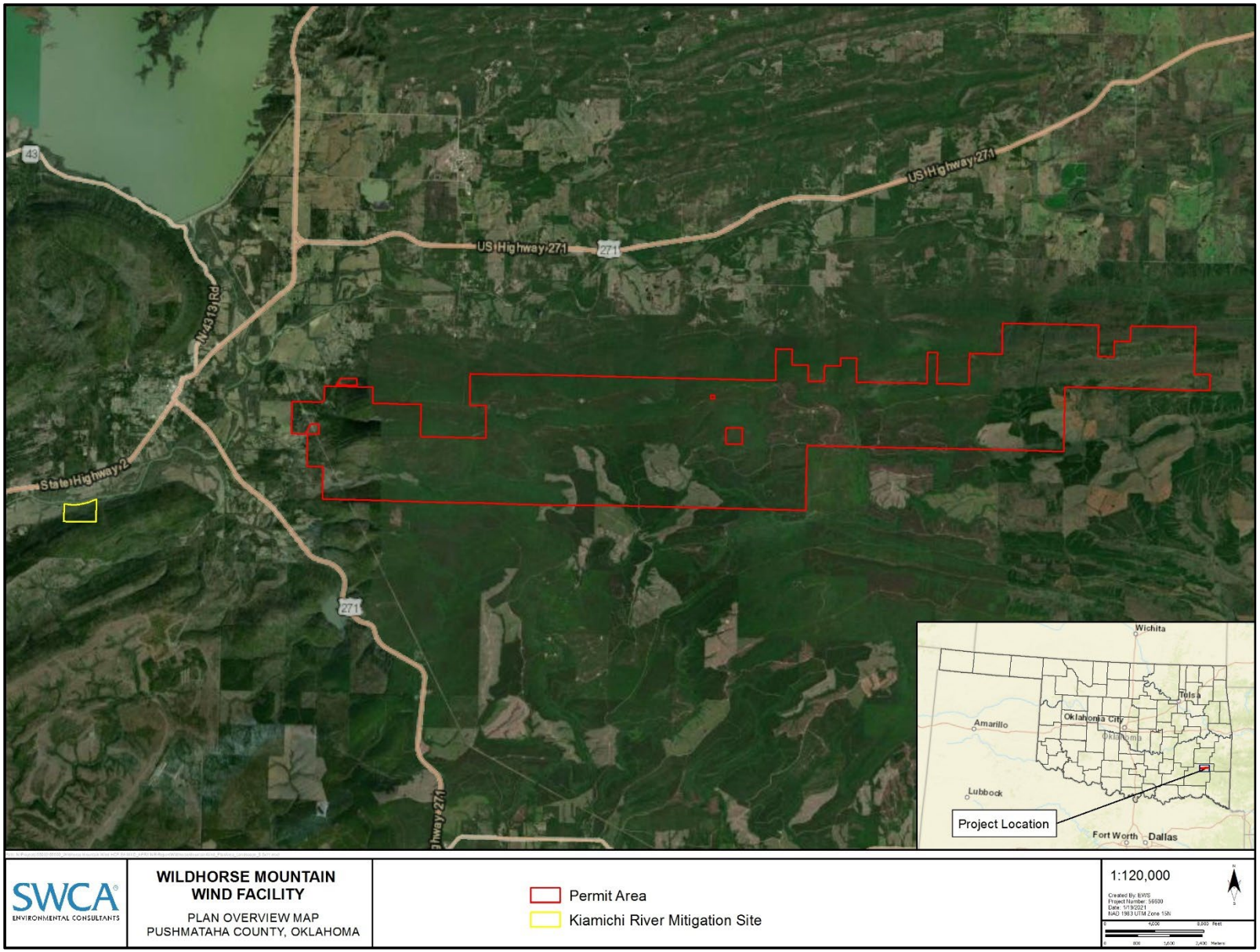

Figure 1.1. Plan Area of the Wildhorse Mountain Wind Facility Habitat Conservation Plan.

1.1 Purpose and Need and Decision to be Made

1.1.1 *Purpose and Need*

The purpose of the Federal action of issuing the Permit (Proposed Action) is to address the application for a Permit to authorize take of the federally listed Indiana bat and northern long-eared bat for the Applicant's Covered Activities in the Permit Area during operation of the Project. If the conditions under Section 10(a)(2)(B) are met, then the Service shall issue a Permit for Covered Activities associated with the proposed Project.

The Service's need for the Proposed Action is to respond to the Applicant's draft HCP (Wildhorse Wind Energy 2019a) and application for a Permit related to the Applicant's activities that have the potential to result in take of threatened and endangered species during operation of the Project, pursuant to the Endangered Species Act Section 10(a)(1)(B) and its implementing regulations and policies. Habitat Conservation Plans are planning documents required as part of an application for a Permit. They describe the anticipated effects of the proposed taking; how those impacts will be minimized or mitigated; and how the HCP is to be funded. Once the Service receives an application for a Permit, the Service must review the application to determine if it meets issuance criteria. The Applicant's need for incidental take authorization occurs when the likelihood exists that the federally listed endangered Indiana bat and federally listed threatened northern long-eared bat could be taken, as that term is defined by the Endangered Species Act, by a Covered Activity.

1.1.2 *Decision to be Made*

The Service's decision to be made is whether to issue a Permit under Section 10(a)(1)(B) of the Endangered Species Act to the Applicant for incidental take of Indiana bat and northern long-eared bat as a result of the Applicant's Project activities.

1.2 Public Involvement

The draft environmental assessment was made available for a 30-day public comment period from August 27 to September 27, 2021 (86 FR 48243). The Service received three comment letters and responded to substantive comments (Appendix A). The Service also consulted with State agencies and local Tribes throughout the NEPA process in compliance with Section 106 of the National Historic Preservation Act (NHPA) (see Section 5.1).

2 ALTERNATIVES

An environmental assessment examines the impacts of a proposed Federal action on the human and natural environment. With respect to this environmental assessment, the Service has analyzed in detail the No Action Alternative and the Proposed Action Alternative. The No Action Alternative demonstrates the consequences of not approving the HCP and not issuing a subsequent Permit. The Proposed Action Alternative is approval of the HCP and subsequent issuance of a Permit to authorize incidental take of the Covered Species (Indiana bat and northern long-eared bat) that may result from implementation of the Covered Activities, as defined in Section 2.2.3.

2.1 Proposed Action Alternative: Issuance of an Incidental Take Permit

Under the Proposed Action Alternative, the Service would approve the HCP and issue a 30-year Permit to the Applicant for incidental take of the Indiana bat and northern long-eared bat for Covered Activities in the Permit Area. As discussed in Sections 5.2.5 and 5.3.5 of the HCP, the Permit would authorize the take of 0.26 Indiana bats per year and 1.6 northern long-eared bats per year, or eight Indiana bats and 48 northern long-eared bats over the 30-year Permit (Wildhorse Wind Energy 2019a). The Applicant would implement the HCP, the components of which are discussed in this section. This action is the Service's preferred alternative.

2.1.1 *Plan Area*

The Plan Area is the geographic area where all activities covered by the HCP would occur (see Figure 1.1). The Plan Area for the HCP includes the Permit Area (defined below), as well as all areas influenced by the HCP's biological goals and objectives, including areas where the mitigation, monitoring, and adaptive management measures associated with this HCP would occur. Lands involved in the Mitigation Site, which do not overlap with the Permit Area lands, are included. Therefore, the boundary of the Plan Area is defined as the Permit Area plus the Mitigation Site (see Section 2.1.6) (Wildhorse Wind Energy 2019a).

2.1.2 *Permit Area*

The Permit Area is a subsection of the Plan Area and consists of all areas where incidental take of the Covered Species is requested to be authorized by the Permit (Figure 2.1); therefore, the Permit Area includes all lands leased for the Project on which the 29 turbines are located. Additionally, the Permit Area includes all Project components (i.e., underground electrical collection system, overhead generation-tie line, substation, operations and maintenance facilities, and access roads that are located within the Permit Area). The total Permit Area is 13,641.6 acres (5,520.6 hectares) and includes parcels owned by 18 landowners (Wildhorse Wind Energy 2019a).

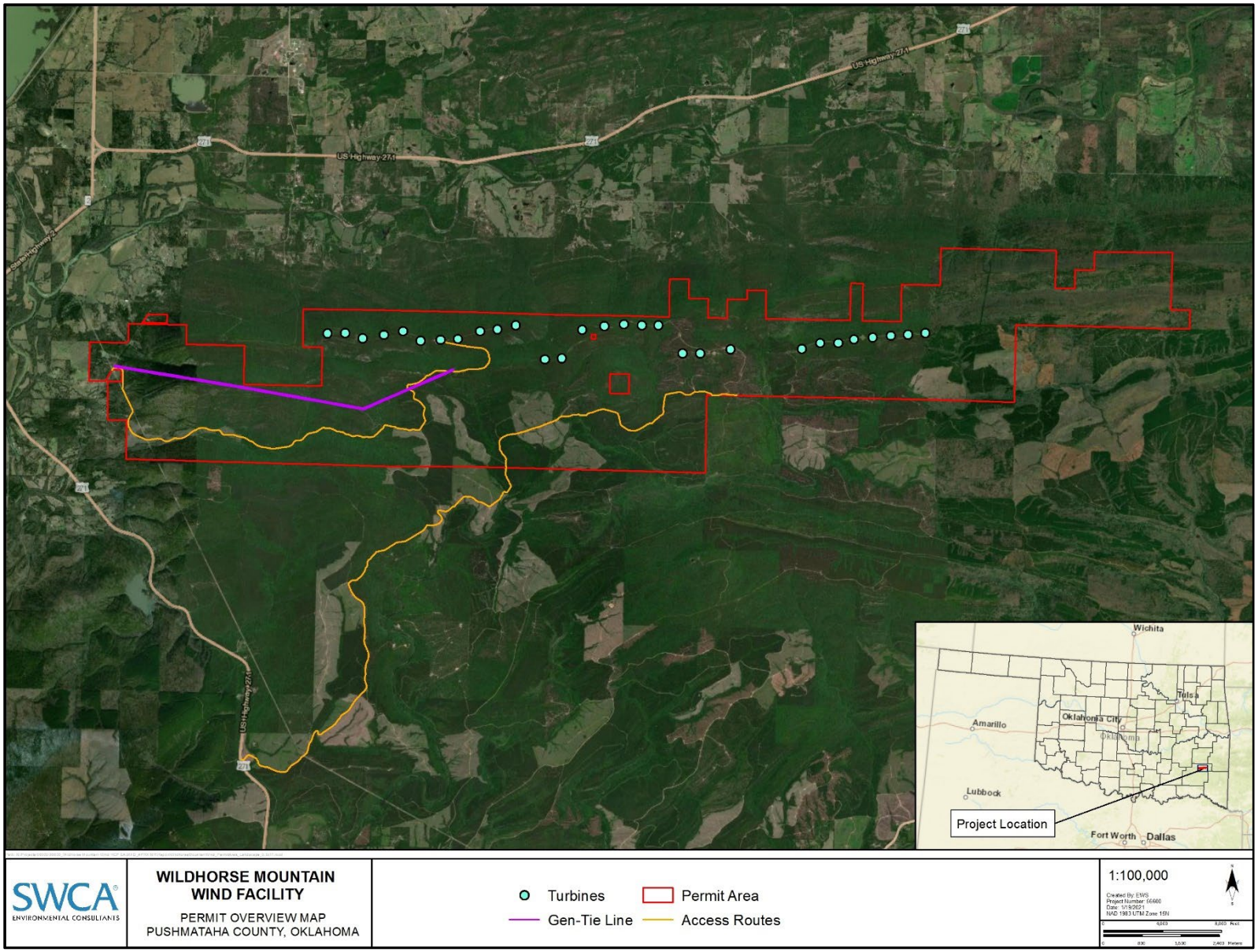

Figure 2.1. Permit Area of the Wildhorse Mountain Wind Facility Habitat Conservation Plan.

2.1.3 *Covered Activities*

Commercial operation of the Project commenced on December 26, 2019, and is projected to continue for a minimum of 25 years. Collisions with spinning rotor blades are known to cause injury to and mortality of bats and birds (Horn et al. 2008; National Renewable Energy Laboratory 2013), including the Covered Species as defined in Section 2.1.4. Incidental take of the Covered Species would likely occur from operation of Project turbines; therefore, operation of all the turbines is a Covered Activity under the HCP (Wildhorse Wind Energy 2019a).

The Project includes operation and maintenance of a renewable energy generation facility that consists of 29 wind turbines on gravel pads and associated facilities. The turbine towers are approximately 105 meters (344 feet) in height, and the rotor blade length is 136 meters (413 feet). The maximum height of the turbines from tower base to highest blade tip is 173 meters (568 feet) above ground level (Figure 2.2). The manufacturer's cut-in speed for Project turbines is 3.0 meters per second (9.8 feet per second). However, the Project cut-in speed is currently operating at 6.9 meters per second (22.6 feet per second) from sunset to sunrise until the Permit is received, consistent with Service guidance on avoidance of impacts to northern long-eared bats. The total generating capacity of the wind farm is approximately 100 megawatts.

The Project is operated locally from the control room in an operations and maintenance building on site and remotely from a remote operations center. Each turbine has a supervisory control and data acquisition operations and communications system that provides automated independent and remote operation of the turbines. Six to eight on-site personnel provide all operations and maintenance support.

Auxiliary facilities associated with the Project include access roads (24 miles), energy collection lines, communication lines, a meteorological tower (105-meter [344-foot] height), substation (1.5 acres), and an operations and maintenance facility (2.1 acres). Electrical power generated by the wind turbines is transformed and collected through a network of collection circuits that are buried underground. An overhead generation-tie line (7 miles) connects the Project substation to the existing transmission grid. The operations and maintenance facility has exterior lighting, and lighting is installed on the nacelles of all 29 wind turbines as required by the Federal Aviation Administration.

During operations, a preventative maintenance and inspection schedule is being employed, including periodic mowing, targeted herbicide spot treatment, building inspection and repairs, grading of roads to restore or repair road surface and drainage, and a monthly security inspection and removal of hazards (e.g., downed trees or encroaching branches), as needed.

The operational life of the Project is projected to be a minimum of 30 years. At the end of the 25-year power purchase agreement, the Applicant will assess the viability of continuing to operate the existing turbines, installing new or refurbished turbines, or decommissioning the Project. If the Project is decommissioned, the turbines, infrastructure, and facilities will be removed, recycled, or disposed of at a licensed waste management facility. To avoid the potential for collision of Covered Species with spinning turbines during decommissioning, the turbines will be locked so the blades do not spin. All decommissioning activities will occur during daylight hours as a measure of reducing potential incidental take of Covered Species.

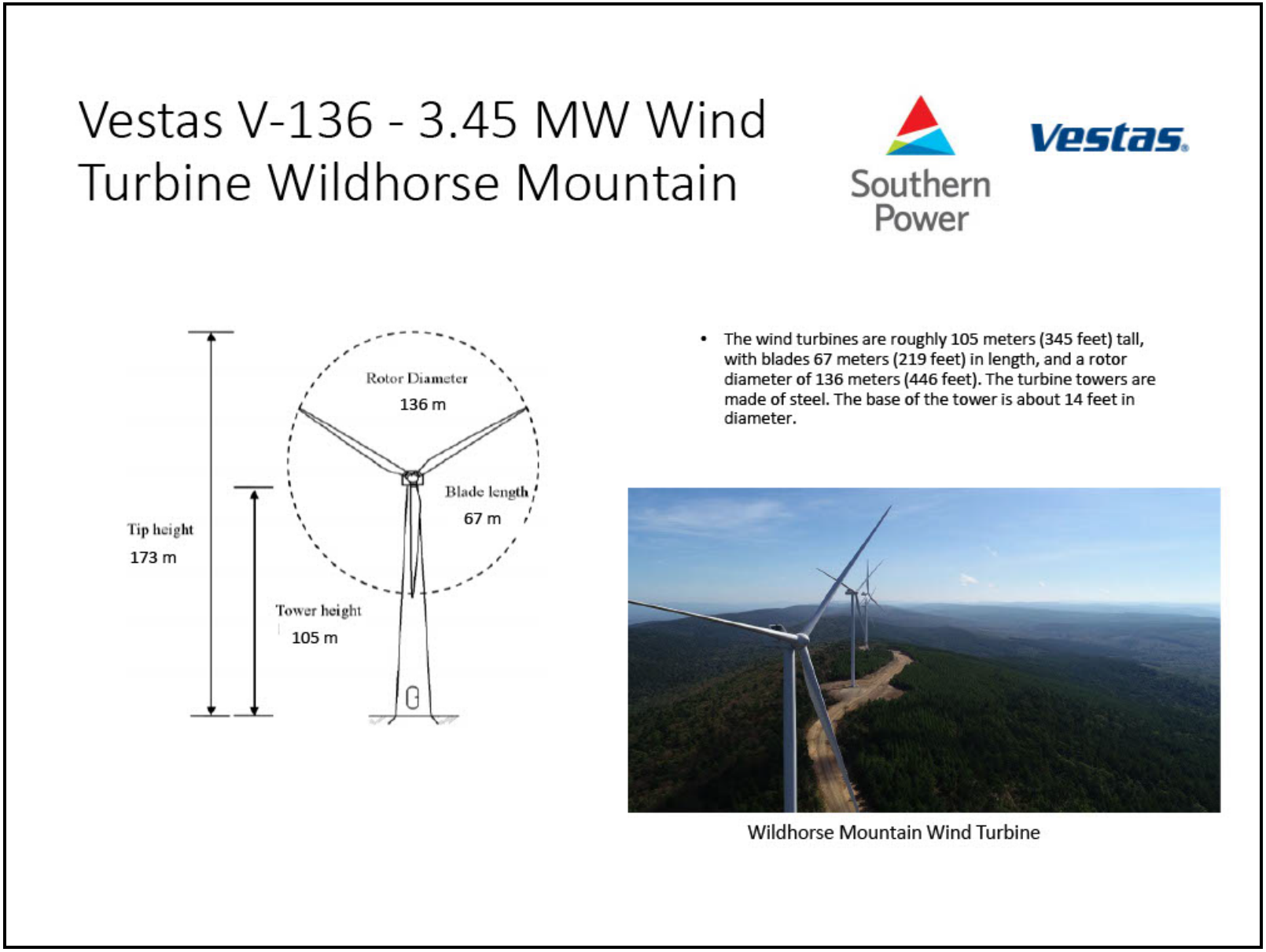

Figure 2.2. Typical Wind Turbine at the Wildhorse Mountain Wind Facility.

2.1.4 *Covered Species*

Incidental take coverage would be provided for the Indiana bat and northern long-eared bat for the Covered Activities. The Indiana bat is listed as endangered under the Endangered Species Act (U.S. Fish and Wildlife Service 2018a). Although the northern long-eared bat is currently listed as threatened under the Endangered Species Act (U.S. Fish and Wildlife Service 2015), the final 4(d) Rule for the species (*Federal Register* 81:1900; U.S. Fish and Wildlife Service 2016) exempts take prohibitions under section 9 for impacts to the northern long-eared bat when take results from most otherwise lawful activities, including the operation of wind turbines. The northern long-eared bat is included in the HCP (Wildhorse Wind Energy 2019a) as a Covered Species so that the species is addressed in the event that the 4(d) Rule is reversed or the species is reclassified to endangered (in which case the 4(d) Rule would no longer apply) during the term of the Permit.

2.1.5 *Conservation Measures*

As detailed in Section 4 of the HCP, the Applicant would implement a conservation program that focuses on avoiding and minimizing potential impacts to the Covered Species and compensating for any impacts to the Covered Species through the protection and enhancement of high-quality bat habitat in Oklahoma. Monitoring would be used to verify the effectiveness of these measures in meeting the biological goals and objectives as outlined in the HCP, provide information necessary to assess Permit compliance, and determine if adaptive management actions may be needed to maintain compliance. Adaptive management is a method to address uncertainty in natural resources management. Broadly defined, it means to examine strategies for meeting biological goals and objectives, and then, if necessary, adjusting future conservation management actions according to what is learned. Adaptive management would be used to ensure that the Project's conservation program is effective in meeting the goals and objectives of the HCP and that the take of Covered Species from the Project does not exceed the permitted level of take. The Applicant would provide the Service with an annual compliance and effectiveness monitoring report by February 15 each year the Permit is valid. The Applicant and Service would coordinate (either in-person or via webinar or conference call) to review and discuss the compliance monitoring results from the previous year. Additionally, the Applicant would evaluate which adaptive management triggers have been met (per the adaptive management strategies in the HCP) and notify the Service prior to implementing an adaptive management response (Wildhorse Wind Energy 2019a).

2.1.5.1 MINIMIZATION MEASURES DURING PROJECT OPERATIONS

In accordance with the HCP, the Applicant is keeping lighting at turbines, the operations and maintenance building, and the substation to the minimum necessary to safely and securely operate its facilities, consistent with facility security requirements. Operations and maintenance personnel will be directed through annual environmental training to extinguish nighttime exterior lights at the operations and maintenance building and substation (consistent with facility security requirements) when not in use. The annual environmental training will also discuss the importance of minimizing nighttime light use. Exterior lights are being hooded downward-directed lights to minimize horizontal and skyward illumination, and, whenever possible and consistent with physical security requirements, lights with motion or heat sensors and switches will be used to keep lights off when not required. These measures reduce potential attraction of bats and their insect prey to the Project's facilities. Aviation hazard lighting for the Project has

been minimized to that which is required by the Federal Aviation Administration (Wildhorse Wind Energy 2019a).

Under normal operation, turbine blades usually remain pitched so that the turbine does not spin below "cut-in speed," the wind speed at which the turbines begin to generate electricity. The manufacturer's cut-in speed for Project turbines is 3.0 meters per second (9.8 feet per second). Turbine curtailment refers to increasing cut-in speed and feathering turbines so they spin very slowly, or not at all, below this increased cut-in speed. Several operational adjustment experiments and comparisons have documented significant reductions in bat mortality by reducing or eliminating the rotation of turbine blades below the cut-in speed. This includes turning turbine blades parallel to the prevailing wind direction to reduce rotation of the turbine rotors to less than two revolutions per minute at predefined wind speeds (feathering) or increasing the cut-in speed. Bat mortality in the eastern and midwestern United States is inversely related to wind speed (Arnett et al. 2008). Raising the cut-in speed and feathering turbine blades below cut-in speed at night, during periods of low wind, and in the late summer through early fall during bat migration, can substantially reduce bat mortality (Arnett et al. 2010).

In Oklahoma, the observed Indiana bat active season is from April 1 to November 15 (Fuller 2019); therefore minimization measures would be implemented from April 1 to October 31 to cover the majority of the bat active season and would be increased to more intensive measures during important conservation periods for the Covered Species (May 15 to July 31 and August 1 to October 31) at all turbines, except for Turbines 20 and 21 during the power performance testing in year 1. Turbine blades would be feathered when wind speed, as monitored at individual turbines, is below the cut-in speed during the course of the night. Turbines will be released to run normally when the wind speed rises above the cut-in wind speed. The Project cut-in speed is currently operating at 6.9 meters per second from sunset to sunrise until the Permit is received (Wildhorse Wind Energy 2019a).

As described in the HCP, the Applicant would implement additional minimization measures from May 15 to July 31 each year, as this period overlaps with the Covered Species' maternity season (Table 2-1). Take during this period is more likely to affect reproductive females from maternity colonies in or near the Permit Area. Additionally, the Applicant would implement additional minimization measures from August 1 to October 31 each year, as this period constitutes the end of the Covered Species' maternity season and their fall migration season, when the Covered Species and bats in general experience the highest mortality at wind energy facilities. To substantially reduce potential impacts during these important conservation periods for the Covered Species, the additional minimization measures to be implemented include the following. Turbines would be feathered below a raised nighttime cut-in speed of 4.0 meters per second (13.1 feet per second) from May 15 to July 31 each year. Turbines also would be feathered below a further raised nighttime cut-in speed of 5.0 meters per second (16.4 feet per second) from August 1 to October 31 each year, except for Turbines 20 and 21 during the power performance testing in year 1 (Wildhorse Wind Energy 2019a). Existing information on the effectiveness of operational adjustments at reducing bat mortality indicates that the additional minimization measures proposed for the Project could reduce take of the Covered Species during the periods of implementation up to 50% (Arnett et al. 2010; Martin et al. 2017).

Table 2-1. Operational Minimization Strategy for the Wildhorse Mountain Wind Facility Habitat Conservation Plan

Dates	Time of Day	Cut-in Speed	Feathering Below Cut-in*?	Temperature Threshold†
April 1 – May 14	Sunset to sunrise	3.0 m/s (9.8 ft/s)	Yes	None
May 15 – July 31	Sunset to sunrise	4.0 m/s (13.1 ft/s)	Yes	10°C (50°F)
August 1 – October 31	Sunset to sunrise	5.0 m/s (16.4 ft/s)	Yes	10°C (50°F)
November 1 – March 31	Sunset to sunrise	3.0 m/s (9.8 ft/s)	No	None

Note: ft/s = feet per second; m/s = meters per second

* Feathering means that turbine blades will be pitched into the wind such that they spin at less than one rotation per minute.

† Turbines will be feathered below cut-in when temperatures are above the threshold.

2.1.5.2 COMPLIANCE MONITORING

As described in the HCP, the Applicant would conduct compliance monitoring at the Project to ensure compliance with the Permit and to support management for the Covered Species and bats in general. The compliance monitoring program is designed based on available information, Service guidance, and the Permit compliance requirements. The compliance monitoring plan takes a two-tiered approach: 1) mortality monitoring at the Project for the first 3 years, then 2) annual participation in the North American Bat Monitoring Program **OR** interval mortality monitoring at the Project every seventh year for the remainder of the Permit term. The second-tier monitoring approach would be determined based on the results of the first-tier mortality monitoring. The Applicant has designed this monitoring approach to use an initial 3-year monitoring event to collect robust, useful data that provide confidence in the take estimates throughout the Permit term. The ongoing interval scale then accounts for the gradual pace at which the Covered Species populations, given the species' life histories, would reasonably be expected to experience any population increase that could cause take estimates at the Project to increase. The process for this determination is set forth in the adaptive management protocol in Section 4.5 of the HCP (Wildhorse Wind Energy 2019a).

In the first three years, mortality monitoring would include searching the roads and pads of every turbine daily during the mortality monitoring period. The ability of searchers to find bat carcasses off the road and pad areas in anything but mowed grass fields is typically extremely low and woody vegetation would be allowed to regenerate in the non-gravel areas that were cleared for construction at each turbine site. The Applicant would conduct mortality monitoring for the purpose of achieving an evaluation of take of the Covered Species at the Project under the HCP for the first three years. Road and pad searches would be conducted at all 29 Project turbines daily from April 1 through October 31. Searches would cover the gravel pad around each turbine and the roads up to 100 meters (328 feet) from each turbine. Searcher efficiency trials would also be conducted in the same areas as carcass searches and used to correct for detection bias in mortality monitoring results. Pursuant to the HCP, based on the first 3 years of mortality monitoring data and the adaptive management protocol specific to the first 3 years of mortality monitoring, the Applicant would implement one of the two approaches described above for compliance monitoring for years 4 through 30 of the Permit (Wildhorse Wind Energy 2019a).

The North American Bat Monitoring Program (the Program) is a continent-wide effort led by the U.S. Geological Survey to monitor bat activity at local and landscape scales to inform effective conservation decision-making and assist in tracking the long-term viability of bat populations (Loeb et al. 2015). One method for participating in the Program is to gather data by conducting mobile (i.e., driving transects) acoustic surveys. If participation in the Program is triggered by the HCP's adaptive management protocol, the Applicant would conduct annual mobile surveys in coordination with the Service according to protocol guidelines as defined in the Program guidance (Loeb et al. 2015). Monitoring would begin during the first summer following the initial 3 years of post-construction mortality monitoring and would be repeated annually for remainder of the Permit term. Participation in the Program would allow the Applicant to contribute valuable data for an area within the Covered Species' ranges that is currently unrepresented in the Program, and thus provide information that could be key to supporting bat conservation in eastern Oklahoma. Data collected by the Applicant would support coordinated efforts to monitor bat populations and contribute to the body of knowledge used to draw inferences about local, regional and range-wide population abundances and changes in species distributions (Loeb et al. 2015). For participation in the Program, the projected estimated take of northern long-eared bat over the Permit term must be significantly lower than the authorized take on the Permit, and no Indiana bat carcasses can be found during years 1 through 3 of mortality monitoring. If the projected estimated take of northern long-eared bat over the Permit term is equivalent to the authorized take on the Permit or one Indiana bat carcass is found during years 1 through 3 of mortality monitoring, continued mortality monitoring over the Permit term may be necessary to ensure Permit compliance; thus, the Applicant would conduct mortality monitoring on a 7-year interval at all 29 Project turbines daily from April 1 through October 31 for the remainder of the Permit term. If the projected estimated take of northern long-eared bat is significantly higher than the authorized take on the Permit or two or more Indiana bats have been found during years 1 through 3 of mortality monitoring, the Applicant would adjust the minimization measures to reduce take to a level that is sustainable for Permit compliance over the Permit term and conduct mortality monitoring in year 4 of the Permit to assess the action's effectiveness at reducing Covered Species mortality. The Applicant would then conduct mortality monitoring on a 7-year interval for the remainder of the Permit term (Wildhorse Wind Energy 2019a).

Beginning in year 4, if the Applicant conducts mortality monitoring on a 7-year interval, the results of this monitoring will be used to determine whether and when adjustments to the minimization measures may be necessary to maintain compliance with the Permit. The decision to adjust minimization measures would be species-specific and based on re-evaluation of the northern long-eared bat take estimate after each monitoring event (conducted every 7 years) and the total number of Indiana bat carcasses collected during each monitoring event. If the projected estimated take of northern long-eared bat over years 4 through 30 is equivalent to or lower than the authorized take on the Permit and no more than one Indiana bat was found during a monitoring event, then no adjustment of the minimization measures would be required and the Applicant would continue to conduct interval mortality monitoring every 7 years. If the projected estimated take of northern long-eared bat is significantly higher than the authorized take on the Permit or two or more Indiana bat carcasses are found during a monitoring event, the Applicant would adjust the minimization measures to reduce take to a level that is sustainable for Permit compliance over the Permit term and conduct mortality monitoring in the year immediately following the adjustment to assess the action's effectiveness at reducing Covered Species mortality, subject to

the adaptive management framework to adjust the minimization measures. If adaptive management is triggered, the response will be repeated. If adaptive management is not triggered, the interval mortality monitoring schedule will resume such that the next mortality monitoring event is conducted 7 years after the previous mortality monitoring event. The Applicant will coordinate with the Service on the proposed minimization measure adjustments, and the proposed approach will be based on the data gathered during monitoring (Wildhorse Wind Energy 2019a).

In addition to the adaptive management triggers (as outlined in Table 4.3 of the HCP) designed to adjust the minimization measures if and when necessary such that Permit compliance is maintained, the Applicant would evaluate whether the Permit take limit has been met after each monitoring event. It is unlikely that the Permit take limit would be met before the adaptive management triggers indicate that the minimization measures require adjustment, but compliance with the Permit take limit nevertheless warrants evaluation after each monitoring event. If the cumulative northern long-eared bat take estimate is significantly higher than the permitted level of take (48 northern long-eared bats) or the cumulative count of Indiana bat carcasses is higher than the permitted level of take (two or more carcasses found during years 1 through 3 of mortality monitoring), then the Applicant would implement measures recommended by the Service to avoid further take of the Covered Species and consider whether to seek a Permit amendment (Wildhorse Wind Energy 2019a).

2.1.6 *Mitigation*

As described above, the Applicant will implement measures that are expected to reduce take of the Covered Species, particularly during important conservation periods, and thereby minimize the impact of take on the Covered Species populations. However, some incidental take of the Covered Species is still expected to occur. To provide conservation benefits to the Covered Species that are at least equal to the minimized impact of take, the Applicant has collaborated with the Service and Magnolia Land Partners, LLC (Magnolia), to design a bat habitat mitigation plan (found at Appendix E of the HCP) that provides protection of high-quality habitat for the Covered Species. The Mitigation Site, located approximately 3.2 miles west of the Permit Area, provides 90 acres of contiguous forested habitat. The Mitigation Site is located immediately adjacent to the Kiamichi River to the north, private forested land to the east, and private forested and agricultural land to the west (see Figure 1.1) (Wildhorse Wind Energy 2019a). The summer presence of both Covered Species has been confirmed by acoustic surveys conducted at the Mitigation Site (Martin 2019).

The Service's Region 3 Office developed a "resource equivalency analysis" model (Szymanski et al. 2013) for comparing resources lost through wind energy activities with resources gained through compensatory mitigation. The model is composed of two parts: 1) a species-specific demographic model that reflects the best scientific understanding of bat species biology and 2) a resource equivalency model to calculate the amount of mitigation needed to offset the projected loss of female bats. The demographic model, which is predefined for the user, is used to calculate losses in reproductive potential from Project impacts. The 90 acres of high-quality habitat within the Mitigation Site would offset the effects of expected take of the Covered Species, including lost reproductive capacity, based on the Service's resource equivalency analysis model, which determined that protection of only 27 acres of suitable summer habitat is necessary to offset the anticipated impacts of Indiana bat take and 84 acres of summer habitat

protection required to offset the impacts of northern long-eared bat take (Wildhorse Wind Energy 2019a). Because suitable habitat for and occurrence of the two Covered Species overlap at the Mitigation Site (Martin 2019), the 90-acre parcel exceeds the mitigation requirements for both Covered Species.

The mitigation component found in section 4.3 of the HCP will be implemented up front and is designed to offset the impact of the take predicted to occur over the 30-year Permit term. A draft Bat Habitat Conservation Plan (Magnolia 2019) has been developed for the Mitigation Site that includes but is not limited to background information on the habitat, a threats analysis, the mitigation project's objectives, the action and implementation strategy for the project, a description of the project monitoring, an adaptive management strategy, and the reporting process. The Bat Habitat Conservation Plan describes the entity responsible for periodic evaluation of the mitigation project, the frequency of the periodic evaluation, and adaptive management actions to be taken, when appropriate.

Magnolia will conduct mitigation effectiveness monitoring and examine the mitigation project to evaluate its performance relative to the criteria established in the Project's HCP (Wildhorse Wind Energy 2019a) and to recommend Project-specific adaptive management measures as needed. Monitoring will be conducted to ensure that the habitat conditions are maintained and that protections are adequate. The monitoring will be conducted on an annual basis and will include an assessment of the functionality of the habitat protection measures, the need for any maintenance measures, and an assessment of threat abatement because of the Project.

2.2 No Action Alternative

Under the No Action Alternative, the Service would not issue the Permit. The No Action Alternative would be implemented if the Service denies issuance of a Permit or if the Applicant chooses to abandon the Project. The Applicant would operate the Project without a Permit and would not be in compliance with the Endangered Species Act if implementation of Covered Activities results in take of the Indiana bat. Therefore, any take of the Indiana bat that would occur from the Project without a Permit would place the Applicant in violation of the Endangered Species Act. Although the northern long-eared bat is currently listed as threatened under the Endangered Species Act (U.S. Fish and Wildlife Service 2015), the final 4(d) Rule[2] for the species (*Federal Register* 81:1900; U.S. Fish and Wildlife Service 2016) exempts section 9 take prohibitions for the incidental take of northern long-eared bat resulting from most otherwise lawful activities, including the operation of wind turbines. The northern long-eared bat is included in the HCP as a Covered Species so that the species is addressed in the event the 4(d) Rule is reversed or the species is reclassified to endangered (in which case the 4(d) rule would no longer apply) during the term of the Permit (Wildhorse Wind Energy 2019a). Therefore, the Applicant would be in compliance with the Endangered Species Act regardless of whether the 4(d) rule is in effect or not.

[2] The final 4(d) rule published January 14, 2016 (*Federal Register* 81:1900), exempts all incidental take of northern long-eared bats caused by otherwise lawful activities from take prohibition under Section 9 of the ESA, except: take of northern long-eared bats in their hibernacula in areas affected by white-nose syndrome; take resulting from tree removal within 0.4 kilometer (0.25 mile) of a known northern long-eared bat hibernaculum; and take resulting from removal of a known northern long-eared bat maternity roost tree or tree removal within a 45-meter (150-foot) radius of a known northern long-eared bat maternity roost tree during the pup season (June 1 through July 31). Incidental take resulting from hazard tree removal for protection of human life and property is exempt from the take prohibition regardless of where and when it occurs.

2.3 Alternatives Eliminated from Detailed Analysis

The National Environmental Policy Act requires that Federal agencies thoroughly consider and objectively evaluate all reasonable alternatives and briefly explain the basis for eliminating those that were not retained for detailed analysis (40 C.F.R. § 1502.14). Early discourse between the Service and the Applicant on potential minimization and mitigation measures resulted in an initial list of potential alternatives for achieving the purpose and need of the Project. Some of these alternatives were later determined to not meet the purpose and need of either the Service or Applicant and were eventually dismissed from detailed analysis for reasons summarized below.

2.3.1 *No Curtailment*

The Applicant evaluated an alternative that would involve no curtailment of turbine operations. Under this alternative, the Project would have an increase in the amount of power generated by the facility; however, the increase in operating hours when wind speeds are lower and the Covered Species are more active would increase the amount of take. This alternative would result in a predicted annual take of 0.51 Indiana bat and 3.2 northern long-eared bats for the 30-year Permit term. Based on this alternative, there would be no lost energy production from curtailment; therefore, the Project would meet the purpose and need to generate sufficient renewable energy for the region and provide economic opportunities to the local community. While the No Curtailment alternative meets the advancement of the national renewable energy policy objectives and improves the local economic opportunities, this alternative does not meet the HCP conservation program's biological objective in minimizing take of the Covered Species. This alternative was not considered further since this alternative does not meet all of the Project's objectives.

2.3.2 *Take Avoidance*

Under the Take Avoidance alternative, the Applicant evaluated the option to not seek or obtain a Permit for the Project. Under this alternative, the Applicant would curtail its turbines in a manner that would reduce the risk of take of the Covered Species such that potential take of Covered Species would be unlikely to occur. To reduce risk of take, the Project turbines would be fully feathered at wind speeds below 6.9 meters per second (22.6 feet per second) from sunset to sunrise during the Covered Species' active season (April 1 through November 15).
By implementing these turbine operational adjustments, there would be a reasonable expectation that take of Indiana bat and northern long-eared bat would be avoided or unlikely to occur. Based on take modeling, achieving a "take is unlikely to occur" or "avoidance" threshold for the Covered Species would require curtailment of the Project turbines to a degree that the Project would not be able to meet its power production obligations. The lost energy production from curtailing the turbines under this alternative would render the Project financially unviable and would not meet the purpose and need to generate ample clean and renewable energy. Moreover, the local economic opportunities associated with the Project would be foregone. Since the environmental benefits of meeting the region's renewable energy needs and the economic opportunities of supporting the local community would be renounced if the Project is deemed economically unfeasible, the Take Avoidance alternative was not considered further.

3 AFFECTED ENVIRONMENT

Analysis in this environmental assessment is focused on the anticipated impacts of implementation of the HCP (Wildhorse Wind Energy 2019a) on the Covered Species through issuance of a Permit. The affected environment is the area and its resources (i.e., physical, biological, and/or socioeconomic) potentially impacted by the Proposed Action and alternatives. The purpose of describing the affected environment is to define the context in which the impacts would occur. To make an informed decision about what actions to implement, it is necessary to first identify those resources potentially affected and the extent of the potential impacts. In describing those resources, we considered the potential impacts associated with implementation of the HCP.

Implementation of the HCP (Wildhorse Wind Energy 2019a) would result in impacts from Project operations during the 30-year Permit period. Therefore, the assessment focuses predominantly on those resources affected by Project operation (Covered Activities) under the HCP. Cumulative effects are also addressed. The assessment does not include detailed analyses of resources not affected by the Covered Activities under the HCP.

Based on guidelines from the Council on Environmental Quality (Council), resources that would be unaffected by the Proposed Action or alternatives and resources that would experience beneficial effects were excluded from the analysis. Chapter 2 of this environmental assessment and the HCP (Wildhorse Wind Energy 2019a) describe the Covered Activities associated with issuing a 30-year Permit for Indiana bat and northern long-eared bat and provide the basis for the determination of resources that could be affected. Table 3-1 provides a list of the resources potentially affected by the Proposed Action and those resources that were eliminated from further consideration. Those resources identified in Table 3-1 as present and potentially affected are discussed in more detail below.

Table 3-1. Resources and Rationale for Elimination or Detailed Analysis

Resource	Not Present	Present, Not Impacted	Present, May be Impacted	Rationale
Air Quality		X		Implementation of the HCP is not expected to affect air quality because operation of the Project under the Proposed Action would generate the same emissions as experienced under the No Action Alternative.
Cultural Resources			X	Continued operation of the Project under the Proposed Action would not result in any additional surface disturbance; however, consultation to determine the potential for impacts on cultural resources in the vicinity of the Plan Area was conducted. See Sections 3.1 and 4.1.1.
Geology/Soils		X		Implementation of the HCP would not result in disturbance of geology and soils and accordingly, geology and soils would not be impacted by continued operation of the Project under the Proposed Action.
Hazardous Materials/Waste		X		Limited quantities of hazardous materials would be associated with the maintenance equipment used during implementation of the HCP. Their use would be temporary and controlled by required management plans and tracking documents. Therefore, no substantial impacts are expected.

Resource	Not Present	Present, Not Impacted	Present, May be Impacted	Rationale
Land Use		X		Implementation of the HCP is not expected to affect land use because operation of the Project under the Proposed Action would result in the same land use as experienced under the No Action Alternative.
Noise		X		Implementation of the HCP is not expected to result in an increase in noise in the Plan Area because Project operations under the Proposed Action would generate the same noise levels and durations as experienced under the No Action Alternative.
Prime Farmlands		X		A small area of prime farmland is present in the southern portion of the Permit Area and is not currently affected by Project operations. Continued operation of the Project under the Proposed Action would not result in any disturbance to prime farmlands and accordingly, prime farmlands would not be impacted.
Recreation		X		Publicly accessible off-highway-vehicle trails are present within the Permit Area. Implementation of the HCP is not expected to result in a change to recreation in the Plan Area because trail access under the Proposed Action would be the same as the No Action Alternative.
Socioeconomics/ Environmental Justice			X	Implementation of the HCP is anticipated to result in a cost to the Applicant from mortality monitoring and from acquiring and maintaining the Mitigation Site and may also reduce energy production and impact revenue generation. No impacts to environmental justice communities are anticipated. See Sections 3.2 and 4.1.2.
Vegetation			X	Vegetation would not be disturbed/removed during implementation of the HCP. Woody vegetation would be allowed to regenerate at each turbine site, and therefore no additional adverse impacts to wildlife habitat are anticipated under the Proposed Action. See Sections 3.3 and 4.1.3.
Visual Resources		X		Implementation of the HCP is not expected to result in impacts to visual resources because Project operations under the Proposed Action would have the same effects on visual resources as experienced under the No Action Alternative.
Water Resources		X		Implementation of the HCP would not result in disturbance to local water bodies, and therefore continued operation of the Project under the Proposed Action is not anticipated to affect water resources.
Wetlands/ Waters of U.S.		X		Implementation of the HCP would not result in disturbance to wetlands, and therefore continued operation of the Project under the Proposed Action is not anticipated to affect wetlands or waters of the U.S.
Wildlife (including special status species)			X	Implementation of the HCP may impact locally occurring wildlife and special status species by reducing the incidence of injury/mortality from collision with turbines and protecting wildlife habitat. Mortality monitoring will inform adaptive management actions to mitigate impacts. See Sections 3.3 and 4.1.3.

3.1 Cultural Resources

Compliance with Section 106 of the NHPA, as amended, is required by law for all Federal undertakings, which includes issuance of section 10(a)(1)(B) incidental take permits for activities covered in a Habitat Conservation Plan.

A cultural resources records search for the Permit Area was completed through the Oklahoma Archeological Survey and the National Park Service National Register of Historic Places (National Register) database (Gray & Pape, Inc. 2017). The records search extended to a 1.6-kilometer (1-mile) radius around the Permit Area. The purpose of the records search was to identify prehistoric or historic archaeological sites or historic facilities (buildings and structures) previously recorded within and around the Permit Area. The records search identified no historic properties, historic markers, previously recorded archaeological sites, or National Register properties located within, immediately adjacent to the Permit Area (Gray & Pape, Inc. 2017).

In 2018, Chambers Group, Inc., conducted a cultural resources survey in compliance with Section 106 of the NHPA within the Permit Area to identify archaeological and historic sites that may be affected by proposed surface disturbance, including turbine pads, substation, transmission line, underground electric collection lines, and access roads. The survey covered a total of 1,374 acres. No historical or archaeological resources were identified. Surveys indicated that the area in and around the Project location appears to have been largely undeveloped, with the exception of pine logging activities. The Permit Area crosses and runs parallel to the K-Trail and the Clayton Trail, which are popular off-highway-vehicle trails used for recreation and logging access. Other than these road and logging disturbances, the surrounding areas have remained undeveloped (Chambers Group, Inc., 2018).

While records searches and cultural resources surveys did not identify historical or archaeological resources within the Permit Area, consultation with the Choctaw Nation, the Oklahoma State Historic Preservation Office, and the Oklahoma Archeological Survey was initiated to solicit input on the potential for effects of the Proposed Action on cultural resources. These agencies did not identify any additional archaeological or cultural resources within the Permit Area. See Section 5.1.2 for further information on Tribal consultation.

3.2 Socioeconomics/Environmental Justice

Land ownership provides important context for understanding the potential socioeconomic impacts of land management. Pushmataha County is comprised of approximately 86% private lands, 13% State lands, and 1% Federal lands. There are no tribal lands administered by the Bureau of Indian Affairs identified in Pushmataha County; however, Pushmataha County is within the jurisdictional boundaries of the Choctaw Nation. The Permit Area and Mitigation Site (the Plan Area) are both located on private lands in Pushmataha County. The Permit Area includes parcels owned by 18 landowners and leased by the Applicant. The 90-acre Mitigation Site, owned by Magnolia, sits adjacent to the Pushmataha Wildlife Management Area, which consists of 19,237 acres of State land managed by the Oklahoma Department of Wildlife Conservation.

In 2018, Pushmataha County had a population of 11,119 people with a median age of 44.6 and a median household income of $37,457. Between 2017 and 2018, the population of Pushmataha County declined from 11,149 to 11,132 (0.2% decrease) and its median household income grew from $35,414 to $37,457 (5.8% increase). The closest town to the Plan Area is Clayton, which is approximately 4.8 miles west of the western boundary of the Plan Area. Clayton had a population of 797 in 2017. Antlers is the County seat and had a population of 2,318 in 2017.

The socioeconomic profile of the Pushmataha County is summarized in Table 3-2 and is based on 2017 census data (Headwaters Economics 2020).

Table 3-2. Socioeconomic Profile of Pushmataha County, Oklahoma, 2017

Socioeconomic Indicator	Pushmataha County	Oklahoma	United States
Total Population	11,132	3,918,137	321,004,407
Median Age	44.6	36.4	37.8
Total Minority Population	27.9%	23.6%	38.5%
American Indian Population	13.8%	7.5%	0.8%
Median Household Income	$35,414	$51,424	$57,652
Families in Poverty	14.9%	11.6%	10.5%
Unemployment Rate (2018)	5.2%	3.4%	3.9%

Source: Headwaters Economics (2020).

Within Pushmataha County and the Plan Area, timber is, and has historically been, an economic mainstay. Lumber companies own large swaths of the county and operate vast tree plantations. During the twentieth century, a rapidly improving transportation network enabled Pushmataha County to advance economically. The largest industries in Pushmataha County are Health Care and Social Assistance (16.2%), Retail Trade (12.5% people), and Construction (10.8%).

The Council guidance on environmental justice states that minority populations are considered to be present when a) the minority population of the affected area exceeds 50% or b) the minority population percentage of the affected area is meaningfully greater that the percentage in the general population or state. The minority population in Pushmataha County is less than 50% of the total county population and approximately the same as the minority percentage in the state. However, approximately 13% of the county population is American Indian, which is greater than the approximately 7.5% statewide and 0.8% nationwide.

3.3 Wildlife

3.3.1 *Terrestrial Wildlife*

According to the Oklahoma Comprehensive Wildlife Conservation Strategy, the Plan Area is within the Ouachita Mountains/West Gulf Coastal Plain Region of Oklahoma (Oklahoma Department of Wildlife Conservation 2016). In Pushmataha County, the Ouachita mountain range is comprised of oak/pine forests and oak/pine savannahs with steep slopes and shallow soils. The Permit Area follows a ridgeline and elevations range from approximately 561 to 1,929 feet above mean sea level. Land cover within the Permit Area is predominantly evergreen (44%), deciduous (31%), and mixed forest (10%), with some areas of shrub-scrub and herbaceous cover (Pickle et al. 2015).

The Mitigation Site contains 90 acres of contiguous, mature, deciduous broadleaf forest habitat. Elevation ranges from 515 to 912 feet above mean sea level. Streams and wetlands are present within the Mitigation Site. Approximately 17.0 acres of bottomland hardwood wetland habitat

are mapped by the National Wetlands Inventory within the Mitigation Site, providing foraging habitat for wildlife including bats (Magnolia 2019).

The Oklahoma Comprehensive Wildlife Conservation Strategy provides guidance for the conservation of Oklahoma's rare and declining species and identifies Oklahoma's species of greatest conservation need, the conservation landscapes (key habitats) that they require, the conservation challenges that they face, and potential conservation actions that can be implemented to improve each species' population status. Species of greatest conservation need that occur in the Ouachita Mountains/West Gulf Coastal Plain Region include 52 bird species, 13 mammal species, 14 reptile species, and 14 amphibian species (Oklahoma Department of Wildlife Conservation 2016). However, many of these species as well as additional fish and invertebrate species are associated with aquatic habitats. Since the Covered Activities under the HCP (Wildhorse Wind Energy 2019a) would not occur in aquatic habitats, only terrestrial species known to occur in Pushmataha County are discussed in this environmental assessment. Small mammals other than bats listed for the region include Baird's pocket gopher (*Geomys breviceps*), eastern harvest mouse (*Reithrodontomys humulis*), golden mouse (*Ochrotomys nuttalli*), eastern spotted skunk (*Spilogale putorius*), swamp rabbit (*Sylvilagus aquaticus*), and Texas rice rat (*Oryzomys texensis*).

The Mitigation Site is adjacent to the Oklahoma Department of Wildlife Conservation Pushmataha Wildlife Management Area. The Permit Area is approximately 2 miles northeast of the Wildlife Management Area. Game species known to occur in the Wildlife Management Area that may also occur in the Plan Area include white-tailed deer (*Odocoileus virginianus*), elk (*Cervus canadensis*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), eastern cottontail (*Sylvilagus floridanus*), fox squirrel (*Sciurus niger*), eastern gray squirrel (*Sciurus carolinensis*), and black bear (*Ursus americanus*). Game birds include northern bobwhite (*Colinus virginianus*), scaled quail (*Callipepla squamata*), and wild turkey (*Meleagris gallopavo*) (Oklahoma Department of Wildlife Conservation 2016). Non-game bird species are addressed below in Section 3.3.2.

3.3.2 *Migratory Birds*

Non-game bird species expected to occur in the Plan Area include songbirds, corvids (e.g., jays and crows), waterfowl, raptors, and other birds protected by the Migratory Bird Treaty Act. The Service mapped designated flyways in North America to facilitate management of migratory birds and their habitats along routes the birds follow as they migrate between nesting and wintering areas. The Plan Area is within the western portion of the Mississippi Flyway and the eastern edge of the Central Flyway (U.S. Fish and Wildlife Service 2020a). A discussion of bird species with potential to occur or known to occur in the Plan Area is described below.

In addition to coverage under the Migratory Bird Treaty Act, bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are also protected by the Bald and Golden Eagle Protection Act. The primary sources of scavenger activity within the Plan Area consists of coyotes, mesocarnivores, and occasionally black bears. Golden eagles are unlikely to occur in the Plan Area vicinityand the surrounding land use is forestry only, so there is little likelihood of golden eagles being attracted to carcasses or gut piles that result from grazing or hunting

activities, however there is a carcass removal plan for the turbine areas. Bald eagles may nest in the area, generally in larger trees near open water bodies. During pre-construction surveys, two bald eagle observations (for a total of 6 eagle-use minutes in 227 hours of surveys) were recorded within the Permit Area (Wildhorse Wind Energy 2019b). Furthermore, according to eBird (Cornell Lab of Ornithology 2020), several sightings of bald eagles have been made in the vicinity of Sardis Lake, which is approximately 3.5 miles northwest of the Permit Area and 5.0 miles north of the Mitigation Site. The bald eagle sightings at Sardis Lake in late winter and spring indicate that the species may nest there. Two occupied active bald eagle nests have been documented within 10 miles of the Plan Area: one within riparian forest habitat along the Kiamichi River near the Mitigation Site and one in forest habitat along the Rock River north of the Permit Area (Pickle et al. 2016a). However, since the Permit Area is not near water and does not contain water features, bald eagles are unlikely to use the Permit Area for nesting.

Besides eagles, other raptors that may be found in the Plan Area and vicinity include red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), merlin (*Falco columbarius*), osprey (*Pandion haliaetus*), peregrine falcon (*Falco peregrinus*), rough-legged hawk (*Buteo lagopus*), American kestrel (*Falco sparverius*), sharp-shinned hawk (*Accipiter striatus*), northern harrier (*Circus hudsonius*), red-shouldered hawk (*Buteo lineatus*), barn owl (*Tyto alba*), eastern screech owl (*Megascops asio*), great horned owl (*Bubo virginianus*), and barred owl (*Strix varia*). Most of these species would be expected to occur during migration, although some may be year-round residents. Raptor species that may nest in trees within the Plan Area include red-tailed hawk, Cooper's hawk, red-shouldered hawk, barn owl, eastern screech owl, great horned owl, and barred owl. Three red-tailed hawk nests were found during March 2016 aerial surveys; one occupied nest was found within the center of the Permit Area and two occupied nests within 1 mile to the south (Pickle et al. 2016a). Four additional unoccupied raptor nests were found in trees during March 2016 aerial surveys within the Permit Area and 1-mile buffer (Wildhorse Wind Energy 2019b).

The Service's 2008 list of Birds of Conservation Concern (U.S. Fish and Wildlife Service 2008) lists migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act. In this publication, the Plan Area occurs in the West Gulf Coastal Plain/Ouachitas Bird Conservation Region. Avian surveys have been conducted along the Pushmataha U.S. Geological Survey Breeding Bird Survey route, which is located between the Permit Area and the Mitigation Site (U.S. Geological Survey [USGS] 2020). Birds of Conservation Concern listed for this region that have been regularly observed along the Pushmataha route in surveys between 2009 and 2018 include: American kestrel (*Falco sparverius*), Chuck-will's-widow (*Antrostomus carolinensis*), red-headed woodpecker (*Melanerpes erythrocephalus*), prairie warbler (*Hylocichla mustelina*), Kentucky warbler (*Geothlypis formosa*), Bachman's sparrow (*Peucaea aestivalis*), painted bunting (*Passerina ciris*), and orchard oriole (*Icterus spurius*) (USGS 2020). In addition, eBird maps show several occurrences of cerulean warblers (*Setophaga cerulea*) east of the Permit Area within the Ouachita National Forest along the same ridgeline that the Permit Area follows (Pickle et al. 2015). These observations have mainly been recorded within the breeding season. The cerulean warbler is a Bird of Conservation Concern for the West Gulf Coastal Plain/Ouachitas Bird Conservation Region and has experienced a 3% yearly decline since 1966 (Pickle et al. 2015; Sauer et al. 2011).

There are no National Audubon Society-designated Important Bird Areas near the Plan Area.

3.3.3 *Bats*

The Plan Area is within the range of 11 bat species: big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), evening bat (*Nycticeius humeralis*), hoary bat (*L. cinereus*), Indiana bat, little brown bat (*M. lucifugus*), Mexican free-tailed bat (*Tadarida brasiliensis*), northern long-eared bat, silver-haired bat (*Lasionycteris noctivagans*), Townsend's big-eared bat (*Corynorhinus townsendii*), and tri-colored bat (*Perimyotis subflavus*) (Table 3-3) (Wildhorse Wind Energy 2019a). Of these, no species are state-listed threatened or endangered and two species are federally listed (the Covered Species). The Indiana bat is federally listed endangered, and the northern long-eared bat is federally listed threatened with a 4(d) rule. White-nose syndrome is the primary threat to bat populations across the United States. The final 4(d) Rule for the northern long-eared bat states, "white-nose syndrome is the main threat to this species and has caused a precipitous decline in bat numbers (in many cases, 90–100 percent) where the disease has occurred. Declines in the numbers of northern long-eared bats are expected to continue as white-nose syndrome extends across the species' range" (*Federal Register* 81:1900). While the causes of the pre-white-nose syndrome distribution changes are unknown, climate change may be playing a role by adversely affecting hibernacula temperatures (U.S. Fish and Wildlife Service 2007). The Service currently is conducting a discretionary review of the little brown bat to determine if listing of the species under the Endangered Species Act is warranted. The Service was petitioned to list the tri-colored bat as endangered or threatened, and the Service issued an affirmative 90-day finding, initiating a status review to determine if listing is warranted. A discussion of bat species with potential to occur or that are known to occur in the Plan Area is described below.

Table 3-3. Listing Status and Typical Winter Habitat of Bat Species Potentially Occurring in the Plan Area

Common Name	Scientific Name	Status	Typical Winter Habitat
Big brown bat	*Eptesicus fuscus*	None	Hibernates in caves, mines, structures
Eastern red bat	*Lasiurus borealis*	None	Tree-roosting, long-distance migrant
Evening bat	*Nycticeius humeralis*	None	Probably long-distance migrant
Hoary bat	*Lasiurus cinereus*	None	Tree-roosting, long-distance migrant
Indiana bat	*Myotis sodalis*	Federally listed endangered	Hibernates in caves and mines
Little brown bat	*Myotis lucifigus*	None	Hibernates in caves and mines
Mexican free-tailed bat	*Tadarida brasiliensis*	None	Migrates south to hibernate in caves, mines, and other structures
Northern long-eared bat	*Myotis septentrionalis*	Federally listed threatened	Hibernates in caves and mines
Silver-haired bat	*Lasionycteris noctivagans*	None	Tree-roosting, long-distance migrant
Townsend's big-eared bat	*Corynorhinus townsendii*	None	Hibernates in caves and mines
Tri-colored bat	*Perimyotis subflavus*	None	Hibernates in caves and mines

Source: Bat Conservation International (2020).

Of the species listed in Table 3-3, nine are non-listed species that are not covered in the HCP (Wildhorse Wind Energy 2019a).

3.3.3.1 STATUS IN THE PERMIT AREA

As described in detail in the HCP (Wildhorse Wind Energy 2019a), the following bat studies have been completed in the Permit Area:

- acoustic surveys, June 6 to July 7, 2016 (Murray et al. 2016)
- acoustic surveys, July 21 to November 9, 2016 (Pickle et al. 2017)
- mist-net surveys, August 5 to 8, 2016 (Pickle et al. 2016b)
- mist-net surveys, May 16 to June 12, 2017 (Hyzy et al. 2017)

A total of 19,466 bat calls were recorded during the June to July 2016 acoustic survey, which were then analyzed via automated identification software (Murray et al. 2016). Approximately 88% of recorded calls were identified to species. The automated identification software provided the following non-listed species determinations by percent of total calls (results pertaining to Covered Species are discussed in Section 3.3.4.1):

- Townsend's big-eared bat, 0.0% (n = 8)
- silver-haired bat, 0.3% (n = 59)
- eastern small-footed bat (*Myotis leibii*), 0.6% (n = 122)
- Mexican free-tailed bat, 1.5% (n = 298)
- little brown bat, 2.6% (n = 514)
- big brown bat, 4.3% (n = 838)
- hoary bat, 10.6% (n = 2,054)
- tri-colored bat, 11.7% (n = 2,282)
- evening bat, 17.3% (n = 3,358)
- eastern red bat, 32.5% (n = 6,324)

During the July to November 2016 acoustic survey, bat passes were identified to frequency groups. Results indicate that 83.4% of bat passes were classified as high-frequency (e.g., eastern red bats, tri-colored bats, evening bats, and *Myotis* species) and 16.6% of bat passes were classified as low-frequency (e.g., big brown bats, hoary bats, and Mexican free-tailed bats) (Pickle et al. 2017).

The following non-listed bat species were captured during 2016 mist-net surveys (Pickle et al. 2016b):

- tri-colored bat (n = 2)
- evening bat (n = 9, including one recapture)
- eastern red bat (n = 13)

The following non-listed bat species were captured during 2017 mist-net surveys (Hyzy et al. 2017):

- hoary bat (n = 3)
- big brown bat (n = 8)
- silver-haired bat (n = 10)
- tri-colored bat (n = 15)
- evening bat (n = 32)
- eastern red bat (n = 86)

3.3.3.2 STATUS IN THE KIAMICHI RIVER MITIGATION SITE

Acoustic surveys were completed in the Mitigation Site in 2019 (Magnolia 2019). A total of 1,410 identifiable calls were recorded, including for the following non-listed species by percent of total calls (results pertaining to Covered Species are discussed in Section 3.3.4.1):

- eastern small-footed bat, 1.3% (n = 18)
- little brown bat, 2.4% (n = 34)
- big brown bat, 5% (n = 70)
- hoary bat, 8.0% (n = 113)
- silver-haired bat, 10.2% (n = 144)
- evening bat, 12.3% (n = 173)
- eastern red bat, 14.7% (n = 207)
- tri-colored bat, 43.0% (n = 607)

3.3.4 *Threatened and Endangered Species*

3.3.4.1 COVERED SPECIES

3.3.4.1.1 Indiana Bat

Section 3.2 of the HCP provides a detailed description of Indiana bat life history and habitat requirements and species status and occurrence range-wide, in the Ozark-Central Recovery Unit, in Oklahoma, and in the Plan Area (Wildhorse Wind Energy 2019a). Below is a brief summary of select information specifically relevant to this environmental assessment and the analysis herein.

Life History Summary

The federally listed endangered Indiana bat occurs over a range that extends from the eastern to the midwestern United States, including eastern Oklahoma (U.S. Fish and Wildlife Service 2019b), where the Project is located. The Indiana bat roosts and forms maternity colonies under loose bark or in hollows and cavities of mature trees in floodplain forests. The Indiana bat

utilizes a variety of habitats to forage on flying insects found along rivers, lakes, open fields, and uplands. In winter, the Indiana bat hibernates in caves primarily in Kentucky, Indiana, and Missouri (U.S. Fish and Wildlife Service 2019c).

Status in Permit Area

Two separate acoustic surveys were completed in the Permit Area in 2016 as described in Section 3.3.3.1. During the June – July 2016 survey, Indiana bat calls comprised 2.3% of the calls (n = 455) according to the automated identification software. Upon examination by a qualified biologist, none of the calls identified by the automated identification software were determined to have been made by Indiana bats (Murray et al. 2016).

During the July – November 2016 survey, bat passes were identified to frequency groups. Results indicate that 83.4% of bat passes were classified as high-frequency (e.g., eastern red bats, tri-colored bats, evening bats, and *Myotis* species) and 16.6% of bat passes were classified as low-frequency (e.g., big brown bats, hoary bats, and Mexican free-tailed bats (Pickle et al. 2017).

Mist-net surveys were completed in the Permit Area in 2016 and 2017 as described in Section 3.3.3.1. No Indiana bats were captured during mist-net survey efforts.

As stated above, survey results indicate probable absence of Indiana bats in the Permit Area during summer; therefore, maternity colonies are unlikely to occur within the Permit Area. However, Indiana bats may use the Permit Area for foraging. The nearest known historic Indiana bat hibernaculum, Bear Den, in which eight hibernating Indiana bats were observed during the winter 2019 survey of the Mitigation Site (Magnolia 2019), is located approximately 16.1 miles from the Project. Indiana bats are not expected to occur within the Permit Area during the spring staging, fall swarming, or winter hibernation seasons.

Status in Kiamichi River Mitigation Site

Acoustic surveys were completed in the Mitigation Site in 2019. Methods and results are discussed in detail in the survey report provided as Appendix F-1 to the Bat Habitat Conservation Plan for the Wildhorse Mountain Habitat Conservation Plan, Pushmataha County, Oklahoma (Magnolia 2019). A total of 1,410 identifiable calls were recorded. Indiana bat calls comprised 2.3% of the calls (n = 32).

3.3.4.1.2 Northern Long-eared Bat

Section 3.3 of the HCP provides a detailed description of northern long-eared bat life history and habitat requirements and species status and occurrence range-wide, in Oklahoma, and in the Plan Area (Wildhorse Wind Energy 2019a). Below is a brief summary of select information specifically relevant to this environmental assessment and the analysis herein.

Life History Summary

The northern long-eared bat range extends throughout most of southern Canada and the eastern and midwestern United States (excluding parts of the southeast United States), including eastern Oklahoma (U.S. Fish and Wildlife Service 2020b), where the Project is located. The northern long-eared bat forages within forests, along linear features such as forest edges and streams, and

over water sources such as ponds. The northern long-eared bat spends summers in the forest interior and hibernates in caves and mines during winter months. The northern long-eared bat requires very high humidity associated with selected hibernacula. After hibernation, the species is found in wooded or semi-wooded habitats for the duration of the summer months. The northern long-eared bat utilizes crevices and loose bark on trees (> 3.0 inches [7.6 centimeters]) in diameter at breast height) for roosting, although it is considered to be opportunistic and less selective than the Indiana bat (U.S. Fish and Wildlife Service 2020b; Wisconsin Department of Natural Resources 2017).

Status in the Permit Area

During the June to July 2016 acoustic survey, northern long-eared bat calls comprised 3.8% of the calls (n = 740), according to the automated identification software. Of these calls, northern long-eared bat calls were qualitatively confirmed at 14 of the 61 sites (Murray et al. 2016). Upon examination by a qualified biologist, 14 of the calls were determined to have been made by northern long-eared bats. During the July to November 2016 survey, bat passes were identified to frequency groups, as described above in Section 3.3.3.1.

Three northern long-eared bats were captured during 2016 mist-net surveys: two post-lactating adult females and one adult non-reproductive male. The two adult female bats were radio-tracked, and observers documented six total roost sites, of which only two were accessible. Emergence counts at the accessible roosts documented one and zero bats emerging (Pickle at al. 2016b).

Fifty-one northern long-eared bats were captured during 2017 mist-net surveys. This included 21 lactating females, 11 pregnant females, and 19 non-reproductive males. Four pregnant female and four lactating female northern long-eared bats were affixed with radio-trackers; however, observers were unable to locate five of these after release. Observers documented a total of four roost trees, all accessible, while tracking the remaining three bats. Emergence counts at the four roosts documented zero, one, five, and 29 exiting bats (Hyzy et al. 2017).

As stated above, survey results indicate the presence of northern long-eared bats in the Permit Area during summer, including the presence of maternity colonies in the Permit Area. The nearest known hibernacula are located more than 50 miles (80 kilometers) from the Permit Area; therefore, the species is not expected to occur within the Permit Area during the spring staging, fall swarming, or winter hibernation seasons.

Status in Kiamichi River Mitigation Site

Acoustic surveys conducted within the Mitigation Site in 2019 recorded a total of 1,410 identifiable calls. Northern long-eared bat calls comprised 0.9% of the calls (n = 12) (Magnolia 2019).

3.3.4.2 NON-COVERED SPECIES

The federally listed endangered American burying beetle (*Nicrophorus americanus*) is the only non-bat threatened or endangered species that was identified as having potential to occur within the Permit Area during the Tier 2 Site Characterization, carried out in accordance with the Service's Land-Based Wind Energy Guidelines (Pickle et al. 2015). The Permit Area is within

the potential range of the American burying beetle; a site visit performed as part of the Tier 2 analysis confirmed that habitat within the Permit Area would be considered potentially suitable for the American burying beetle (Pickle et al. 2015). However, an American burying beetle presence/absence survey completed in 2018 did not detect the American burying beetle and concluded that the species is absent from the Permit Area (Hoback 2018).

No non-bat threatened or endangered species were determined to be present within the Permit Area; therefore, no non-bat threatened or endangered species would be expected to be affected and these species have been excluded from further consideration.

4 ENVIRONMENTAL CONSEQUENCES

NEPA requires that agencies include in their environmental assessments a detailed statement of, among other things, the environmental impact of a proposed action and a description of unavoidable, adverse, environmental effects should the proposed action be implemented (42 United States Code 4332). NEPA regulations identify three types of effects: direct, indirect, and cumulative (40 C.F.R. § 1508.8)[3]. Direct effects are "caused by the action and occur at the same time and place" (40 C.F.R. § 1508.8). Indirect effects are "caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable [and] may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 C.F.R. § 1508.8). Cumulative effects are those resulting from "the incremental environmental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 C.F.R. § 1508.8).

Additionally, NEPA requires consideration of both context and intensity (40 C.F.R. § 1508.27) in relation to potential impacts, where context is defined as the significance of an action's current and proposed short- and long-term effects on the whole of a given resource (e.g. affected region). Intensity refers to the severity of the effect.

4.1 Proposed Action Alternative

4.1.1 *Cultural Resources*

In compliance with Section 106 of the NHPA, notifications were sent to the Choctaw Nation, the Oklahoma State Historic Preservation Office, and the Oklahoma Archeological Survey. Since no additional ground disturbance is proposed as part of the Covered Activities, the Service recommended a determination of "no effect" to historic properties for the Project. On December 7, 2020, the Oklahoma Archeological Survey submitted a letter of concurrence for the "no effect" determination as it pertains to precontact archaeological resources. This review and determination were conducted in cooperation with the State Historic Preservation Office.

4.1.2 *Socioeconomics/Environmental Justice*

Operation of the Project will result in an increase in property taxes paid by the Applicant to Pushmataha County. The Project employs a permanent staff of six to eight on-site personnel to provide all operations and maintenance support at the Project. Under the Proposed Action, additional staff would be employed to conduct mortality monitoring as described in the HCP (Wildhorse Wind Energy 2019a). However, this monitoring effort would not result in a substantial increase in employment or population in Pushmataha County over the 30-year life of the Project.

[3] The Council on Environmental Quality (CEQ) established regulations for implementing NEPA in 1978 and made one limited substantive amendment in 1986. In July 2020, CEQ published the final rule comprehensively updating the NEPA regulations for the first time in 40 years. The Wildhorse Mountain Wind HCP EA project commenced in 2019, and the Service has deemed it appropriate for grandfathering under the previous NEPA regulations established in 1978 and amended in 1986. All citations for NEPA regulations in this EA therefore refer to section headings as they appeared prior to July 2020.

Under the Proposed Action, additional curtailment as described in the HCP (Wildhorse Wind Energy 2019a) would result in reduced energy production, which would translate to proportionally lower taxes paid by the Project to state and local jurisdictions as well as lower lease payments to Project landowners.

Management of the Mitigation Site includes cost estimates of time, equipment, and funding necessary to conduct the basic monitoring site visits, management, and reporting, which would be incurred by the Applicant.

While Pushmataha County has a higher proportion of American Indians (14%) compared to the state of Oklahoma (7.5%), no American Indian tribes were identified to reside in or adjacent to the Plan Area. Therefore, no disproportionate impacts to American Indian populations are expected under the Proposed Action.

4.1.3 *Wildlife*

4.1.3.1 TERRESTRIAL WILDLIFE

As described in Section 4.4.1 of the HCP (Wildhorse Wind Energy 2019a), woody vegetation would be allowed to regenerate in the non-gravel Project areas that were cleared for construction at each turbine site. Implementation of the HCP is not expected to result in the introduction of invasive plant species, as the HCP includes monitoring and adaptively managing for invasive species in the Plan Area. Therefore, implementation of the HCP would have minimal impacts on terrestrial wildlife habitat over the 30-year life of the Project.

Short-term construction-related effects to wildlife and wildlife habitat would not occur under the Proposed Action because the Project is already operational. Effects to terrestrial wildlife within the Permit Area during Project operation could occur from operational noise, vibration, shadow flicker, human activity, vehicular activity, collision with or electrocution from overhead lines, or collision with structures or falling objects over the life of the Project. Noise, vibration, and shadow flicker from operational wind turbines could potentially disturb or displace terrestrial wildlife; however, there is very limited available data addressing potential impacts of wind energy facilities on non-volant terrestrial species. The impacts of wind farms on terrestrial mammals are likely dependent on the species, project location, project size, and other factors (Helldin et al. 2012). Significant displacement of common terrestrial mammal species has not been reported from other U.S. wind projects. Some terrestrial wildlife can be temporarily disturbed or displaced by an increased presence of humans and noise associated with maintenance and monitoring. However, common terrestrial wildlife species generally become habituated to human activity, as demonstrated by their frequent presence in residential, agricultural, and other human-influenced areas.

Injury or death of terrestrial wildlife species could occur as a result of collisions with Project vehicles over the 30-year operational life of the Project. Mortality monitoring, as described in the Plan (Wildhorse Wind Energy 2019a), would also include searcher efficiency and carcass persistence trials, in which carcasses are placed in the Permit Area to assess searcher success and carcass removal by scavengers (i.e., mammals and birds). The presence of bat and/or bird carcasses within the Permit Area due to fatal collisions with turbine blades or placement of

carcasses for bias trials may increase scavenger activity and could potentially increase risk for vehicle collision as scavengers move between turbine locations.

During certain weather conditions, ice can form on the blades of turbines and be subsequently thrown from the blades. These situations are rare and there is minimal likelihood for direct collision of falling objects with terrestrial wildlife during Project operation.

The above described potential impacts to terrestrial wildlife species within the Permit Area under the Proposed Action Alternative are not anticipated to result in population-level effects to any terrestrial wildlife species.

The bat mitigation program described in the HCP (Wildhorse Wind Energy 2019a) is intended specifically to contribute to the recovery of Indiana bats and northern long-eared bats through the protection of 90 acres of suitable summer bat habitat within the Mitigation Site. This mitigation would also result in long-term benefits to other terrestrial wildlife species which utilize the forested habitat.

4.1.3.2 MIGRATORY BIRDS

Effects to migratory birds within the Permit Area during Project operation, including eagles and Birds of Conservation Concern commonly observed along the Pushmataha Breeding Bird Survey route described in Section 3.3.2, could occur from operational noise, vibration, shadow flicker, human activity, vehicular activity, collision with or electrocution from overhead lines, or collision with turbines, met towers, or falling objects over the 30-year life of the Project. Noise, vibration, and shadow flicker from operational wind turbines could potentially disturb or displace migratory birds. Disturbance and displacement of migratory bird species at U.S. wind projects has been found to be highly variable by species, project location, project size, and other factors (National Research Council of the National Academies 2007; Poulton 2010; Strickland 2004). Some migratory bird activities and behavior can be disturbed by an increased presence of humans and associated noise that would occur as a result of Project operations. The nest/egg tending behaviors of adult nesting birds may be impacted by human disturbance such that nest failure could result (Leddy et al. 1999). During the nesting season, many raptor species are susceptible to negative impacts caused by human disturbance; however, a variety of raptor species have demonstrated continued use of wind projects for foraging in forested and agricultural settings and successful breeding within 1 mile of turbines (Stantec 2010; Strickland 2004). No impacts to species protected under the Bald and Golden Eagle Protection Act are anticipated due to lack of presence within or near the Permit Area. However, the Applicant may apply for a non-purposeful eagle take permit with the Service that could authorize the take of eagles that may be incidental to but not the purpose of an otherwise legal activity.

Injury or death of migratory bird species could occur as a result of collisions with Project turbines or vehicles over the 30-year life of the Project. Current estimates for bird collision mortality at wind facilities in the Great Plains is 2.43 birds per turbine annually (Loss et al. 2013). Impacts to migratory birds could also occur from mortality monitoring and carcass persistence trials described in the HCP (Wildhorse Wind Energy 2019a) and may include short-term disturbance or displacement due to human presence or fatality due to increased traffic and collisions with Project vehicles. Any vehicle-induced fatalities or carcasses placed for bias trials may attract scavengers and could potentially increase risk for vehicle collision as scavengers

move between turbine locations. Local scavenging birds such as vultures, raptors, and crows may be attracted to the Permit Area, and avian scavengers could collide with spinning turbine blades while attempting to scavenge a carcass. However, carcasses would be collected when found and trial carcasses are removed after trials; therefore, the risk of this type of impact would be temporary.

Injury or death of migratory birds could occur as a result of collision with or electrocution from overhead lines or collision with other Project structures such as the meteorological tower or turbines. Under the Proposed Action, operational adjustments described in the HCP (i.e., turbine cut-in speeds) (Wildhorse Wind Energy 2019a) would not result in different potential direct or indirect impacts to migratory birds over the 30-year life of the Project. To date, there have been very few studies in the United States that focus on the effects of turbine operational adjustments on bird mortality, and most have targeted raptors (Smallwood 2010). The effectiveness of turbine curtailment, feathering, and even shutdown for reducing bird mortality have been found to be inconclusive and would likely be site- and species-specific.

During certain weather conditions, ice can form on the blades of turbines and be subsequently thrown from the blades. These situations are rare and there is minimal likelihood for direct collision of falling objects with migratory birds during Project operation.

The Applicant has developed a Bird and Bat Conservation Strategy (Wildhorse Wind Energy 2019b), which includes a monitoring plan and adaptive management framework designed to monitor bird mortality and respond should significant levels of mortality to bird species occur over the 30-year life of the Project. Therefore, due to the processes in place to monitor and manage these species under the HCP (Wildhorse Wind Energy 2019a), the above described potential impacts to migratory bird species from Project operation within the Permit Area under the Proposed Action Alternative are not anticipated to result in population-level effects to any migratory bird species. While migratory birds are protected under the Migratory Bird Treaty Act from purposeful take, prosecution is not currently pursued for any incidental take (take that may occur due to otherwise lawful activities) caused by the operation or maintenance of wind facilities. Wildhorse Wind Energy has designed the Bird and Bat Conservation Strategy independently in order to address their concerns for impacts to the species addressed within the strategy.

The bat mitigation program described in the HCP (Wildhorse Wind Energy 2019a) is intended specifically to contribute to the recovery of Indiana bats and conservation of northern long-eared bats through the protection of 90 acres of suitable summer bat habitat within the Mitigation Site. However, this mitigation would also result in long-term benefits to migratory bird species which utilize the forested habitat that would be preserved.

4.1.3.3 BATS

Implementation of the HCP (Wildhorse Wind Energy 2019a) under the Proposed Action is intended specifically to contribute to the recovery of Indiana bats and conservation of northern long-eared bats; however, it would also benefit non-listed bat species through a reduction in bat mortality due to curtailment and the protection of 90 acres of suitable summer bat foraging habitat.

Studies conducted at wind projects in a variety of landscapes have demonstrated that curtailment effectively reduces bat mortality and that an inverse relationship exists between cut-in speed and bat mortality rates (Arnett et al. 2010). Unlike birds, bats do benefit from the use of curtailment and cut-in speeds. Therefore, the actual number of bat fatalities resulting from Project operation under the Proposed Action Alternative is expected to be reduced compared to the No Action Alternative due to curtailment measures and the bat conservation program over the 30-year life of the Project. The Applicant has also developed a Bird and Bat Conservation Strategy (Wildhorse Wind Energy 2019b), which includes a monitoring plan and adaptive management framework designed to monitor bat mortality and respond should significant levels of mortality to non-listed bat species occur. Further, protection and preservation of 90 acres of forested habitat within the Mitigation Site would result in long-term beneficial impacts to all bat species that use the habitat for foraging and roosting.

4.1.3.4 THREATENED AND ENDANGERED SPECIES

4.1.3.4.1 Covered Species

Indiana Bat

Under the Proposed Action Alternative, the Service would issue an Incidental Take Permit conditioned upon implementing the HCP. Section 5.2.4 of the HCP includes a thorough and detailed description of the method by which take of Indiana bats was estimated, taking minimization measures into account (Wildhorse Wind Energy 2019a). To quantify the impacts of curtailment on the take predictions, it was necessary to estimate reductions in all-bat fatalities by cut-in speed and then correct these reductions based on the proportion of Covered Species fatalities expected to occur in each season. As determined in Section 5.2.5 of the HCP, the Permit would authorize the take of 0.26 Indiana bats per year, or eight Indiana bats over the 30-year Permit (Wildhorse Wind Energy 2019a).

As reported in Section 5.2.6.2 and Appendix C of the HCP, the majority of *Myotis* species bat carcasses reported in 50 publicly available mortality monitoring studies in the eastern and midwestern United States and Canada were undetermined sex (460 carcasses total, with 18%, 40%, and 42% identified as females, males, and unknown sex, respectively) (Wildhorse Wind Energy 2019a). Therefore, it is difficult to predict the sex ratio of Indiana bats that would be taken at the Project based on available information. However, based on the Project's location and the results of the acoustic and mist-net surveys (Hyzy et al. 2017; Murray et al. 2016; Pickle et al. 2016b, 2017), it is anticipated that 75% of the take would be female bats. As described in Section 5.2.6.3 of the HCP, the Applicant used the Service's Region 3 resource equivalency analysis model (Szymanski et al. 2013) to determine the number of female Indiana bats that would not be recruited into future generations as a result of the incidental take of female Indiana bats at the Project (Wildhorse Wind Energy 2019a). The resource equivalency analysis model indicates that the total predicted loss in reproductive capacity during the 30-year Permit term would be nine female pups and 15 adult female Indiana bats.

Generally, the loss of bats and reproductive capacity from a particular maternity colony has potential to reduce that colony's reproductive productivity. If such losses were great enough, they could threaten the continued existence of that colony. Likewise, the loss of bats from a hibernaculum has potential to reduce the abundance and growth rate of that hibernating

population. However, the incidental take resulting from the Proposed Action is expected to consist of individual bats migrating from various hibernacula and various maternity colonies. Additionally, per Section 5.2.5 of the HCP, the anticipated take is expected to be less than one individual per year (Wildhorse Wind Energy 2019a). As such, incidental take resulting from the Proposed Action is unlikely to have a substantial or frequent impact to any single maternity colony or hibernaculum.

Indiana bats occurring in the Permit Area are part of the Ozark-Central Recovery Unit, which has a population of 276,317 individuals (U.S. Fish and Wildlife Service 2007, 2019a). The range-wide Indiana bat population is estimated at 537,297 individuals. The average annual loss of 0.26 Indiana bats from both the regional and range-wide populations is a negligible reduction and is unlikely to result in population-level impacts (U.S. Fish and Wildlife Service 2019a).

Additionally, under the Proposed Action, the Applicant would implement a bat mitigation program intended to offset the impacts of incidental take. Mitigation measures include protection of approximately 90 acres of high-quality summer habitat occupied by both Indiana and northern long-eared bats. As noted in Section 4.3 of the HCP and based on the Service's resource equivalency analysis model for the Indiana bat, protection of only 27 acres of suitable summer habitat is necessary to offset the anticipated impacts of Indiana bat take. Therefore, the Applicant is exceeding the mitigation necessary to offset the anticipated impacts of Indiana bat take. Therefore, the Proposed Action is expected to result in a net long-term conservation benefit to Indiana bats. The mitigation benefits to Indiana bats (and northern long-eared bats) are described in detail in Section 4.3.1 of the HCP (Wildhorse Wind Energy 2019a).

Northern Long-eared Bat

Under the Proposed Action Alternative, the Service would issue an Incidental Take Permit conditioned upon implementing the HCP. Section 5.3.4 of the HCP includes a thorough and detailed description of the method by which take of northern long-eared bats was estimated, taking minimization measures into account (Wildhorse Wind Energy 2019a). To quantify the impacts of curtailment on the take predictions, it was necessary to estimate reductions in all-bat fatalities by cut-in speed and then correct these reductions based on the proportion of Covered Species fatalities expected to occur in each season. Thus, as determined in Section 5.3.5 of the HCP, the Permit would authorize the take of 1.6 northern long-eared bats per year, or 48 bats over the 30-year Permit (Wildhorse Wind Energy 2019a).

As described above in Section 4.1.3.4.1 and in Section 5.3.6.2 of the HCP (Wildhorse Wind Energy 2019a), it is difficult to predict the sex ratio of *Myotis* species, including northern long-eared bats, that would be taken at the Project based on available information. Both sexes could occur equally in the Permit Area during the spring and fall migration periods. As such, the Applicant used a 1:1 sex ratio of northern long-eared bats occurring in the Permit Area. The Applicant used the Service's Region 3 resource equivalency analysis model specifically developed for northern long-eared bats (Szymanski et al. 2016) to determine the number of northern long-eared bats that would not be recruited into future generations as a result of the incidental take of female northern long-eared bats at the Project (Wildhorse Wind Energy 2019a). The resource equivalency analysis indicates that the total predicted loss in reproductive capacity during the 30-year Permit term would be 38 female pups and 62 adult female northern long-eared bats.

As described above for the Indiana bat, the incidental take of northern long-eared bats resulting from the Proposed Action is expected to consist of individual bats migrating from various hibernacula and various maternity colonies. The average annual loss of less than two individuals per year is unlikely to have a substantial or persistent impact to any single maternity colony or hibernaculum.

Northern long-eared bats occurring in the Permit Area are likely to be part of the Oklahoma and Arkansas populations, which have a population of approximately 449,081[4] and 863,850 adults, respectively. The average annual loss of 1.6 northern long-eared bats from both the regional and range-wide populations is a negligible reduction and is unlikely to result in population-level impacts.

Under the Proposed Action, the Applicant would implement a bat mitigation program intended to offset the impacts of the taking. Mitigation measures include protection of approximately 90 acres of high-quality summer habitat occupied by both Indiana and northern long-eared bats. This exceeds the 84 acres of summer habitat protection required to offset the impacts of northern long-eared bat take (Wildhorse Wind Energy 2019a).

4.1.3.4.2 Non-covered Species

No non-bat threatened or endangered species were determined to be present within the Permit Area; therefore, no non-bat threatened or endangered species are expected to be affected by the Proposed Action.

4.2 No Action Alternative

Under the No Action Alternative, the Service would not issue an Incidental Take Permit, and the Applicant would not implement the HCP (Wildhorse Wind Energy 2019a). The Applicant would operate the Project turbines per the manufacturer's recommendations regarding cut-in speed year-round, and turbines would not be curtailed. No mortality monitoring or bat mitigation program would be implemented.

4.2.1 *Cultural Resources*

The Project is currently in operation and no additional ground disturbance would occur under either alternative; therefore, no additional impacts to cultural resources under the No Action Alternative compared to the Proposed Action are anticipated.

4.2.2 *Socioeconomics/Environmental Justice*

The Project is currently in operation. Therefore, no additional impacts to socioeconomics under the No Action Alternative compared to the Proposed Action are anticipated. Potential impacts from implementation of the HCP, particularly those expected from establishment and management of the Mitigation Site and additional curtailment, would not occur.

[4] Most recent northern long-eared bat population estimates do not include numbers for Oklahoma. Therefore, the Oklahoma population number is estimated by assuming a similar density of bats in Oklahoma and Arkansas based on the amount of forested acres within the species range (Wildhorse Wind Energy 2019b: Section 3.3.2).

4.2.3 *Wildlife*

4.2.3.1 TERRESTRIAL WILDLIFE

Under the No Action Alternative, the bat mitigation program and the 90 acres of suitable summer bat habitat in the Mitigation Site would not be protected and the HCP (Wildhorse Wind Energy 2019a) would not be implemented. No long-term benefit to other terrestrial wildlife species which utilize forested habitat within the Mitigation Site would occur. Furthermore, unintended impacts on wildlife species within the Permit Area from mortality monitoring (e.g., vehicle collisions, scavenger activity, etc.) would not occur under the No Action Alternative. All other impacts to terrestrial wildlife from Project operations would be the same as those described above in Section 4.1.3.1 for the Proposed Action.

4.2.3.2 MIGRATORY BIRDS

Anticipated effects to migratory birds are the same as described above in Section 4.1.3.2, except under the No Action Alternative, the Applicant would not implement a bat mitigation program and the 90 acres of suitable summer bat habitat would not be protected. No long-term benefit to migratory bird species that utilize forested habitat within the Mitigation Site would occur.

4.2.3.3 BATS

Under the No Action Alternative, effects to bat roosting and foraging habitat are not expected to occur because the Project is already constructed. Likewise, repowering or decommissioning is not expected to result in effects to roosting and foraging bat habitat. Effects to bats are expected to be limited to injury and mortality resulting from collisions with turbines for the 30-year life of the Project.

As described in Section 5.1.2.2 of the HCP, the estimated mortality for non-listed bat species without consideration of minimization measures is based on six studies from the Buffalo Mountain wind facility in Tennessee and the Mountaineer and Mount Storm wind facilities in West Virginia. Although outside Region 3, these projects were used as surrogates due to relative similarities in biogeography and the availability of reported confidence intervals for study fatality estimates. Based on the average all-bat fatality estimate calculated from these surrogate studies, the Project is expected to result in the fatality of approximately 29.49 (variance = 11.66) bats per turbine per year, or approximately 855.21 (variance = 9810.02) total bats per year. This represents total fatalities anticipated without consideration of minimization measures. This predicted mortality would also result in a compounded reduction in recruitment into future generations due to the loss of reproductive females (Wildhorse Wind Energy 2019a). Population-level information is necessary to accurately assess and understand the effect of these (or any) mortality rates on non-listed bat species, and such information for non-listed bat species is not available. Therefore, it is not possible to complete an accurate analysis of population-level effects associated with the estimated level of mortality that would occur under the No Action Alternative.

4.2.3.4 THREATENED AND ENDANGERED SPECIES

4.2.3.4.1 Covered Species

Indiana Bat

Anticipated impacts of the taking of Indiana bats are the same as described above in Section 4.1.3.4.1, except that the No Action Alternative would result in the unauthorized incidental take of 0.51 Indiana bats per year (15.3 Indiana bats over the 30-year Permit) as described in Section 5.2.3 of the HCP (Wildhorse Wind Energy 2019a). This represents total fatalities anticipated without consideration of minimization measures. This alternative does not meet the Applicant's purpose and need because it would result in violations of the Endangered Species Act and was not analyzed in the same detail as the Proposed Action. Therefore, the Applicant did not complete resource equivalency analysis modeling related to the No Action Alternative.

The average annual loss of 0.51 Indiana bats from both the regional and range-wide populations is a negligible reduction and is unlikely to result in population-level impacts. However, under the No Action Alternative, the Applicant would not implement a bat mitigation program, and anticipated impacts of the taking would not be offset through minimization measures.

Northern Long-eared Bat

Anticipated impacts of the taking of northern long-eared bats are the same as described above in Section 4.1.3.4.1, except that the No Action Alternative would result in the unauthorized incidental take of 3.2 northern long-eared bats per year (96.3 bats over the 30-year Permit) as described in Section 5.3.3 of the HCP (Wildhorse Wind Energy 2019a). This represents total fatalities anticipated without consideration of minimization measures. This alternative does not meet the Applicant's purpose and need because it would result in violations of the Endangered Species Act and was not analyzed in the same detail as the Proposed Action. Therefore, the Applicant did not complete resource equivalency analysis modeling related to the No Action Alternative.

The average annual loss of 3.2 northern long-eared bats from both the regional and range-wide populations is a negligible reduction and is unlikely to result in population-level impacts. However, under the No Action Alternative, the Applicant would not implement a bat mitigation program, and anticipated impacts of the taking would not be offset through minimization measures.

4.2.3.4.2 Non-covered Species

No non-bat threatened or endangered species were determined to be present within the Permit Area; therefore, no non-bat threatened or endangered species would be affected by the No Action Alternative.

4.3 Cumulative Impacts

Cumulative effects are those resulting from "the incremental environmental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what

agency (Federal or non-Federal) or person undertakes such other actions" (40 C.F.R. § 1508.8). The Council recommends that NEPA analysis should include those potential cumulative effects with direct influence on the agency's action and decision-making. The spatial scope of the cumulative impacts analysis (i.e., the Cumulative Impacts Analysis Area) is Pushmataha County. The 30-year operational life of the Project is the temporal scope for cumulative effects. Based on guidance from the Council, the actions included in the cumulative impacts analysis described in Sections 4.3.1 and 4.3.2 (below) are those with the potential to incrementally contribute to adverse effects to resources in combination with the Proposed Action and are within the spatial and temporal scope of the cumulative impacts analysis.

4.3.1 *Past and Present Actions within the Cumulative Impacts Analysis Area*

Currently, one Federal highway (U.S. Route 271) and several State highways are in operation within 10 miles of the Plan Area (see Figure 1.1). In addition, the Indian Nation Turnpike, a four-lane turnpike constructed to national interstate highway standards, is in operation with interchanges at Antlers and Daisy, Oklahoma. As noted in Section 3.2, timber harvesting is and has historically been a primary industry within Pushmataha County and in the Plan Area.

4.3.2 *Reasonably Foreseeable Future Actions within the Cumulative Impacts Analysis Area*

Reasonably foreseeable future actions within Pushmataha County include the Oklahoma Department of Transportation's Kiamichi River bridge construction project on State Highway 3, which is approximately 32 miles southwest of the Plan Area. The proposed bridge project is anticipated to remove 4.37 acres of trees from within areas identified as suitable habitat for the Indiana bat, of which 4.21 acres will be removed within approximately 30 meters (100 feet) of the existing road and 0.16 acres will be removed from within the area between 30 and 91 meters (100 to 300 feet) of the existing road.

Additional activities that would contribute to cumulative impacts in Pushmataha County include ongoing and future logging and highway maintenance.

4.3.3 *Evaluation of Cumulative Effects*

4.3.3.1 CULTURAL RESOURCES

No effects to cultural resources would occur under the Proposed Action, and therefore no cumulative impacts are expected.

4.3.3.2 SOCIOECONOMICS/ENVIRONMENTAL JUSTICE

No substantial effects to socioeconomics or environmental justice communities would occur under the Proposed Action, and therefore no cumulative impacts are expected.

4.3.3.3 WILDLIFE

4.3.3.3.1 Terrestrial Wildlife

Operation of the Project under the Proposed Action has the potential to kill, injure, disturb, and displace terrestrial wildlife as described in Section 4.1.3.1. Cumulative effects to terrestrial wildlife could occur from ongoing and reasonably foreseeable actions within Pushmataha County, such as logging activities and the Kiamichi River bridge project, that would remove suitable habitat for some species, increase noise and human presence, and increase potential for wildlife and vehicle collisions. Other anthropogenic sources that could result in cumulative adverse effects to terrestrial wildlife include predation by domestic animals, collisions with vehicles, hunting, and poaching. However, the incremental contribution of the Proposed Action when taken in conjunction with the other reasonably foreseeable cumulative impacts is not expected to cause naturally occurring populations of common terrestrial wildlife to be reduced to numbers below levels for maintaining viability at local or regional levels.

4.3.3.3.2 Migratory Birds

Operation of the Project under the Proposed Action has the potential to kill, injure, disturb, and displace birds as described in Section 4.1.3.2. Cumulative effects to birds could occur from ongoing and reasonably foreseeable actions within Pushmataha County, such as logging activities and the Kiamichi River bridge project, that would remove suitable nesting habitat for some migratory bird species, increase noise that may disturb nesting birds, and increase potential for bird and vehicle collisions. Other anthropogenic sources that could result in cumulative adverse effects resulting in bird mortality include predation by domestic animals; collisions with buildings, power lines, communication towers, vehicles, and aircraft; hunting (both legal and illegal); and pesticide use. However, the incremental contribution of the Proposed Action when taken in conjunction with the other reasonably foreseeable cumulative impacts is not expected to cause naturally occurring populations of common birds to be reduced to numbers below levels for maintaining viability at local or regional levels due to impact avoidance and minimization measures described in the Bird and Bat Conservation Strategy for the Project (Wildhorse Wind Energy, LLC 2019b).

4.3.3.3.3 Bats

Operation of the Project under the Proposed Action has the potential to kill and injure non-listed bats as described in Section 4.1.3.3. Cumulative effects to non-listed bats could occur from ongoing and reasonably foreseeable actions within Pushmataha County, such as logging activities and the Kiamichi River bridge project. The Service expects that tree removal associated with the proposed bridge project would cause incidental take of Indiana bats. As take would be difficult to detect, the Service has determined that it is appropriate to express the amount or extent of any incidental take anticipated from the proposed actions addressed under the 2018 Programmatic Biological Opinion (U.S. Fish and Wildlife Service 2018b) through the use of a surrogate measure. In this instance, the Service is using the proposed acreage of tree removal within suitable Indiana bat habitat as a surrogate for the numbers of individuals taken. All tree removal will comply with conservation measures outlined in the 2018 Opinion and will occur during both the active and inactive season for the Indiana bat. As such, the removal of 4.37 acres of trees is anticipated to result in adverse effects. As defined in Table 3 of the 2018 Biological

Opinion (U.S. Fish and Wildlife Service 2018b), mitigation ratios of 1:1.25 and 1:2.0 would be used to calculate the compensatory mitigation required to offset the identified adverse impacts to the Indiana bat for distances within 100 feet and between 100 and 300 feet of the existing road, respectively. Accordingly, about 5.5825 acres of mitigation would be required. Mitigation for the Kiamichi River bridge project will be provided in accordance with the Service's Range-wide Indiana Bat In-lieu Fee Program Instrument established with The Conservation Fund, the program's sponsor.

Other anthropogenic sources that could result in cumulative adverse effects to non-listed bats include predation by domestic animals; collisions with buildings, power lines, communication towers, vehicles, and aircraft; and pesticide use from development projects and/or agriculture.

However, the incremental contribution of the Project when taken in conjunction with the other reasonably foreseeable cumulative impacts is not expected to cause naturally occurring populations of non-listed bats to be reduced to numbers below levels for maintaining viability at local or regional levels.

4.3.3.3.4 Threatened and Endangered Species

Covered Species

INDIANA BAT

Operation of the Project under the Proposed Action has the potential to kill and injure Indiana bats as described in Section 4.1.3.4.1. Cumulative effects to Indiana bats could occur from ongoing and reasonably foreseeable actions within Pushmataha County, such as logging activities and the Kiamichi River bridge project (see Section 4.3.2). Other anthropogenic sources that could result in cumulative adverse effects to Indiana bats include predation by domestic animals; collisions with buildings, power lines, communication towers, vehicles, and aircraft; pesticide use; and habitat loss, including land use conversion, habitat fragmentation, and/or introduction of non-native/invasive plant species, from development projects and/or agriculture. Indiana bats will continue to experience decline due to white-nose syndrome, and individuals within Pushmataha County may also experience mortality due to white-nose syndrome, as discussed in Section 3.2.2.1 of the HCP (Wildhorse Wind Energy 2019a). The ongoing effects of climate change make it reasonably foreseeable that a change in hibernacula temperature may have expected and unexpected impacts, including change in timing of spring and fall migrations or change in hibernacula locations and use. However, the incremental contribution of the Project when taken in conjunction with the other reasonably foreseeable cumulative impacts is not expected to cause naturally occurring populations of Indiana bats to be reduced to numbers below levels for maintaining viability at local or regional levels.

NORTHERN LONG-EARED BAT

Operation of the Project under the Proposed Action has the potential to kill and injure northern long-eared bats as described in Section 4.1.3.4.1. Cumulative effects to northern long-eared bats could occur from ongoing and reasonably foreseeable actions within Pushmataha County, such as logging activities and the Kiamichi River bridge project (see Section 4.3.2). Other anthropogenic sources that could result in cumulative adverse effects to northern long-eared bats

include predation by domestic animals; collisions with buildings, power lines, communication towers, vehicles, and aircraft; pesticide use; and habitat loss, including land use conversion, habitat fragmentation, and/or introduction of non-native/invasive plant species, from development projects and/or agriculture. Northern long-eared bats will continue to experience decline due to white-nose syndrome, and individuals within Pushmataha County may also experience mortality due to white-nose syndrome as discussed in Section 3.3.2.1 of the HCP (Wildhorse Wind Energy 2019a). The ongoing effects of climate change make it reasonably foreseeable that a change in hibernacula temperature may have expected and unexpected impacts, including change in timing of spring and fall migrations or change in hibernacula locations and use. However, the incremental contribution of the Project when taken in conjunction with the other reasonably foreseeable cumulative impacts is not expected to cause naturally occurring populations of northern long-eared bats to be reduced to numbers below levels for maintaining viability at local or regional levels.

Noncovered Species

No non-bat threatened or endangered species were determined to be present within the Permit Area; therefore, no cumulative impacts would occur to non-bat threatened or endangered species.

4.4 Irreversible and Irretrievable Commitment of Resources

Irreversible resource commitments are related to the use of nonrenewable resources, such as energy, minerals, and soils, and the effects these uses might have on future generations. These uses are considered irreversible commitments because the resource has deteriorated to the point that renewal can only occur over long periods, at great expense, or because such impacts would cause the resource to be destroyed or removed. Irretrievable resource commitments refer to a loss of production or use of a resource. Irretrievable commitment refers to the permanent loss of a resource, such as extinction of a species, destruction of a cultural resource site, or loss of soil productivity.

Under the Proposed Action, most resource commitments would not be irreversible or irretrievable. Conservation measures and mitigation measures would be implemented to reduce or offset impacts from take of Covered Species (Wildhorse Wind Energy 2019a). Mortality of wildlife during implementation of the HCP would represent an irretrievable commitment of resources but would not be considered significant because these losses would not be expected to cause changes to local populations or impact ecosystem structure or function.

4.5 Short-Term Use of the Environment Versus Long-Term Productivity

Implementation of the Proposed Action would result in short- and long-term impacts to biological and social resources. Short-term uses of the environment associated with implementation of the HCP (Wildhorse Wind Energy 2019a) would include temporary disturbance and displacement of wildlife within the Permit Area. Long-term impacts associated with the facilities and structures that would remain in place for the life of the Project are not

expected to affect natural resources to any substantial degree. Long-term productivity would be unaffected by the short-term uses associated with the proposed Covered Activities. Additionally, it is possible that implementation of the Covered Activities, including the commitment to preserve non-affected habitat within the Mitigation Site, would contribute to and benefit long-term productivity for all biological resources.

5 CONSULTATION AND PREPARERS

5.1 Consultation and Coordination

5.1.1 *State Agencies*

The following State agencies were consulted to solicit input on the potential impacts of the Project:

- Oklahoma Department of Wildlife Conservation
- Oklahoma Archeological Survey
- Oklahoma State Historic Preservation Office

5.1.2 *Tribal Consultation*

NEPA requires Federal agencies to assess the effects of their proposed actions on the human environment prior to making decisions. This effort includes evaluation of potential impacts to tribal and historic properties. Section 106 of the NHPA also requires Federal agencies to consider the effects of their proposed actions on historic properties. The Section 106 process goal is to identify and consider historic properties that might be affected by a Federal action and to attempt to resolve any adverse effects through consultation.

Federal agencies' statutory obligations under NEPA and NHPA are independent. However, integrating the processes creates efficiencies, promotes transparency and accountability, and supports a broad discussion of effects to the human environment.

The Service initiated government-to-government consultation pursuant to Section 106 of the NHPA on March 10, 2020, with an invitation to the Absentee-Shawnee Tribes of Indians of Oklahoma, the Apache Tribe of Oklahoma, the Caddo Nation of Oklahoma, the Cheyenne and Arapaho Tribes, the Choctaw Nation of Oklahoma, the Osage Nation, the Quapaw Tribe of Indians, and the Wichita and Affiliated Tribes, which included a copy of the cultural resources survey report for the survey conducted by Chambers Group, Inc., in 2018 (see Section 3.1). Only the Choctaw Nation responded via email to the initial consultation request on April 20, 2020, expressing concerns about the cultural resources survey that was conducted for the Project (see Appendix A). The Service held a virtual meeting with the Choctaw Nation on May 20, 2020, to discuss their concerns with the cultural resources survey. On February 12, 2021, the Service sent a written response to the Choctaw Nation addressing the concerns in their April 20, 2020, letter.

On April 15, 2021, the Choctaw Nation submitted a comment letter via email indicating that they were not consulted by the Applicant or about a Permit (for incidental take of the Indiana bat and northern long-eared bat) until after turbines had been constructed. They also expressed concerns regarding the visual impact of turbines on Choctaw Traditional Cultural Properties and sacred sites, on a Tribal building that is on the National Register, on several Tribal cemeteries, and on a number of archaeological sites. The Service followed up with a virtual meeting with the Choctaw Nation in July 2021.

The Choctaw Nation submitted a comment letter on September 9, 2021, during the public comment period for the draft environmental assessment. The Service provided a response to their letter on February 22, 2022 (see Appendix A).

5.2 Preparers/Reviewers

Name	Agency	Role
Alisha Autio	U.S. Fish and Wildlife Service, Oklahoma Ecological Services Field Office	NEPA Lead/Fish and Wildlife Biologist
Laurence Levesque	U.S. Fish and Wildlife Service, Oklahoma Ecological Services Field Office	Supervisory Fish and Wildlife Biologist
Elizabeth Duran	U.S. Fish and Wildlife Service, Southwest Regional Office	Fish and Wildlife Biologist
Stacey Stanford	U.S. Fish and Wildlife Service, Southwest Regional Office	Fish and Wildlife Biologist
Christine Hartmann	SWCA Environmental Consultants	Project Manager
Adrian Hogel	SWCA Environmental Consultants	NEPA Lead
Drew Carson	SWCA Environmental Consultants	Bat Biologist
Kely Mertz	SWCA Environmental Consultants	Wildlife Biologist

6 REFERENCES

Arnett, E. B., K. Brown, W. P. Erickson, J. Fiedler, B. L. Hamilton, T. H. Henry, A. Jain, G. D. Johnson, J. Kerns, R. R. Koford, C. P. Nicholson, T. O'Connell, M. Piorkowski, and R. Tankersley, Jr. 2008. Patterns of Bat Fatalities at Wind Energy Facilities in North America. Journal of Wildlife Management 72(1): 61-78.

Arnett, E. B., M. M. P. Huso, M. R. Schirmacher, and J. P. Hayes. 2010. Effectiveness of Changing Wind Turbine Cut-in Speed to Reduce Bat Fatalities at Wind Facilities: Final Report. Annual report prepared for the Bats and Wind Energy Cooperative (BWEC) and the Pennsylvania Game Commission. Bat Conservation International (BCI), Austin, Texas. May 2010. Available at: http://www.batsandwind.org/pdf/Curtailment%20Final%20Report%205-15-10%20v2.pdf.

Bat Conservation International. 2020. Bat Species: US Bats. BCI, Inc. Austin, Texas. Available at: http://www.batcon.org. Accessed August 2020.

Chambers Group, Inc. 2018. Phase I and II Cultural Resources Survey of Wild Horse Mountain Wind Project, Pushmataha County, Oklahoma. Prepared for RES Americas, Inc. March 2018.

Cornell Lab of Ornithology. 2020. eBird. Available at: https://ebird.org/map Accessed January 2020.

Data USA. 2020. Viz Builder tool. Available at: https://datausa.io/profile/geo/pushmataha-county-ok. Accessed January 22, 2020.

Gray & Pape, Inc. 2017. Cultural Resources Desk Assessment for the Wild Horse Windfarm in Pushmataha County, Oklahoma. November 29, 2017.

Headwaters Economics. 2020. Economic Profile System: U.S. Fish and Wildlife Service Socioeconomic Profile, Pushmataha County, Oklahoma. Report produced January 16, 2020.

Helldin, J.O., J. Jung, W. Neumann, M. Olsson, A. Skarin, and F. Widemo. 2012. The impact of wind power on terrestrial mammals: A synthesis. Swedish Environmental Protection Agency. Stockholm, Sweden. Available at: http://space.hgo.se/wpcvi/wp-content/uploads/import/pdf/Kunskapsdatabas%20miljo/20130506/The%20impacts%20of%20wind%20power%20on%20terrestrial%20mammals.pdf.

Hoback, W.W. 2018. Results of Presence/Absence Survey of American Burying Beetle Between Clayton and East of Albion, OK – Wildhorse Mountain Wind Energy Project. August 28, 2018. Prepared by Hoback Consulting, Stillwater, Oklahoma.

Horn, J. W., E. B. Arnett, and T. H. Kunz. 2008. Behavioral Responses of Bats to Operating Wind Turbines. Journal of Wildlife Management 72(1): 123–132.

Hyzy, B., T. Sichmeller, and J. Pickle. 2017. Indiana Bat and Northern Long-Eared Bat Mist-Net and Radio-Telemetry Surveys at the Wildhorse Mountain Wind Project. Draft Report: May 16 – June 12, 2017. Prepared for Wildhorse Wind Energy, LLC., Broomfield, Colorado. Prepared by Western EcoSystems Technology, Inc. (WEST), Golden Valley, Minnesota.

Fuller, B. 2019. Personal communication between Brian Fuller, U.S. Fish and Wildlife Service, and Brandi Welch-Acosta, Western Ecosystems Technology, Inc.; August 27, 2019.

Leddy, K.L., K.E. Higgins, and D.E. Naugle. 1999. Effects of wind turbines on upland nesting birds in conservation reserve program grasslands. Wilson Bulletin 111: 100104.

Loeb, S.C., T.J. Rodhouse, L.E. Ellison, C.L. Lausen, J.D. Reichard, K.M. Irvine, T.E. Ingersoll, J.T.H. Coleman, W.E. Thogmartin, J.R. Sauer, C.M. Francis, M.L. Bayless, T.R. Stanley, and D.H. Johnson. 2015. A plan for the North American Bat Monitoring Program (NABat). U.S. Forest Service General Technical Report.

Loss, S.R., T. Will, and P.P. Marra. 2013. Estimates of bird collision mortality at wind facilities in the contiguous United States. Biological Conservation 168 (2013): 201–209.

Magnolia Land Partners, LLC (Magnolia). 2019. Bat Habitat Conservation Plan for the Wildhorse Mountain HCP. Pushmataha County, Oklahoma. December 2019.

Martin, C.M., E.B. Arnett, R.D. Stevens, and M.C. Wallace. 2017. Reducing Bat Fatalities at Wind Facilities While Improving the Economic Efficiency of Operational Mitigation. Journal of Mammalogy 98(2): 378–385.

Martin, K.W. 2019. Imperiled Bat Species Presence/Probably Absence Acoustic Survey Report for Jackson Property Site, Pushmataha County, Oklahoma. Prepared for Magnolia Lands Partners, LLC. August 28, 2019.

Murray, K. L., K. Irwin, R. Schmitt, and J. Pickle. 2016. Indiana Bat and Northern Long-Eared Bat Acoustic Surveys at the Wildhorse Mountain Project. June 6 – July 7, 2016. Prepared for Wildhorse Wind Energy, LLC. Prepared by Western EcoSystems Technology, Inc. (WEST), Bloomington, Indiana.

National Renewable Energy Laboratory. 2013. NREL Study Finds Barotrauma Not Guilty. Wind News, NREL. March 22, 2013. Available online: https://www.nrel.gov/news/program/2013/2149.html.

National Research Council of the National Academies. 2007. Environmental impacts of wind energy projects. Committee on Environmental Impacts of Wind Energy Projects, Board on Environmental Studies and Toxicology, Division of Earth and Life Studies. National Academies Press, Washington, D.C. Available at: https://www.nap.edu/catalog/11935/environmental-impacts-of-wind-energy-projects .

Oklahoma Department of Wildlife Conservation. 2016. Oklahoma Comprehensive Wildlife Conservation Strategy. Available at https://www.wildlifedepartment.com/sites/default/files/Oklahoma%20Comprehensive%20Wildlife%20Conservation%20Strategy_0.pdf. Accessed January 2020.

Pickle, J., K., T. Mattson, and A. Kreger. 2015. Tier 2 Analysis for the Wild Horse Mountain Wind Energy Site, Pushmataha County, Oklahoma. November 13, 2015. Prepared for RES American Developments Inc. Prepared by Western EcoSystems Technology, Inc. (WEST), Golden Valley, Minnesota.

Pickle, J., K. Chodachek, C. Rittenhouse and A. Dahl. 2016a. Raptor Nest Survey Results for the Wild Horse Mountain Wind Energy Site, Pushmataha County, Oklahoma. June 1, 2016. Prepared for RES American Developments Inc. Prepared by Western EcoSystems Technology, Inc. (WEST), Golden Valley, Minnesota.

Pickle, J., K. Murray, and R. Schmitt. 2016b. Indiana Bat and Northern Long-Eared Bat Mist-Net and Telemetry Surveys for the Wildhorse Mountain Wind Project. September 16, 2016. Prepared for Wildhorse Wind Energy, LLC. Prepared by Western EcoSystems Technology, Inc. (WEST), Bloomington, Indiana.

Pickle, J., L. Bishop-Boros, and D. Solick. 2017. Bat Activity Studies for the Wildhorse Mountain Wind Project, Pushmataha County, Oklahoma. February 9, 2017. Prepared for RES American Developments Inc. Prepared by Western EcoSystems Technology, Inc. (WEST), Golden Valley, Minnesota.

Poulton, V. 2010. Summary of post-construction monitoring at wind projects relevant to Minnesota, identification of data gaps, and recommendations for further research regarding wind-energy development in Minnesota. Western EcoSystems Technology Inc. Cheyenne, Wyoming. Available at: https://tethys.pnnl.gov/sites/default/files/publications/Poulton-2010.pdf.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr., & W. A. Link. 2011. The North American Breeding Bird Survey, results and analysis 1966 – 2009 (version 3.23.2011). USGS Patuxent Wildlife Research Center, Laurel, Maryland, USA. Available at http:// www.mbr-pwrc.usgs.gov/bbs/bbs.html/.

Smallwood, S. 2010. Assessment of Three Proposed Adaptive Management Plans for Reducing Raptor Fatalities in the Altamont Pass Wind Resources Area. Altamont Pass Wind Resource Area Scientific Review Committee, Hayward, California. Available at: http://www.altamontsrcarchive.org/alt_doc/p161_smallwood_assessment_of_amps.pdf.

Stantec. 2010. Cohocton and Dutch Hill Wind Farms year 1 2009 post-construction monitoring report for the Cohocton and Dutch Hill Wind Farms in Cohocton, New York. Stantec Consulting Services, Inc. Topsham, Maine. October.

Strickland, D. 2004. Overview of non-collision related impacts from wind projects. Pages 34-38 in S.S. Schwartz, editor. Proceedings of the wind energy and birds/bats workshop: understanding and resolving bird and bat impacts. RESOLVE, Inc. Washington, D.C.

Szymanski, J., F. Clark, and D. Laughland. 2013. Region 3 Indiana Bat Resource Equivalency Analysis Model for Wind Energy Projects. Draft Version: January 31, 2013.

Szymanski, J, F. Clark, and D. Laughland. 2016. Region 3 Northern Long-Eared Bat Resource Equivalency Analysis Model for Wind Projects. Public Version 1. Bloomington Field Office, Bloomington, Indiana. December 2016.

U.S. Fish and Wildlife Service. 2007. Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. U.S. Department of Interior, Fish and Wildlife Service, Region 3. April 2007. U.S. Fish and Wildlife Service, Fort Snelling, Minnesota. Available online: http://ecos.fws.gov/docs/recovery_plan/070416.pdf

U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. Available at: https://www.fws.gov/migratorybirds/pdf/grants/BirdsofConservationConcern 2008.pdf. Accessed January 2020.

U.S. Fish and Wildlife Service. 2015. Endangered and Threatened Wildlife and Plants; Threatened Species Status for the Northern Long-Eared Bat with 4(D) Rule. Department of the Interior, Fish and Wildlife Service, 50 C.F.R. § Part 17. *Federal Register* 80: 17973. May 4, 2015.

U.S. Fish and Wildlife Service. 2016. Programmatic Biological Opinion on Final 4(D) Rule for Northern Long-Eared Bat and Activities Excepted from Take Prohibitions. Service Regions 2, 3, 4, 5, and 6. Prepared by U.S. Fish and Wildlife Service, Midwest Regional Office, Bloomington, Minnesota. January 5, 2016. Available online: https://www.fws.gov/Midwest/endangered/mammals/nleb/pdf/BOnlebFinal4d.pdf

U.S. Fish and Wildlife Service. 2018a. Indiana Bat (*Myotis sodalis*). U.S. Fish and Wildlife Service Environmental Conservation Online System (ECOS) Species Profile. ECOS available at: http://ecos.fws.gov/ecos/indexPublic.do. Accessed December 2020.

U.S. Fish and Wildlife Service. 2018b. Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat. Prepared by U.S. Fish and Wildlife Service Midwest Regional Office, Bloomington, Minnesota. February 5, 2018. Available at: BORevised02052018forIbatNLEB_FHWA_FRA_ FTA.pdf (fws.gov).

U.S. Fish and Wildlife Service. 2019a. 2019 Indiana Bat (*Myotis sodalis*) Population Status Update. U.S. Fish and Wildlife Service Endangered Species Program: Midwest Region. Compiled by A. King, Ecological Services Field Office, U.S. Fish and Wildlife Service, Bloomington, Indiana, from data gathered from bat biologists throughout the species' range. Revised June 27, 2019. Available: https://www.fws.gov/Midwest/endangered/ mammals/inba/pdf/2019_IBat_Pop_Estimate_6_27_2019a.pdf

U.S. Fish and Wildlife Service. 2019b. Indiana Bat Range Map. Available at https://www.fws.gov/midwest/endangered/mammals/inba/RangeMapINBA.html. Accessed February 2020.

U.S. Fish and Wildlife Service. 2019c. Indiana bat (*Myotis sodalis*) Fact Sheet. Available at: https://www.fws.gov/midwest/endangered/mammals/inba/inbafctsht.html. Accessed February 2020.

U.S. Fish and Wildlife Service. 2020a. Flyways. Available at: https://www.fws.gov/birds/management/flyways.php. Accessed February 2020.

U.S. Fish and Wildlife Service. 2020b. Northern Long-eared Bat Range Map. Available at https://www.fws.gov/midwest/Endangered/mammals/nleb/nlebRangeMap.html. Accessed February 2020.

U.S. Geological Survey. 2020. North American Breeding Bird Survey, Data and Results, Annual Species Totals For Pushmataha (67103) Available at: https://www.pwrc.usgs.gov/bbs/results/. Accessed January 2020.

Wildhorse Wind Energy, LLC (Wildhorse Wind Energy). 2019a. Indiana Bat and Northern Long-eared Bat Habitat Conservation Plan for the Wildhorse Mountain Wind Facility Pushmataha County, Oklahoma.

Wildhorse Wind Energy. 2019b. Bird and Bat Conservation Strategy for the Wildhorse Mountain Wind Facility Pushmataha County, Oklahoma. November 14, 2019.

Wisconsin Department of Natural Resources. 2017. Northern Long-eared Bat (*Myotis septentrionalis*) Species Guidance. Available at: https://dnr.wi.gov/files/PDF/pubs/er/ER0700.pdf. Accessed February 2020.

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APPENDIX A

Public Comments and Responses

[EXTERNAL] Fw: public comment on federal register - wind mt

Jean Public <jeanpublic1@yahoo.com>
Sat 8/28/2021 8:43 PM

To: OK ES NEPA, FW2 <OKES_NEPA@fws.gov>; Collins, Ken <ken_collins@fws.gov>; info@defenders.org <info@defenders.org>; info@peta.org <info@peta.org>; madraven@gmail.com <madraven@gmail.com>; scoops@hufrpost.com <scoops@hufrpost.com>; foa@foa.org <foa@foa.org>; info@nyclass.org <info@nyclass.org>; contact@thedodo.com <contact@thedodo.com>; info@idausa.org <info@idausa.org>; inf@cok.net <inf@cok.net>

Cc: information@sierraclub.org <information@sierraclub.org>; info@pewtrusts.org <info@pewtrusts.org>; foe@foe.org <foe@foe.org>; info@earthjustice.org <info@earthjustice.org>

i oppose development of this site in oklahoma. i believe this bat species must be protected as well as theopen land. i do not believe that wind is the answer after seeing how devastating they fell apart in texas thispast winter when a storm came. they were out of actoin supplying nothing to the ameican citizens in bad weather. they were unreliable. why shoudl they be given more land to damage for nothing. no permit shoudl be given for this bat and bifd killng by wnd tunnels. they have proven how unsatisfactory they are in texas, a similar environment. this commetn is for the public record. please receipt., jean publiee jeanpublic1@gmail.com

[Federal Register Volume 86, Number 164 (Friday, August 27, 2021)]
[Notices]
[Pages 48243-48244]
From the Federal Register Online via the Government Publishing Office [www.gpo.gov]
[FR Doc No: 2021-18450]

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS-R2-ES-2020-N156; FXES11140200000-212-FF02ENEH00]

Application for an Incidental Take Permit; Habitat Conservation Plan and Draft Environmental Assessment for Wildhorse Mountain Wind Project, Pushmataha County, Oklahoma

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of availability; request for comments.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce the availability of a draft environmental assessment (dEA) under the National Environmental Policy Act (NEPA), and application for an incidental take permit (ITP) supported by a habitat conservation plan (HCP) for the operation of an existing wind facility, the Wildhorse Mountain Wind project (project), in Pushmataha County, Oklahoma. Wildhorse Wind Energy, LLC (Applicant) has applied for an ITP under the Endangered Species Act of 1973, as amended. The requested ITP, which would be in effect for a period of 30 years, if granted, would cover incidental take of the federally endangered Indiana bat and threatened northern long-eared bat. The potential incidental take would be associated with activities associated with the operation of the existing wind project. We invite public comments on the permit application, proposed HCP, and dEA.

DATES: Submission of Comments: We will accept comments received or postmarked on or before September 27, 2021.

ADDRESSES:
Obtaining documents: The documents this notice announces are available for public inspection by any of the following means.
Internet: You may obtain electronic copies of the dEA and HCP on the Oklahoma Field Office website at http://www.fws.gov/southwest/es/oklahoma/.
U.S. Mail: You may obtain the documents at the following addresses. In your request for documents, please note that your request is in reference to the Wildhorse Mountain Wind Project HCP and dEA.
EA and HCP: A limited number of CD-ROM and printed copies of the EA and HCP are available, by request, from Ken Collins, Acting Field Supervisor, Oklahoma Ecological Services Field Office, Tulsa OK, telephone 918-581-7458.
The ITP application is available by mail from the Regional Director, U.S. Fish and Wildlife Service, P.O. Box 1306, Room 6034, Albuquerque, NM 87103.

Submitting Comments

You may submit written comments by one of the following methods:
Email: okes_nepa@fws.gov; or
Facsimile: 918-581-7467, Attn: OKES Wildhorse Mountain Wind Project HCP EA.
U.S. mail: Field Supervisor, Oklahoma Ecological Services Field Office, 9014 East 21st Street, Tulsa, Oklahoma 74129-1428.
Please specify that your information request or comments concern the Wildhorse Mountain Wind Project EA/HCP.

FOR FURTHER INFORMATION CONTACT: Ken Collins, by U.S. mail at the U.S. Fish and Wildlife Service, Oklahoma Ecological Services Field Office (at the Tulsa street address above), or by phone at 918-581-7458. If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service at 800-877-8339.

SUPPLEMENTARY INFORMATION: The Applicant has applied to the Service for an ITP under section 10(a)(1)(B) of the Endangered Species Act of 1973,

as amended (ESA; 16 U.S.C. 1531 et seq.). The requested ITP, which would be in effect for a period of 30 years, if granted, would authorize incidental take of the federally endangered Indiana bat (Myotis sodalis) and threatened northern long-eared bat (Myotis septentrionalis) during the operation of an existing wind facility in Pushmataha County, Oklahoma.

In total, the plan area is 13,731.6 acres, including the 13,641.6-acre wind facility and an off-site mitigation area (90 acres of contiguous forested habitat in Pushmataha County). The facility, constructed in 2019, consists of 29 wind turbines, with a total generating capacity of 100 megawatts.

Activities potentially causing take include the operation of the existing 29 wind turbines. The Applicant has proposed a HCP that would be implemented to address project impacts to the Indiana bat and northern long-eared bat.

We are notifying the public of the Applicant's proposal of an HCP and request to the Service for an ITP to cover incidental take of the Indiana bat and northern long-eared bat associated with the operation of the Wildhorse Mountain Wind facility. In addition, we are notifying the public of the Service's preparation of a dEA regarding impacts of the requested action or feasible alternatives, of an opportunity for public comment on our action, and of our intention to finalize the environmental assessment after consideration of public comment.

Background

Section 9 of the ESA prohibits ``take'' of fish and wildlife species listed as endangered or threatened (16 U.S.C. 1531-1544). Under section 3 of the ESA, the term ``take'' means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (16 U.S.C. 1532(19)). The term ``harm'' is further defined by regulation as an act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3).

Under section 10(a)(1)(B) of the ESA, the Secretary of the Interior may authorize the taking of federally listed species if such taking occurs incidental to otherwise legal activities and where a conservation plan has been developed under ESA section 10(a)(2)(A) that describes (1) the impact that will likely result from such taking; (2) the steps an Applicant will take to minimize and mitigate that take to the maximum extent practicable, and the funding that will be available to implement such steps; (3) the alternative actions to such taking that an Applicant considered and the reasons why such alternatives are not being utilized; and (4) other measures that the Service may require as being necessary or appropriate for the purposes of the plan.

Issuance criteria

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under section 10(a)(2)(B) for an incidental take permit requires the Service to find that (1) the taking will be incidental to otherwise lawful activities; (2) an Applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; (3) an Applicant has ensured that adequate funding for the plan will be provided; (4) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and (5) the measures, if any, we require as necessary or appropriate for the purposes of the plan will be met. Regulations governing permits for endangered and threatened species are at 50 CFR 17.22 and 17.32, respectively.

Proposed Action

The proposed action is the issuance of a 30-year ITP to authorize incidental take of up to 8 Indiana bats and 48 northern long-eared bats during the ITP term, resulting from activities covered by the HCP and associated with the operation of the existing Wildhorse Mountain Wind Project in Pushmataha County, Oklahoma. The plan area is 13,731.6 acres, of which 90 acres are protected mitigation lands to offset the impacts of the project.

The proposed HCP, which must meet the requirements in section 10(a)(2)(A) of the ESA, was developed in coordination with the Service and would be implemented by the Applicant. The proposed action will allow for the Applicant to comply with the ESA, and their renewable wind-generated energy would be made available to public utilities. Covered activities in the HCP include the operation of 29 wind turbines and the conservation and preservation of 90 acres, called the mitigation area. The Applicant proposes to minimize and mitigate impacts to the Indiana bat and northern long-eared bat through conservation measures identified in the HCP.

Alternatives

We considered one alternative to the proposed action as part of the environmental assessment process: The no-action alternative. The no-action alternative represents estimated future conditions without the issuance of an ITP. The no-action alternative represents the status quo.

Under the no-action alternative, the Service would not issue the ITP. The no-action alternative would be implemented if the Service denies issuance of a permit or if the Applicant chooses to abandon pursuing an ITP. The Applicant would operate the project without an ITP and would risk not being in compliance with section 9 of the Endangered Species Act if implementation of covered activities results in take of the Indiana bat or the northern long-eared bat without the use of a 4(d) rule.

Next Steps

We will evaluate the permit application, associated documents, and comments we receive to determine whether the permit application meets the requirements of the ESA, NEPA, and implementing regulations. If we determine all requirements are met, we will approve the HCP and issue the ITP under section 10(a)(1)(B) of the ESA to the Applicant, Wildhorse Mountain Wind Energy, LLC, for take of Indiana bat and northern long-eared bat in accordance with the terms of the HCP and specific terms and conditions of the authorizing permit. We will not make our final decision until after the end of the 30-day public comment period, and we will fully consider all comments we receive during the public comment period.

Public Availability of Comments

Written comments we receive become part of the public record associated with this action. Requests for copies of comments will be handled in accordance with the Freedom of Information Act, NEPA, and Service and Department of the Interior policies and procedures. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that the entire comment--including your personal identifying information--may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public disclosure in their entirety.

Authority

We provide this notice under the authority of section 10(c) of the ESA and its implementing regulations (50 CFR 17.22 and 17.32) and NEPA (42 U.S.C. 4371 et seq.) and its implementing regulations (40 CFR 1506.6).

Amy L. Lueders,
Regional Director, Southwest Region, U.S. Fish and Wildlife Service.
[FR Doc. 2021-18450 Filed 8-26-21; 8:45 am]
BILLING CODE 4333-15-P

To Whom it May Concern:

The Choctaw Nation of Oklahoma (CNO) Environmental Protection Services (EPS) would like to submit the following questions regarding the draft environmental assessment and incidental take permit during this public comment period:

- When did US Fish and Wildlife receive the Incidental Take Permit application and why was the facility constructed without first acquiring the permit?
- Table 3.2 of the draft Environmental Assessment prepared by SWCA Environmental Consultants indicates that acoustic surveys were conducted during two separate periods in 2016—June 6-July 7 and July 21-November 9. These surveys should have indicated the potential for incidental take, so why wasn't the permit applied for in 2016 or 2017 prior to construction?
- Did the construction of the facility result in any incidental take? Were any roost trees destroyed in the construction process?

CNO EPS would also like to submit the following questions regarding the pre-construction process:

- Did US Fish and Wildlife receive any correspondence or consultation from the Federal Aviation Administration, Federal Energy Regulatory Commission, or the Oklahoma Corporation Commission prior to construction of the facility?
- Did the permit applicant ever file a public notice of intent to construct consistent with 17 O.S. §17-160.21v1 Subsection B (version per 2017 SB593 amendments effective 4-17-21)? The posting in the Antlers American newspaper on February 1, 2018 appears to satisfy the conditions of 17 O.S. §17-160.21v1 Subsection D, but we don't feel that fulfills their obligations under Subsection B. Additionally, the public meeting was held at 10 A.M. on February 7, 2018, with only a week of advance notice (a small posting in the classified advertisements section of the aforementioned Antlers American). This meeting was during normal working hours on a normal working day which we feel did not provide adequate opportunity for interested parties to attend.

Finally, CNO EPS poses a question for US Fish and Wildlife Service:

- What processes are in place to ensure consultation with tribal nations per Executive Order 13175?

We appreciate the opportunity to provide comments and look forward to any responses the Service is able to provide.

Sincerely,

Curtis Martin

Environmental Specialist

Choctaw Nation of Oklahoma

United States Department of the Interior
FISH AND WILDLIFE SERVICE

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, Oklahoma 74129
918-581-7458 (Office) / 918-581-7467 (Fax)

In Reply refer to:
FWS/R2/OKES/
02EKOK00-2020-F-2207

February 22, 2022

Chief Gary Batton
Choctaw Nation of Oklahoma
P.O. Drawer 1210
Durant, Oklahoma 74702-1210

Dear Honorable Chief Batton:

Based on your tribe's status as a sovereign nation, and in keeping with our trust responsibility, please accept this letter as our follow up to comments submitted by the Choctaw Nation of Oklahoma regarding a draft Environmental Assessment prepared by the U.S. Fish and Wildlife Service. This draft Environmental Assessment concerns the issuance of an Incidental Take Permit for the Wildhorse Mountain Wind Facility Habitat Conservation Plan for Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*).

The following comments were submitted by the Choctaw Nation of Oklahoma on September 9, 2021. The Fish and Wildlife Service's response follows each individual comment.

- When did US Fish and Wildlife receive the Incidental Take Permit application and why was the facility constructed without first acquiring the permit?
    - We received the permit application on 06/22/2021. The permit application was for an incidental take permit for the two bat species during the operation phase of the project. The construction of the project did not require an incidental take permit, considering the project proponents conducted surveys for the American burying beetle, which were negative, and conducted tree clearing during the inactive season for both bats.
- Table 3.2 of the draft Environmental Assessment prepared by SWCA Environmental Consultants indicates that acoustic surveys were conducted during two separate periods in 2016—June 6-July 7 and July 21-November 9. These surveys should have indicated the potential for incidental take, so why wasn't the permit applied for in 2016 or 2017 prior to construction?
    - These surveys did indicate the presence of the two bat species within the project area. However, by conducting clearing during the inactive season for the two bat species, the applicant was able to avoid take during project construction. The applicant subsequently did determine that presence of the bats during project operation when turbine blades are spinning would have the potential to cause take

and therefore, sought an incidental take permit from the U.S. Fish and Wildlife Service.

- Did the construction of the facility result in any incidental take? Were any roost trees destroyed in the construction process?
    - The construction of the project did not result in take, because the project was constructed outside of the bat active seasons and the applicant followed the best management practices for the Indiana Bat and the 4(d) rule for the northern long-eared bat. Accordingly, a 150-foot buffer was established around any identified roost trees and, to our knowledge, no identified roost trees were removed during clearing activities.
- Did U.S. Fish and Wildlife receive any correspondence or consultation from the Federal Aviation Administration, Federal Energy Regulatory Commission, or the Oklahoma Corporation Commission prior to construction of the facility?
    - The Service did not receive notice from any other agencies.
- Did the permit applicant ever file a public notice of intent to construct consistent with 17 O.S. §17-160.21v1 Subsection B (version per 2017 SB593 amendments effective 4-17-21)? The posting in the Antlers American newspaper on February 1, 2018, appears to satisfy the conditions of 17 O.S. §17-160.21v1 Subsection D, but we don't feel that fulfills their obligations under Subsection B. Additionally, the public meeting was held at 10 A.M. on February 7, 2018, with only a week of advance notice (a small posting in the classified advertisements section of the aforementioned Antlers American). This meeting was during normal working hours on a normal working day which we feel did not provide adequate opportunity for interested parties to attend.
    - The construction aspect of this project did not involve a Federal nexus in regards to the U.S. Fish and Wildlife Service at the time of construction, therefore, the Service is unable to answer this question. As stated above, the building of the project did not result in take to the Indiana bat and northern long-eared bat since it was constructed during the inactive season and there was a 150 ft buffer around any identified roost trees. Additionally, surveys in the project area for the American burying beetle (*Nicrophorus americanus*) were negative prior to any ground disturbance. The applicant should be contacted by CNO EPS to find out the answer to this inquiry.
    - Southern Power acquired the Wildhorse Mountain Wind project after construction was complete. Southern is now seeking an incidental take permit for potential impacts to the Indiana bat and the northern long-eared bat that may occur during nighttime operation of the existing turbines. The notice of intent referenced in this comment relates to a state requirement that applied at the time of state permitting for the construction of the project and is unrelated to the ongoing U.S. Fish and Wildlife Service permitting action. Regarding whether the Project was constructed in compliance with all state permitting requirements, including the applicable notification requirements, the Choctaw Nation of Oklahoma should contact the appropriate state agencies for that determination.

- What processes are in place to ensure consultation with tribal nations per Executive Order 13175?
    - The U.S. Fish and Wildlife Service, in accordance with Executive Order 13175 and the Service's Native American Policy, invite Tribal Nations to consult with us when tribal implications are identified within the implementing plans or programs. The U.S. Fish and Wildlife Service contacted the Choctaw Nation of Oklahoma as soon as we received a permit request from the applicant. The Service continues in our efforts to work cooperatively with our Tribal partners on projects whenever we can and welcomes constructive input how that can be improved.

We appreciate your comments on our proposed action and respectfully request that you direct any further questions or concerns regarding these comment responses to Laurence Levesque, biologist, at the above address or by e-mail to laurence_levesque@fws.gov.

At any given time, a Tribal Nation also holds the right to request consultation, and this can be done so by reaching out to and requesting consultation from either the point of contacts on this letter or the Service's Regional Native American Liaison, Westley Foster (Westley_Foster@fws.gov).

Sincerely,

E. Dawn Gardiner,
Acting Field Supervisor