

FINDINGS AND RECOMMENDATIONS  
FOR ISSUANCE OF SECTION 10(a)(1)(B) INCIDENTAL TAKE PERMIT  
ASSOCIATED WITH THE MISSOURI DEPARTMENT OF  
CONSERVATION’S HABITAT CONSERVATION PLAN

*(Habitat conservation plan for gray bat, Indiana bat, northern long-eared bat, little brown bat  
and tricolored bat across the state of Missouri)*

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## 1.0 Introduction and Background

The U.S. Fish and Wildlife Service (Service) proposes to issue an Incidental Take Permit (ITP) for 50 years for the implementation of the Habitat Conservation Plan for Bats from the State of Missouri (HCP). The purpose of the ITP is to authorize the incidental take of the Covered Species associated with HCP implementation. Take would be authorized for Covered Species, including the gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), little brown bat (*Myotis lucifugus*), and tricolored bat (*Perimyotis subflavus*). Take authorization for the little brown bat and tricolored bat will go into effect if the species become listed in the future. The Service is authorized to complete this action under the authority of section 10(a)(1)(B) and section 10(a)(2) of the Endangered Species Act of 1973, as amended (ESA; 16 United States Code [USC] §§1531-1544) .

The Service received the proposed HCP and application from the Permittee (The Missouri Department of Conservation (MDC)) in September 2021. The proposed application and HCP met the application requirements put forth by 50 CFR 17.22(b)(1), 50 CFR17.32(b)(1), and 50 CFR 13.12. The requested ITP is to be issued to the Permittee, who owns and manages more than 1 million acres of lands in Missouri.

The Service involved the public by making a Notice of Availability for the draft HCP and draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) available for review and comment. These documents were published in the Federal Register on September 15, 2021 (FWS-R3-ES-2021-0062). Public comments were accepted during a 30-day period following publication of the Notice of Availability. Both documents were available through the Regulations.gov website, and paper copies were available upon request.

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

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

## 1.1 Description of the Proposed Action

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

The primary goal of the HCP is to manage habitat and public access on lands across the state of Missouri, called Covered Activities, as administered by MDC. Covered activities have been grouped into three major categories: habitat management, public access and asset management, and HCP implementation. The Plan Area for the HCP is defined as the entire state of Missouri and includes areas where conservation activities occur with which MDC is directly involved. The Covered Lands are areas within the Plan Area where incidental take of Covered Species is anticipated to occur. The Covered Lands consist of approximately 42 million acres segregated into two categories:

- Lands owned or managed by MDC.
- Other non-federal, non-MDC lands where MDC financially supports or provides technical assistance to private landowners to manage fish, forest, and wildlife resources.

The 42 million acres of Covered Lands consist of 15.7 million acres of forested land that provides potential habitat for the Covered Species. This forested land includes approximately 178,000 acres of land leased to and managed by MDC on behalf of the United States Army Corps of Engineers (USACE). Covered Activities under the HCP are the activities that result in incidental take, and include MDC's habitat management, public access and asset management, and HCP implementation. The MDC manages land for the purpose of promoting fish and wildlife habitat, enhancing and maintaining forest health, and providing recreational opportunities.

The requested permit term is 50 years. Shorter permit terms were considered but ultimately rejected, as they do not allow for a sufficient assessment of the impacts of the proposed forest management activities on Covered Species. The full duration of harvest treatments can take more than 50 years and as a result, the habitat benefits resulting from long-duration harvest treatments may not be fully evident during a shorter permit term.

## 1.2 Covered Species

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

## 1.3 Types of Covered Activities

Covered activities are grouped into three major categories: habitat management, public access and asset management, and HCP implementation. Habitat management activities include prescribed fire and tree removal. Prescribed fire is an important forest management practice conducted for the purpose of enhancing and maintaining wildlife habitat and improving recreational and hunting opportunities. Prescribed fire also creates roost trees and foraging habitat for bats. Tree removal ultimately accomplishes two major management objectives: namely, opening the canopy to allow new trees to grow and managing existing habitat to improve the quality of the timber and/or wildlife habitat within the stand. Public access and asset management activities are necessary to maintain infrastructure (e.g., buildings, roads) needed to administer MDC lands and to allow for public access. Take can occur as a result of tree removal during construction, maintenance, and repair of facilities, vehicle operation, and demolition of structures. Implementation of the HCP conservation strategy may result in incidental take during monitoring (e.g., result of direct handling of bats).

## 1.4 Alternatives to the Taking

The Service considered but dismissed six alternatives (see EA Section 2.3 for details): (1) Shorter Permit Term; (2) Additional Covered Species; (3) Retain Current Indiana Bat and Northern Long-Eared Bat Buffer Zones; (4) Reduced Prescribed Burns; (5) Indiana Bat Only; and (6) No Take. The six-alternatives the Service dismissed are summarized as followed:

- **Shorter Permit Term:** The Service would issue an ITP covering a 30-year permit term with the implementation of the proposed HCP. A 30-year permit term would provide long-term incidental take coverage for the Covered Activities, except for some forestry treatments that occur over longer time horizons. However, a 30-year permit term does not allow for a sufficient assessment of the impacts of the proposed forest management activities on Covered Species. The full duration of harvest treatments can take more than 50 years and as a result, the habitat benefits resulting from long-duration harvest treatments may not be fully evident during a 30-

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year permit term.

- **Additional Covered Species:** The Service considered covering additional species in the HCP. Several other federally listed species occur or potentially occur in the Plan Area. MDC has not proposed these species as Covered Species in the HCP because incidental take of these species from the Covered Activities is not anticipated.
- **Retain Current Indiana Bat and Northern Long-Eared Bat Buffer Zones:** MDC would avoid the incidental take of Indiana and northern long-eared bats by precluding or minimizing forest management activities around known roost locations during the active season. Currently, MDC avoids take of these bats by precluding or minimizing forest management activities around known roost locations during the active season. Avoidance areas are established by creating buffer zones around known roost trees. Avoiding forest management activities within buffer areas minimizes flexibility and creates uncertainty for MDC. In addition, the buffer zones do not provide protection for little brown and tricolored bats.
- **Reduced Prescribed Burns:** Incidental take would be minimized by reducing or removing the prescribed burning practice. Removal of prescribed fire as a Covered Activity would require MDC to rely only on tree-cutting method to manage forest ecosystems. However, prescribed burns have ecosystem benefit, especially for bats. Fire kills smaller trees leaving larger more mature trees that provide habitat for bats. Finally, prescribed fire may kill trees, but those dead trees remain on the landscape as snags and continue to provide habitat for bats. Fire has been documented to create roost trees for bats and improve habitat in many instances. Covering the full suite of MDC habitat management activities at the preferred extent and frequency would allow managers to better enhance forest conditions for bats. The flexibility in timing of prescribed burning proposed in the HCP would allow MDC to take advantage of favorable environmental conditions and opportunistic burns.
- **Indiana Bat Only:** Under the Indiana Bat Only alternative, the northern long-eared bat would be managed in accordance with the existing ESA 4(d) rule, which does not prohibit incidental take in certain circumstances. The Plan Area and Covered Lands, Covered Activities, conservation strategies, and monitoring protocol would apply to the Indiana bat as set forth in HCP, and an ITP would be issued only for Indiana bat. Managing take for the northern long-eared bat from the Covered Activities under the 4(d) rule would reduce certainty for MDC should the listing status of the northern long-eared bat change from threatened to endangered.
- **No Take:** MDC would not engage in forest management activities that result in the take of Covered Species, thereby removing the need for an incidental take permit from the Service. Forest management activities are necessary for MDC to meet its required mandates, and because Covered Activities are necessary, take of the Covered Species can be minimized but

not entirely avoided.

## 1.5 Conservation Strategy

The purpose of the HCP is to avoid, minimize, and mitigate effects to the Covered Species. The conservation strategy for the MDC Bat HCP is designed to fully offset impacts from Covered Activities on covered bats through avoidance, minimization, and mitigation as defined in biological goals, objectives, and conservation measures (Chapter 5 of the HCP). The conservation strategy focuses on minimizing negative effects on bats and bat habitat from forest management, initiating beneficial actions, and mitigating for unavoidable impacts. It is built on biological goals and objectives and their associated conservation measures.

### 1.5.1 Incidental Take Avoidance and Minimization and Mitigation Measures

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

*Avoidance and minimization:* The MDC Bat HCP incorporates a wide array of avoidance and minimization measure including:

- Protective buffers (150 feet) around all known roosts on MDC lands.
- Implementation of retention guidelines that limit potential for taking an occupied roost and provide long-term habitat for bats
- Implementation of a 10-mile buffer around Sodalis Nature Preserves that avoids approximately 40% of estimated impacts on Indiana bat.
- Implementation of seasonal avoidance within 5 miles of the seven Priority 1 and Priority 2 hibernacula on MDC lands.
- Protection and management of 20 acres around all caves on MDC land including 19 known Indiana bat hibernacula.

*Mitigation:* Mitigation activities will have beneficial effects to Covered Species during migration and as summer roosting habitat. Mitigation efforts include:

- Protection and management of 700,000 acres of forests, woodlands, and glades that cannot be developed.
- Protection and management of 200,000 acres of open habitats that cannot be developed.

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- Habitat management on MDC that maintains and improves habitat for bats, including:

Bat Species	Management on preferred fall/spring habitat owned by MDC	Management on preferred summer habitat owned by MDC	Management on preferred fall/spring habitat owned by nonfederal cooperators	Management on preferred summer habitat owned by nonfederal cooperators
Indiana Bat	6,800	38,750	1,200	18,270
Northern Long-Eared Bat	9,560	44,360	2,150	20,400
Little Brown Bat	9,200	44,000	2,400	20,000
Tricolored Bat	10,600	44,000	2,300	20,000

- Creation of 28,000 acres of Priority Bat Management Zones (PBMZ) around areas of known or suspected occupancy for Indiana, little brown, northern long-eared, and tricolored bats. Within these areas MDC will apply seasonal avoidance to limit potential take and apply positive management to generate improved habitat in areas of known occupancy.
- Outreach, extension, white nose syndrome (WNS) research, and training associated with all Covered Species.

A full description of conservation strategies can be found in Chapter 5 of the HCP.

### 1.5.2 Monitoring, Reporting, and Notification

Two distinct types of monitoring will be conducted during the implementation of the HCP.

*Compliance Monitoring* tracks the status of the HCP implementation and documents that requirements of the HCP are met. In other words, compliance monitoring verifies that MDC is implementing the terms of the HCP, incidental take permits, and the authorized level of incidental take. Management activities associated with conservation strategy actions will be documented to demonstrate that the HCP and the required commitments of the conservation strategy are being properly implemented. Documentation of compliance monitoring will be included in an annual report submitted to the Service.

*Effectiveness Monitoring* assesses the biological success of the HCP. Effectiveness monitoring evaluates whether the effects of implementing the conservation strategy are consistent with the assumptions and predictions made when the HCP was developed and approved. Effectiveness monitoring is used to determine if the biological goals and objectives in the HCP are being realized. Effectiveness monitoring has two components: monitoring effects of conservation measures and monitoring the status and trends of the covered bat populations and habitat. Because of the uncertain future of bats affected by WNS, most of the effectiveness monitoring will focus on habitat quality (e.g., number and quality of roosts) with the goal of providing high-quality habitat should the species begin to recover.

Further details for monitoring are elaborated in Chapter 5 of the HCP.

### 1.5.3 Unforeseen and Changed Circumstances

HCP assurances ('No Surprises'), described in 63 FR 8859, provides a foundation for contingency planning in an HCP. The contingency planning is addressed by identifying potential unforeseen and changed circumstances and the appropriate response to these events. Unforeseen circumstances mean changes in circumstances that could not be anticipated or planned for, that result in a substantial and adverse change in the status of a Covered Species. Changed circumstances are those changes that can be reasonably anticipated or planned for. Should they occur, the process for responding to them in 50 CFR 17.32(a)(5) or 17.22(a)(5) will be followed.

The HCP identifies the following as foreseeable changed circumstances warranting planning consideration: 1) Listing of additional species not covered by the HCP; 2) Dramatic effects to Covered Species as a result of WNS; 3) Changes in the prevalence and distribution of wildfires in MO; 4) Altered conditions for the Covered Species as a result of climate change; 5) Changes in forest composition across the state from forest pests, diseases, and invasive plant species; and 6) Delisting of a Covered Species. Each of these potential changed circumstances are addressed in the HCP, along with descriptions of triggers that will indicate the circumstances have occurred and responses that can be implemented and measured for effectiveness (see HCP Section 6.3.2).

## 2.0 Analysis of Effects

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

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

- Avoidance and Minimization: The HCP incorporates a diverse array of avoidance and minimization measures designed to limit the impacts to Covered Species including seasonal avoidance measures designed to limit the impact of timber harvest and prescribed fire during the most sensitive times of the year for Covered Species, specialized training for state and private foresters and landowners, and enhanced retention of potential roost trees.
- Analysis of Impacts: The impact of the take was analyzed using a hierarchical framework including the following steps: 1) effects to individuals; 2) effects to maternity colonies and hibernating populations; 3) effects to the OCRU (for Indiana bat) and the Missouri population (for gray, northern long-eared bat, little brown bat, and tricolored bat as there



are no established recovery units for these species); and 4) effects to the range-wide population. Up to 5 gray bats, 1,700 Indiana bats, 1 northern long-eared bat, 6 little brown bats, and 92 tricolored bats may be taken as the result of habitat management and other Covered Activities during the 50-year permit term. Because of the difficulty in monitoring effects at the individual organism level, take will be accounted for in acres managed by MDC on an annual basis. In the analysis we included the impact of the take and did not consider the offset of mitigation through the conservation measures. We concluded that take from the project does not cause an appreciable difference in the fitness of the hibernating or State populations of Covered Species. Therefore, we concluded it is unlikely the project will cause reductions in the likelihood of survival and recovery of Covered Species within the State, recovery unit or range-wide population.

- Conservation Measures: Conservation measures enacted through the HCP are extensive and wide ranging across the landscape and mitigate for impacts from the Covered Activities across the full lifecycle of the Covered Species. Of particular importance are the seasonal management restrictions put in place around Sodalis Nature Preserve in Hannibal, MO, the creation of year-round old growth management zones at all known and potential hibernacula, known roost tree retention in harvest plans, and the creation of more than 28,000 acres of preferred maternity habitat through the adaptive PBMZ process among others.

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

In accordance with the National Environmental Policy Act, the Draft Environmental Assessment (EA) was circulated for public review and comment on September 15, 2021. Concurrently, the Draft Habitat Conservation Plan (HCP) was also published for public review and comment. The public review period was initiated with the publication of the Notice of Availability in the Federal Register (86 FR 51367), and the 30-day public comment period ended on October 15, 2021. Four comments were received from the public and taken into account in assessing the Proposed Action impacts. Responses to comments on the Draft EA and Draft HCP can be found in Appendix D of the Final EA and are incorporated herein by reference.

### 4.0 Incidental Take Permit Criteria- Analysis and Findings

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

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1. *The take will be incidental;*

The Service finds the taking of Covered Species under the HCP will be incidental to otherwise lawful activities. The activities for which incidental take coverage are sought under the ITP is the implementation of the Covered Activities including habitat management and public access management across the state of Missouri. Any take of Covered Species associated with these Covered Activities will be incidental to, and not the purpose of, this lawful activity.

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

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

- a) Identification and implementation of incidental take avoidance and minimization measures to reduce impacts to the Covered Species (summarized above in 1.5, and detailed in Chapter 5 of the HCP);
- b) Implementation of conservation measures enacted through the HCP across the landscape which mitigate for impacts from the Covered Activities across the full lifecycle of the Covered Species. Of particular importance are the seasonal management restrictions put in place around Sodalis Nature Preserve in Hannibal, MO, the creation of old growth management zones at all known and potential hibernacula, known roost tree retention in harvest plans, and the creation of more than 28,000 acres of preferred maternity habitat through the adaptive PBMZ process among others (summarized above in 1.5, and detailed in Chapter 5 of the HCP);
- c) Establishment of monitoring, adaptive management, and reporting strategies to document take limit compliance, adjust management activities based on effectiveness of minimization, and notification to the Service (summarized above in 1.5, and detailed in Chapters 5, 6, and 7 of the HCP).

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

The Permittee assures funding for the conservation strategy, and all obligations under the HCP, using funding derived from the Missouri Conservation Sales Tax, hunting and

fishing permit sales, and federal reimbursement. Most of MDC's funding is set by state law, therefore budget deficits are not foreseen. HCP commitments will be reflected in the dedication of staff resources through MDC's annual budget, adjusted for inflation, and documented in the HCP annual report. (HCP Chapter 7).

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

This criterion incorporates the ESA Section 7 jeopardy standard, which is defined at 50 CFR 402.02: "Jeopardize the continued existence of means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers or distribution of that species." In accordance with section 7 of the ESA, the Service prepared an intra-agency biological and conference opinion to evaluate whether the taking associated with the HCP would jeopardize the continued existence of any Covered Species. In the biological opinion, which we have attached and incorporated into this document by reference, the Service concluded that the proposed incidental take of the Covered Species is not likely to jeopardize the continued existence of these species.

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

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

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

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

## 5.0 General Criteria and Disqualifying Factors- Findings

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

## 6.0 Recommendation on Permit Issuance

Based on the foregoing findings with respect to the proposed action, I recommend approval of a

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permit to the Missouri Department of Conservation for the incidental take of gray bat, Indiana bat, northern long-eared bat, little brown bat, and tricolored bat in accordance with the HCP, and the biological and conference opinion.

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

## 7.0 Supporting Materials

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