



FINDINGS AND RECOMMENDATIONS REGARDING
THE PROPOSED ISSUANCE OF AN ENDANGERED
SPECIES ACT SECTION 10(a)(1)(B) INCIDENTAL TAKE
PERMIT FOR THE MIDAMERICAN ENERGY COMPANY
IOWA WIND ENERGY PROJECT PORTFOLIO



I. INTRODUCTION

The U.S. Fish and Wildlife Service (Service) proposes to issue an Incidental Take Permit (permit) with a term of 30 years to MidAmerican Energy Company (MEC, applicant). The permit would authorize the taking of the Indiana bat, northern long-eared bat, little brown bat, tricolored bat, and bald eagle associated with the operation of 22 wind projects in the state of Iowa (covered projects) and the mitigation to offset the impacts of the taking of the covered species (jointly, covered activities). The permit would provide authorization in accordance with the requirements of section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended (ESA) and the Bald and Golden Eagle Protection Act (BGEPA).

This statement of findings and recommendations relies on the following documents prepared to support the agency decision: (1) the Final Habitat Conservation Plan; MidAmerican Energy Company Iowa Wind Energy Project Portfolio (HCP); (2) the Service's Final Environmental Impact Statement for the Proposed Habitat Conservation Plan and Incidental Take Permit (EIS) addressing the proposed permit action pursuant to the requirements of the National Environmental Policy Act; and (3) the Service's Biological Opinion for the MidAmerican Energy Company Wind Energy Portfolio Incidental Take Permit and HCP (Biological Opinion).

II. DESCRIPTION OF THE PROPOSED ACTION

The proposed federal action is the issuance of an ESA section 10(a)(1)(B) permit to MEC. MEC has prepared a HCP and is seeking incidental take authorization under section 10 of the Endangered Species Act for the Indiana bat, northern long-eared bat, little brown bat, tricolored bat, and bald eagle (covered species). The incidental taking is expected to be caused by the operation of the covered projects. Specifically, covered species may be killed by spinning blades during wind turbine operations. Full descriptions of the covered projects and their environmental settings can be found in Chapter 3.1 of the HCP. Operation of these projects will include several conservation measures for covered species, as described in Chapter 5 of the HCP. Conservation measures include feathering turbine blades below certain wind speeds at select times of the year in specific locations to minimize bat fatalities. They also include carrion removal and landowner education to reduce attractants for bald eagles.

The applicant will fully offset the impact of the taking through strategic forested habitat conservation/restoration, maintaining or creating artificial roost structures, toxic substance abatement programs, and rehabilitation programs. Take rates will be monitored throughout the permit term. An adaptive management plan and changed circumstances triggers and actions are in place to ensure that the take rates of covered species are not exceeded and are fully mitigated. Additional minimization and/or mitigation measures will occur, if warranted. A complete description of conservation measures, adaptive management, changed circumstances, and

mitigation measures are found in Chapters 5 and 8 of the HCP and are incorporated into this document here by reference.

The EIS analyzes the effects of issuing the proposed permit and the implementation of the applicant's HCP (MEC's HCP Alternative), as well as six other alternatives on the human environment. The resulting effects of each of these alternatives are described in the EIS. The EIS identifies MEC's HCP Alternative as the Preferred Alternative because it reduces impacts to covered species through minimization, provides for fully offsetting the impacts of the taking through mitigation, and meets the applicant's need to implement their HCP and operate the covered projects legally under the ESA and BGEPA under a permit. The Record of Decision (ROD) identifies MEC's HCP alternative as the Environmentally Preferable Alternative based on the proposed mitigation measures, conservation measures for non-listed bat species, and lower air quality impacts, compared to the other alternatives. The detailed rationale for each of these determinations is provided in the EIS and ROD, respectively.

III. ANALYSIS OF EFFECTS

The effects of the requested Permit action and impacts from HCP implementation are fully analyzed in the EIS and Biological Opinion, which are incorporated herein by reference (Service citation). Based on the take estimate presented in the HCP, the issuance of the permit is expected to result in the taking of approximately 300 Indiana bats, 270 northern long-eared bats, 19,200 little brown bats, and 11,610 tricolored bats and 300 bald eagles over the 30-year permit term. These values are the "implementation take," explained under section IV, criteria #2, below. However, the permit may result in the taking of 750 Indiana bats, 637 northern long-eared bats, 22,099 little brown bats, 13,774 tricolored bats, and 300 bald eagles over the 30-year permit term.

The Service analyzed the effect of the proposed taking of the covered bat species using the Thogmartin bat population dynamics model (see section 4.3 of the Biological Opinion) at the authorized take level. The model demonstrated that the take of the covered bat species, in addition to other population stressors, including White Nose Syndrome, was not expected to increase the likelihood of extinction of the covered bat species when compared to the model outputs without the permitted take.

The Service analyzed the effect of the proposed taking of the bald eagle at two geographic scales, regional Eagle Management Units (EMUs) and the Local Area Population (LAP). The expected take of bald eagles is a small percentage of these populations, and falls well below the thresholds for sustainable take established by the Service (see section 4.3.5 of the Biological Opinion).

Mitigation measures for the covered bat species provided for in the HCP include the conservation of 1,309 acres of forested habitat initially, and up to 3,200 total acres, if triggered through the adaptive management plan. Mitigation measures for covered bat species will also consist of the restoration of 42 artificial roost structures initially, and up to 50 artificial roost structures if triggered through the adaptive management plan. Details of the mitigation measures, parameters for mitigation parcel selection, and focal areas for the placement of

mitigation lands are in section 5.3.3 of the HCP, and the adaptive management plan is described in section 5.5 of the HCP.

Bald eagle mitigation measures will support the sustainability of eagle populations in Iowa through rehabilitation of injured eagles, habitat projects, and/or abatement of toxic substances. Reducing the exposure of eagles to toxic substances through education efforts and toxic substance exchange programs, and increasing suitable habitat is expected to increase the survival rate of bald eagles in the wild. Bald eagle mitigation is described in more detail in section 5.3.3 and Appendix I of the HCP.

IV. ISSUANCE CRITERIA UNDER SECTION 10(a)(1)(B) OF THE ESA

Section 10(a)(2)(A) of the ESA requires that “no permit may be issued by the Secretary authorizing any taking referred to in paragraph (1)(B) unless the Permittee submits a to the Secretary a conservation plan that specifies—(i) the impact that will likely result from such taking; (ii) what steps the applicant will take to minimize and mitigate such impacts and the funding that will be available to implement such steps; (iii) what alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized; and (iv) such other measures as the Secretary may require as being necessary or appropriate for the purposes of the plan.” MEC has submitted a Habitat Conservation Plan (HCP) that contains these components.

Section 10(a)(2)(B) of the ESA states that a permit shall be issued if:

...after opportunity for public comment, with respect to a Permit application and the related conservation plan that - (i) the taking will be incidental; (ii) the Permittee will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; (iii) the Permittee will assure that adequate funding for the plan will be provided; (iv) the taking will not appreciably reduce the likelihood of survival and recovery of species in the wild; and (v) the measures, if any, required under subparagraph (A)(iv) will be met; and he has received such other assurances as he may require that the plan will be implemented ...

In accordance with 16 U.S.C. § 1539(a)(2)(B), the Service has evaluated the HCP and made the following findings for each of these issuance criteria:

1. The taking will be incidental.

The Service finds that the taking of the covered species under the HCP will be incidental to otherwise lawful activities. The activity for which incidental take coverage is sought under the Permit is the operation of the MEC wind turbines within the wind energy projects known as Wind I-X. These turbines are located in 22 counties in the State of Iowa. The primary purpose of the wind turbines is to generate electricity, and therefore any take of covered species from wind turbines associated with the operation of the wind energy facility will be incidental to, and not the purpose of, this lawful activity.

2. The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of taking of covered animal species and the effects to other Covered Species that may occur within the Permit Areas.

MEC has independently conducted as well as partnered with the IADNR and the Service on multiple studies to understand and quantify the risks to the covered species across the Plan Area. More specifically, the purpose of these studies was to define areas of relative risk through fatality monitoring and surveys for occurrences and concentrations of covered species across the Plan Area. This information supports our determination that the applicant has minimized and mitigated the impacts of the taking to the maximum extent practicable. The studies and how they informed the HCP are summarized below.

Pre-Permit Studies

The Iowa Department of Natural Resources, in partnership with MEC, received a section 6 HCP Planning Assistance Grant from the Service to complete pre-permit studies to inform the HCP. The studies were implemented over four years, mapped summer and winter bat locations, identified migration movements, and measured fatality rates across all projects. The results are found in the addendum to the HCP. More specifically, the studies consisted of the following:

- a) More than 1,200 nights of acoustic data were collected across 60 counties in the Plan Area and both presence-absence and relative abundance of bat activity of all four covered bat species were mapped in relation to the covered wind projects. Proximity of wind projects in relation to locations of bat abundance and hibernacula informed the relative risk of taking of the covered species and conservation measures.
- b) Migration studies in two distinct regions of the Plan Area were conducted using both passive and active telemetry technology to map migration timing, trajectory, and pathways for northern long-eared bats (focal species for the migration studies). The locations and movements mapped during these studies informed risk and assisted in the search and location of swarming areas and new bat hibernacula. Proximity of wind projects to known and probable migration corridors and swarming areas informed risk and conservation measures.
- c) Acoustic detectors and bat-scent detecting conservation dogs were deployed to identify new hibernacula in the Plan Area. Prior to the studies very few bat hibernacula were known in Iowa, most from the eastern third of the state far from the covered projects. Ten new hibernacula locations were discovered, and their locations informed risk of taking covered species at the wind projects and focal areas for the mitigation.
- d) Fatality monitoring was conducted at all turbines at all covered projects for all covered species. Most projects received at least two full years of monitoring (several received three and some received one, according to when the projects were constructed). Fatality data of covered species and other non-listed, non-covered bat species were collected, and the take estimates of covered species were calculated from this data. All data and analyses for each project are found in the addendum and appendices of the HCP.

- e) Extensive eagle use surveys were conducted at all covered projects. Eagle observations, flight patterns, and time spent in the rotor swept zone were recorded during the surveys to inform relative risk and eagle take estimates across all projects.

Operational Constraints

MEC is a rate-regulated utility responsible for providing electricity to their customer base across Iowa and parts of Illinois and South Dakota. As explained in Chapter 1 of the HCP, MEC is subject to the conditions for retail customer rates and service quality placed upon them by the Iowa Utilities Board, Illinois Commerce Commission, and the South Dakota Public Utilities Commission. Subsequently, it is the Service's understanding that the amount that MEC can charge its retail customers for electricity (rates) and the reliability of providing that electricity (service quality) is regulated by those entities, and MEC must operate their wind facilities in a way that complies with these conditions.

The regulated nature of its electrical rates and service quality are directly related to MEC's ability to implement conservation measures. The primary conservation measure to reduce the taking of covered bat species is raising the wind speed at which wind turbines are programmed to turn on and begin generating electricity ("cut-in speed") during bat active periods. Below this elevated wind speed, turbine blades are pitched into the wind to significantly slow their rotation ("feathered"). In general, as cut-in speeds increase, electricity generation decreases. As wind turbine electricity generation decreases, the ability of MEC to provide reliable power to its customer base decreases, less wind energy is sold, and therefore less revenue is available for the operation and maintenance of MEC's energy generation assets, and rates could be impacted. MEC must comply with the rate-making principles established for their wind projects, and therefore the cut-in speeds at which projects can be operated are constrained.

Minimization Measures

Bats

Based on the results of the above studies of covered species and energy generation goals, MEC has chosen to feather all turbines at all covered projects below manufacturer's cut-in speeds (between 3.0 m/s and 4.0 m/s, depending on turbine type and other factors) from March 15 through November 15, which is the entire bat active season. In addition, MEC will raise cut-in speeds to 5.0 m/s from sunset to sunrise when temperatures are above 50°F from July 15 to September 30, at four of those projects, Lundgren, Macksburg, Wellsburg, and Charles City. These four projects were found to have the most fatalities of covered species and are the closest in proximity to important bat areas as identified by the section 6 studies noted above. These conservation measures were designed to capture the period of highest risk and greatest fatality rates for covered bat species, as indicated by the pre-permit studies. Conservation measures will be implemented annually for the full 30-year term of the permit.

Eagles

Eagles in Iowa frequently scavenge and are attracted to roadkill and livestock carcasses. As described in section 5.3.2 of the HCP, MEC has committed to a program to remove wildlife and livestock carcasses (carrion) near access roads and turbines within their wind facilities. They have also developed a program to educate landowners within wind projects regarding the carrion removal program and the importance of reducing eagle scavenging opportunities near wind farms. These measures are expected to reduce the number of eagles that are attracted to areas near wind turbines, which is expected to minimize the eagle fatalities influenced by carrion attractants. Deterrent and active eagle detection technologies are in the research and development phase and not readily available for deployment at the fleet-wide scale. However, MEC has provided for the implementation of these types of technologies in their adaptive management plan. These technologies will be implemented as part of the adaptive management plan if they become viable and/or are needed to meet the objectives of the HCP.

Take Estimation

Bats

Under the section 6 studies, MEC collected fatality data over four years and calculated the estimated take of the projects for the permit term. Fatality monitoring under wind turbines involves searchers visiting turbines periodically to look for fallen carcasses. It is impossible to directly count all fatalities of animals struck by turbines for many reasons. Carcasses can be carried off or consumed by scavengers, and searchers are unable to find every carcass in a search plot because the carcasses can be obscured by blending into the ground, falling into vegetation, etc. It is also impractical to search all of the area in which carcasses may fall because of the time it would take and the requirement to clear and maintain thousands of acres of farmland under MEC wind facilities. Therefore, the carcasses found during searches must be corrected to account for these factors.

When carcass counts are corrected, there is a degree of uncertainty in fatality estimates even after applying correction factors. This uncertainty is unavoidable. Therefore, the estimates of take from fatality data have confidence intervals around them. That is, fatality estimates and associated take predictions are described as a mean prediction within a range of values. The actual fatality number is likely to occur within that range with a specified probability. The higher the specified probability (e.g. 90%), the greater certainty one has that the actual bats killed per turbine is within the specified range.

MEC has analyzed the fatality data from the aforementioned fatality studies, adjusted for the reductions expected from the cut-in speed adjustments and provided two estimated take numbers for covered bats in their HCP. The first number, the “implementation take,” is the mean number. As mentioned above, this number is most commonly used to describe fatality rates of bat species among wind energy researchers. However, as also explained above, this number always has an upper and lower confidence interval around it because of the unavoidable uncertainty from carcass searches. The second take estimate in the HCP is the “authorized take”. This number is the upper bound of the 90% confidence interval. Described another way, the data indicate that

we can be 90% confident that the actual take will be less than this number. MEC has stated in the HCP that the implementation take rate for covered bat species is the take that is expected, and have based their up-front mitigation measures on this value. However, MEC has requested that they be permitted at the “authorized take” level, and have provided adaptive management triggers and measures to add additional conservation measures and mitigation, should their take exceed the implementation take.

The Service finds that this approach provides the greatest certainty for our impact analyses on the covered bat species. Specifically, by issuing the permit at the authorized take level, we will have accounted for the uncertainty inherent in bat fatality monitoring. This approach provides certainty and efficiency to the Service, the public, and the applicant. Should the implementation take rate be exceeded during the permit term, an adaptive management framework is in place to deal with this possibility, avoiding the need for a permit amendment. Reasonable limits are still placed on the permit, however, by the authorized take number. MEC is not being given free rein to take covered species, but rather permitted to take within a reasonable range of estimates based on the actual data collected under the turbines. This is the best method available to us to provide certainty to the species, the public, and the applicant that our impact analysis has been thorough and has accounted for the inherent uncertainty in estimating take under turbines, particularly when projected over the duration of the permit term.

Bald Eagles

A complete description of take estimation methods for bald eagles is presented in Appendix D of the HCP. MEC explored multiple methods to estimate take, including the Bayesian collision risk model, as referenced in the Service’s Eagle Conservation Plan Guidelines with golden eagle priors (Method 1), the Bayesian collision risk model adapted to include priors developed from the actual bald eagle use and fatality data collected at the projects during the pre-permit studies (Method 2), and the USGS Evidence of Absence model (Method 3). These methods estimated annual take of bald eagles at 6.94, 9, and 6 individuals. MEC has estimated their requested take using the Bayesian collision risk model adapted to include priors developed from bald eagle use and fatality data collected at the project sites (Method 2). More specifically MEC has requested a take of 10 eagles per year for the duration of the permit, which is 10% higher than the 80th percentile (9) to account for uncertainty around growing eagle populations over the term of the permit. Service estimates that the current population of bald eagles (excluding the southwest) is approximately 200,000 breeding pairs. During the permit, the population is expected to grow to approximately 220,000 breeding pairs (a change of approximately 10%) and stabilize, according to the *Population Demographics and Estimation of Sustainable Take in the United States*, published by the Service in 2016. We therefore find that the use of the 80th percentile and the 10% accommodation for eagle population growth is reasonable and provides credibility that the Service is conservatively analyzing the potential impacts to the bald eagle.

The Service has developed a Collision Risk Model (CRM) to establish a take limit for golden or bald eagles at wind facilities. The CRM is designed to incorporate pre-construction eagle use data at turbines and can be informed by fatality data. It also provides a framework to calculate take when site-specific use and/or fatality data is not available. Because MEC’s covered projects were either built or under construction during the development of the HCP, MEC chose to collect

post-construction eagle use and fatality data to inform their take estimate, as described in Method 2 above, and in Appendix D. The Service finds MEC's proposed take level is within the limit established by the CRM and accepts the proposed take authorization level for this permit.

Section 5.5 of the HCP details a tiered adaptive management strategy designed to ensure that the requested take of 10 eagles per year is not exceeded. This adaptive management strategy is based on a regular five-year review period during which calculated take will be evaluated. If the calculated take rate approaches the permitted level, the applicant will implement additional conservation measures. If the take rate is projected to exceed the permitted level, additional conservation measures will be applied or a permit amendment will be sought before permitted levels are exceeded. Failure of take to stay within authorized limits would constitute grounds for permit revocation and/or require a permit amendment.

Mitigation Measures

Bats

MEC has used the Service's Bat Resource Equivalency Analysis Models (REA) to determine the amount of mitigation needed to fully offset the taking of covered bat species. Mitigation for bats taken at the implementation take rate will be 1,309 acres of mitigation projects, which will include enhancement, restoration, and preservation projects. Projects will occur in areas that are occupied by the covered bat species, as described in Chapter 5.3.3 of the HCP. Because projects will mitigate for multiple covered species, a stacking multiplier has been applied to the acres calculated with the REA in order to account for the potential for resource competition among species. Mitigation will also include 42 artificial roost structures (such as the protection and preservation of bat-occupied barns). If adaptive management measures are triggered (see section 5.3.3.1 and section 5.5 of the HCP), mitigation will include up to 3,200 acres of forested habitat mitigation and up to 50 artificial roost structures.

MEC has committed to delivering 279 acres and 4 artificial roost structures within the first year following permit issuance. MEC has also committed to fully delivering all 1,309 acres and 42 artificial roost structures within 10 years of permit issuance, which will ensure that mitigation stays ahead of the taking, even if adaptive management is triggered. Mitigation lands will be managed to maintain habitat integrity for bats, and an adaptive management plan specific to mitigation lands is described in Chapter 5.3.4 of the HCP.

MEC has provided an adaptive management framework that will regularly evaluate past and projected future take rates across projects. If monitoring data indicates that the implementation take may be exceeded in the future, MEC will conduct a mitigation true-up to ensure that mitigation will be implemented in advance of the take, as described in Chapter 5.5.1 of the HCP. The mitigation and adaptive management schedule ensures that mitigation measures will be done concurrent with or in advance of the taking of covered species.

Eagles

MEC has provided a mitigation plan for bald eagles consisting of toxic substance abatement, public education, and Iowa-specific eagle rehabilitation. Section 5.3 of the HCP and Appendix I describe how mitigation will reduce bald eagle fatalities from exposure to toxic substances and support bald eagle rehabilitation in the plan area. The predicted take of up to 300 eagles during the 30-year permit duration will be fully offset by the applicant at the cost of \$5,340 per eagle for a total of \$1,602,000. The amount of mitigation provided is expected to fully offset the taking of bald eagles.

Finding

As described above, the Service has evaluated the results of the pre-permit studies, the operational constraints, take estimates, and the proposed minimization measures. The Service has also evaluated the applicant's mitigation plan to fully offset the remaining take that will be permitted. This is expected to result in no net loss to the covered species in the wild from the covered activities. The Service therefore concludes that the applicant has minimized and mitigated to the maximum extent practicable.

3. The applicant will ensure that adequate funding for the plan will be provided.

MEC has identified the costs to implement the HCP, including administration of the HCP, fatality monitoring and reporting, mitigation projects and land management, adaptive management, and changed circumstances. MEC has ensured that funding will be available for the implementation of the HCP in several ways. First, within one business day of the permit issuance, MEC will deposit \$4,347,000 for the covered bat species mitigation projects, \$3,796,100 to fund mitigation lands management, and \$1,602,000 for bald eagle mitigation projects into interest-earning escrow accounts. The mitigation entity will serve as the initial beneficiary for these accounts. MEC and the Service will oversee the disbursement of the funds from these accounts, per Appendix J, for the mitigation entity to conduct mitigation actions. The Service has reviewed the estimated costs per acre for the types of conservation projects proposed and found them comparable to other projects in Illinois and Iowa for which the Service has direct experience. They are also comparable to standard cost estimates for this type of work by USDA – NRCS in Illinois and Iowa. We have also reviewed the methods for bald eagle mitigation proposed in Appendix I and found those estimates to be appropriate for application in Iowa. Together, these funds are sufficient to complete all of the mitigation needed to offset the implementation take over the full permit term.

In the event that the bat implementation take rate is exceeded, MEC will implement a mitigation true-up, which will consist of depositing funds into the existing mitigation escrow accounts to fund additional mitigation actions. Mitigation true-ups will occur on a schedule that allows for mitigation projects to stay ahead of the take, per sections 5.5.1 and 6.3 of the HCP, and will fully offset any additional anticipated take above the implementation take rate. MEC has committed to depositing the full amount needed for the mitigation true-up into the standing escrow accounts within 30 days of the Decision Meeting at which the true-up was shown to be warranted. The actual cost for the mitigation true-up will be calculated on a per-acre basis at the time of the

Decision Meeting, thereby accounting for any changes in costs for restoration practices over time as well as inflation.

As described in Chapter 6 of the HCP, MEC has committed to funding the administrative costs and compliance monitoring from their annual operating budget. MEC will provide a letter to the Service annually, in conjunction with the annual monitoring report indicating that funds have been allocated for the upcoming year's administrative and fatality monitoring obligations.

MEC has committed to self-funding all aspects of the plan. Specifically, funds for plan implementation will be sourced from MEC's sources of liquidity, as described in Chapter 6.1, and/or their credit facility. MEC currently carries \$1.305 billion in credit facilities, and intends to have comparable credit facilities available throughout the permit term. If at any time, MEC's credit rating falls below the benchmarks identified in section 6.2 of the HCP, MEC will deposit cash into an escrow or secure a letter of credit in a form acceptable to the Service, within 30 days of the downgrade. MEC has also provided a signed Indemnity Agreement, further indicating their commitment to pay for their obligations under the HCP.

MEC has demonstrated to the Service that they have the financial ability and stability to fully fund their obligations under the HCP. Using 30 CFR 800.23 (self-bonding criteria for the Office of Surface Mining) as a guide, MEC has provided documentation to support the determination that they; a) are a long-standing entity (active for >5 years), b) exceed a credit rating of A by Moody's or S&P's, and c) exceed the requirements for net worth, asset to debt ratio, and fixed assets. They have also provided recent financial statements including a report prepared by an independent certified public accountant to further support their financial solvency.

The Service finds that the funding assurances, as described above and in the HCP, are wholly sufficient to fulfill MEC's obligations under the HCP. MEC has not only fully funded the plan up-front, but has also provided three layers of fail-safe mechanisms to ensure that funds will be available for all aspects of HCP implementation.

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

The Service finds that the taking to be authorized under the proposed Permit will not appreciably reduce the likelihood of the survival and recovery of the Covered Species in the wild. The legislative history of the ESA establishes the intent of Congress that this issuance criterion be identical to a finding of "no jeopardy" pursuant to section 7(a)(2) of the ESA and the implementing regulations pertaining thereto (50 CFR 402). As a result, the Service has reviewed the HCP under section 7 of the ESA. In the Biological Opinion, which is incorporated herein by reference, the Service has concluded that the issuance of the proposed Permit is not likely to jeopardize the continued existence of the covered bat species. Our conclusion is based on the results of the effects analysis therein that indicate the project is not likely to impact the fitness of the covered bat populations in Iowa. Therefore, we conclude that it is unlikely that the proposed project will cause appreciable reductions in the likelihood of survival and recovery of the covered bat species within the plan area, state, or the range-wide population.

After substantial increases in the bald eagle population, the Service removed this species from protection under the Endangered Species Act on August 8, 2007. In 2016, the Service published a report titled *Population demographics and estimation of sustainable take in the United States, 2016 update*. This report describes a framework for sustainable take of bald eagles under the LAP and EMU scales. An annual take of up to 6% of the total eagle population in the Mississippi Flyway EMU (also referred to as the Great Lakes EMU in the publication) is considered sustainable for this species. This annual take limit at this percent in the Mississippi Flyway EMU is currently 1,640 bald eagles per year. At present, total authorized take of bald eagles in the Mississippi Flyway EMU is 87.12 eagles per year (see Appendix D of the Biological Opinion). Combined with the take authorized under this permit, the total authorized take would be 97.12 eagles per year. At the LAP scale, a take of up to 5% is considered to be sustainable for bald eagles. The annual take of 10 bald eagles being permitted represents 0.24% of the LAP (see Appendix C of the Biological Opinion.). Therefore, at the EMU and LAP scales, a take of 10 eagles for this permit will be sustainable for the survival of bald eagles in the wild. Furthermore, this take will be fully offset by the mitigation implemented under the HCP. We therefore find that the authorization of the take under the permit will not jeopardize the survival of the species in the wild, and meets the BGEPA preservation standard of “maintaining stable or increasing breeding populations.”

5. Other measures, as required by the Secretary, as necessary or appropriate for purposes of the plan will be met.

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

V. ISSUANCE CRITERIA FOR BALD EAGLE INCIDENTAL TAKE UNDER BGEPA

50 CFR 22.11 provides for the inclusion of bald and golden eagles into ESA incidental take permits, provided that issuance criteria for that ESA permit are met, and with the provision that the activity is compatible with the preservation of the bald and/or golden eagle. The May 10, 2011, Director’s Memo provides additional clarification for permitting incidental taking of eagles under ESA sections 10(a)(1)(A) and 10(a)(1)(B), and directs the Service to ensure that BGEPA permitting standards are met. Therefore, the following presents the Service’s finding that the issuance criteria for incidental taking under BGEPA (50 CFR 22.26(f)) have been met.

1. The direct and indirect effects of the take and required mitigation, together with the cumulative effects of other permitted take and additional factors affecting the eagle populations within the eagle management unit and the local area population, are compatible with the preservation of bald eagles and golden eagles.

The Service finds that the actions under the HCP are compatible with the preservation of the bald eagle. A discussion of the impact of the taking in the context of cumulative effects and other factors are provided under ESA issuance criteria number four, above.

2. The taking is necessary to protect an interest in a particular locality.

The applicant is a rate-regulated public utility that serves > 770,000 electrical customers across its service territory. The applicant derives a substantial portion of its electrical generation from the wind projects covered by the HCP, which have an installed capacity of 4,040 MW. The spinning of turbine blades during the generation of electricity is the cause of incidental take of bald eagles for which a permit is being sought. Avoidance of bald eagle take would constitute the shutting down of turbines across the covered projects. Shutting down turbines is in direct conflict with the applicant's purpose for the activity, electricity production. Thus, we find that electrical generation to meet the applicant's obligations and purpose as a public utility provider is a legitimate interest, and the taking is necessary to protect this interest.

3. The taking is associated with, but not the purpose of, the activity.

As described in the discussion of ESA issuance criteria 1, above, the taking of the bald eagle is incidental to the operation of the covered wind energy projects.

4. The applicant has applied all appropriate and practicable avoidance and minimization measures to reduce impacts to eagles.

As described in the discussion of ESA issuance criteria 2, above, the applicant has committed to a program to remove wildlife and livestock carrion near access roads and turbines within their wind facilities. They have also developed a program to educate landowners within wind projects regarding the carrion removal program and the importance of reducing eagle scavenging opportunities near wind farms. While eagle use was found to be different among projects, fatality studies done parallel to the section 6 bat studies mentioned above, showed there was no discernable pattern to the eagle fatalities detected at the projects. Therefore, we find that these two activities represent the most practicable avoidance and minimization measures that can currently be applied across these projects. Advanced eagle detection and turbine shut-down technologies are not yet commercially available for deployment at the scale of the project. Trained observer alert systems are also not practicable to deploy at the multi-project level. The use of these technologies, however, is provided for in the adaptive management plan. Thus we find that the applicant has applied all appropriate and practicable avoidance and minimization measures to reduce impacts to bald eagles.

5. The applicant has applied all appropriate and practicable compensatory mitigation measures, when required, pursuant to paragraph (c) of this section, to compensate for remaining unavoidable impacts after all appropriate and practicable avoidance and minimization measures have been applied.

As described in the discussion of ESA issuance criteria 2, above, the applicant has planned to fully mitigate for the taking of the permitted number of eagles (10 per year, 300 over the life of the project.) Section 5.3.3 and Appendix I of the HCP describes the methods and costs of the proposed mitigation. The Technical Review Team, which will include the Service, will be in charge of selecting the specific projects that the mitigation entity will then implement. We therefore find that the applicant has applied all appropriate and practicable mitigation measures.

6. Issuance of the permit will not preclude issuance of another permit necessary to protect an interest of higher priority as set forth in paragraph (e)(7) of this section.

The annual sustainable take limit in the Mississippi Flyway EMU is currently 1,640 bald eagles per year, and the currently permitted take number is 87.12 bald eagles per year. Likewise, MEC's requested take constitutes 0.24% of the allowed 5% of the LAP of bald eagles. MidAmerican has requested take of 10 bald eagles per year, and has also provided for mitigation to fully offset this taking. The issuance of this permit, therefore, does not preclude the issuance of another permit in the LAP or EMU because the taking would not exceed take thresholds or preclude any other project from receiving a permit.

7. Issuance of the permit will not interfere with an ongoing civil or criminal action concerning unpermitted past eagle take at the project.

The applicant has been working closely and consistently with the Service toward the pursuit of incidental take authorization since their first fatality was recorded at a wind facility. There are no open investigations into past unpermitted take at the covered projects, and the Department of Justice (DOJ) has provided the Service a letter of declination, indicating that the DOJ would decline to prosecute based on the current available information. There are no other ongoing civil or criminal actions concerning unpermitted past eagle take at the project. Therefore, this issuance criteria is met.

VI. GENERAL CRITERIA AND DISQUALIFYING FACTORS

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

VII. RECOMMENDATION ON PERMIT ISSUANCE

Based on these findings with respect to the proposed action, I recommend approval of the issuance of Permit number TE41434D-0 to MidAmerican Energy Company, authorizing incidental taking of the Indiana bat, northern long-eared bat, little brown bat, tricolored bat, and bald eagle, in accordance with the HCP.

Christopher P. Jensen

Acting Deputy Regional Director, Region 3

11/15/2019

Date