INDIANA DEPARTMENT OF TRANSPORTATION

Protected Species Guidance








INDOT
Environmental Services Division
100 North Senate Avenue, Room N758-ES
Indianapolis, IN 46204

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Top Left Photo: Northern Long-eared Bat
Source: https://digitalmedia.fws.gov/digital/api/singleitem/image/natdiglib/25277/default.jpg
Top Center Photo: Indiana Bats
Source: https://www.fws.gov/sites/default/files/2020-12/indianabat-annfroschauer-flickr.jpg
Top Right Photo: Tricolored Bat
Source: https://www.batcon.org/bats-in-winter/
Bottom Left Photo: Marsh Wren
Source: https://www.allaboutbirds.org/guide/Marsh_Wren/photo-gallery/68035321
Bottom Center Photo: Northern Riffleshell
Source: https://ecos.fws.gov/ecp/species/527
Bottom Right Photo: Kirtland's Snake
Source: https://inherpatlas.org/thumb/400x300/1231.jpg

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Chapter 1. Introduction

This document provides guidance for activities associated with protected species compliance such as individual coordination for species in the project area identified in IPaC and compliance with other federal laws.

The focus of Part I is Endangered Species Act (ESA) compliance and the tools available to assist with that effort. It includes an overview of U.S. Fish and Wildlife Service (USFWS) consultation under the ESA, terminology related to the ESA, FHWA, FTA, and FRA Rangewide Programmatic Consultation/ Conference for the IBAT, NLEB and TCB.

Part II is focused on compliance with the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA), and coordination for other species.

Part III provides compliance tools for bats to include bridge, culvert, pipe, and structure inspections, guano collection and analysis, active bat season tree removal/trimming, bat habitat mitigation, and frequently asked questions.

Part IV provides guidance for NEPA, commitments, and resolutions.

Additional resources are included in the appendixes.

Part I. Endangered Species Act Section 7 Compliance

Chapter 2. USFWS Consultation under the ESA

The purpose of the Endangered Species Act (ESA) of 1973 (as amended) is to provide a means whereby the ecosystems upon which federally endangered and threatened species depend may be preserved and provide a program for the conservation of endangered and threatened species. (16 U.S.C. § 1531 (b)) Section 7 of the ESA describes the responsibilities of federal action agencies and the consultation process. (16 U.S.C. § 1536) The Federal Highway Administration (FHWA) and the U.S. Army Corps of Engineers (USACE) are the two main federal action agencies associated with INDOT projects. For projects that are federally funded the FHWA will be the federal action agency. USACE must confirm FHWA compliance with Section 7 prior to issuing a 404 permit. For state funded projects that require USACE permits, USACE is the federal action agency. The process outlined in this guidance implements the interagency cooperation requirements of the ESA.

Projects with no federal nexus are not subject to the ESA section 7(a)(2) consultation requirements but are subject to Section 9 take prohibitions. If non-federal actions are reasonably certain to cause incidental take, the project proponent can apply for a Section 10 incidental take permit. (Standing Analysis 7)

The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) is a project planning tool that streamlines the USFWS environmental review process. It is designed to improve the Section 7 consultation process and improve regulatory consistency, predictability, transparency, and conservation outcomes. IPaC can provide species, critical habitat, migratory birds, or other natural resources information that can be impacted by a project. It also provides an ESA review and facilitates the consultation process.

Section 7 of the ESA establishes interagency cooperation to protect endangered and threatened species and their critical habitats. Section 7(a)(1) requires all federal agencies to carry out programs for the conservation of listed species, and section 7(a)(2) requires the agencies to ensure their activities are not likely to jeopardize the continued existence of federally listed species or destroy or adversely modify designated critical habitat. If a project is likely to adversely affect a species formal consultation is required. Section 7 of the ESA applies to all federal agencies and covers actions they fund, authorize, permit, or carry out in which there is discretionary federal involvement or control. https://www.fws.gov/services/consultation-and-technical-assistance/esa-section-7-consultation

Section 7 consultation can result in formal or informal consultation and may vary for the species present in the project area. Informal consultation is an unstructured approach to meeting Section 7 requirements. It is used for most consultations. It involves phone contacts, meetings, conversations, letters, and project modifications and concurrences. The action agency must submit a biological assessment (BA) within 180 calendar days

of receipt of a species list from USFWS. USFWS has 30 days to respond to the BA. Informal consultation ends with USFWS concurrence that the project is Not Likely to Adversely Affect (NLAA) listed species or critical habitat. All the reasonably expected effects of the proposed action must be beneficial, insignificant, or discountable. A project that is determined to Likely to Adversely Affect (LAA) listed species must go through the formal consultation process. Formal consultation is used to determine whether a proposed Federal action is likely to jeopardize the continued existence of a listed species or destroy or adversely modify designated critical habitat. It includes the preparation of a biological assessment (BA) prepared by the project proponent and is concluded with the issuance of Biological Opinion (BO) and an incidental take statement by the USFWS. (50 CFR §402.02, 50 CFR §402.14) The standard timeframe for formal consultation is 135 days.

The conservation measures developed in the BA become project commitments. The terminology used in the commitment should be translated from the USFWS definitions, i.e. bridge, culvert, and structure to the INDOT definitions as used in INDOT Standard Specifications.

The Programmatic Biological Opinion/Conference Opinion for Transportation Projects in the Range of the Indiana Bat, Northern Long-Eared Bat, and Tri-colored Bat is a program under Section 7(a)(1) that provides a framework for compliance with Section 7(a)(2). The consultation applies to projects conducted by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and the Federal Transportation Administration (FTA). The consultation provides a consistent, streamlined process for ESA consultation for projects that may affect the Indiana Bat (IBAT) Northern Long-Eared bat (NLEB), or the Tricolored bat (TCB); avoid and minimize impacts to the IBAT, NLEB, and TCB; and provide compensatory mitigation for unavoidable impacts to the IBAT and NLEB. (Programmatic BO/CO) Informal consultation includes coordination under the Programmatic Biological Opinion (BO)/Conference Opinion (CO) (by completing IPaC) and includes all discussions and correspondence required to determine whether the proposed Federal action may affect a listed species or critical habitat. (50 CFR §402.02, 50 CFR §402.13)

If the federal action has No Effect (NE) on a listed species or designated critical habitat no Section 7 consultation is required. If the action May Affect a listed species or critical habitat two consultation types are possible. Informal consultation is completed when the action May Affect but is Not Likely to Adversely Affect, a listed species or critical habitat. Formal consultation is required when the action May Affect but is Likely to Adversely Affect a listed species or critical habitat.

Section 7 consultation starts with uploading project information into IPaC, which will provide species, critical habitat, migratory birds, and other natural resources information for the project area. This information will determine the type(s) of consultation and tools required. IPaC also provides a variety of determination keys (Dkey) to help streamline the consultation process. The FHWA, FRA, and FTA Section 7 Range-wide Consultation for Indiana Bat, Northern Long-eared Bat, and Tricolored Bat established

the primary Dkey used in IPaC for transportation projects in Indiana. There is also an Indiana Endangered Species Transportation Determination Key under development to simplify coordination in Indiana for non-bat species. Species not covered under a key will require separate consultation. The IPaC Dkey responses will result in a determination that the project has no effect with no consultation required or an analysis of the likelihood of adverse effects. IPaC will generate a letter initiating informal consultation and concurrence from USFWS when no adverse effects are likely. If adverse effects are likely the formal consultation process must be initiated.



Figure 2.1 Section 7 consultation process
https://www.fisheries.noaa.gov/insight/section-7-types-endangered-species-act-consultations-greater-atlantic-region

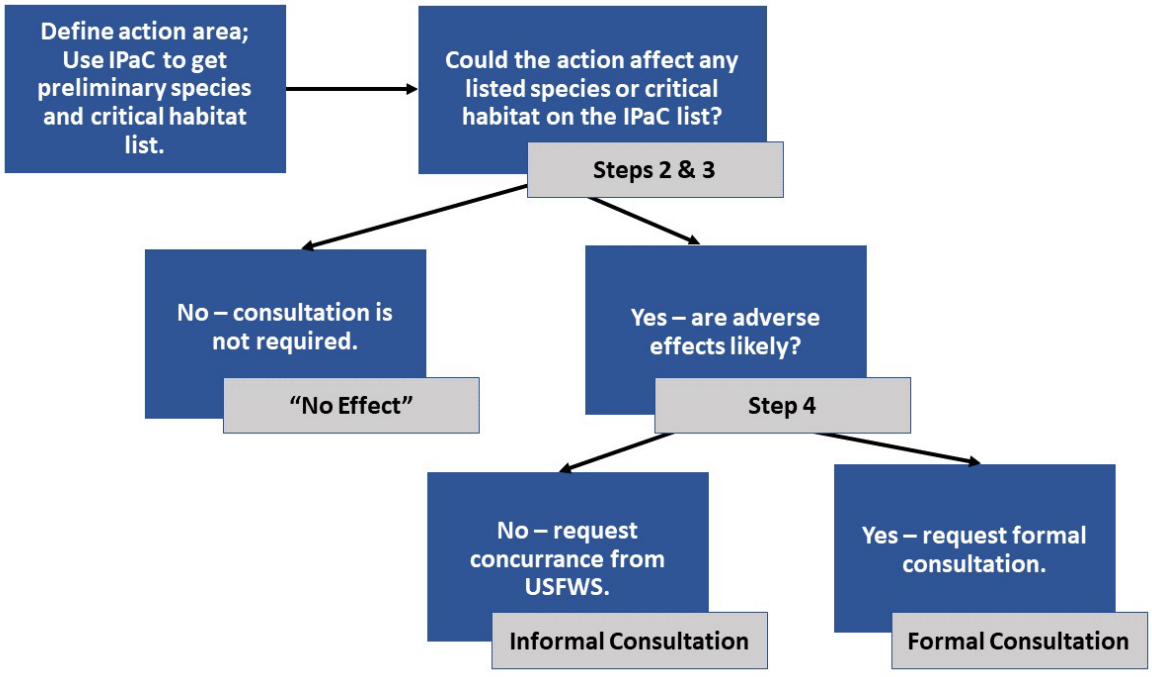


Figure 2.2 Section 7 consultation process flow chart
https://www.fws.gov/media/section-7-consultation-process-flow-chart

Chapter 3. Section 7 Terminology

3.1 Action

Action - All activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. Examples include, but are not limited to:
(a) actions intended to conserve listed species or their habitat
(b) the promulgation of regulations
(c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid, or
(d) actions directly or indirectly causing modifications to the land, water, or air.
(50 CFR §402.02)

Interdependent Actions – Actions having no independent utility apart from the proposed action. (50 CFR §402.02)

Interrelated Actions – Actions that are a part of the larger action and depend on the larger action for their justification. (50 CFR §402.02)

3.2 Action Area

All areas that will be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. (50 CFR §402.02, Programmatic BO/CO ix, User's Guide PBO/CO App A 1)

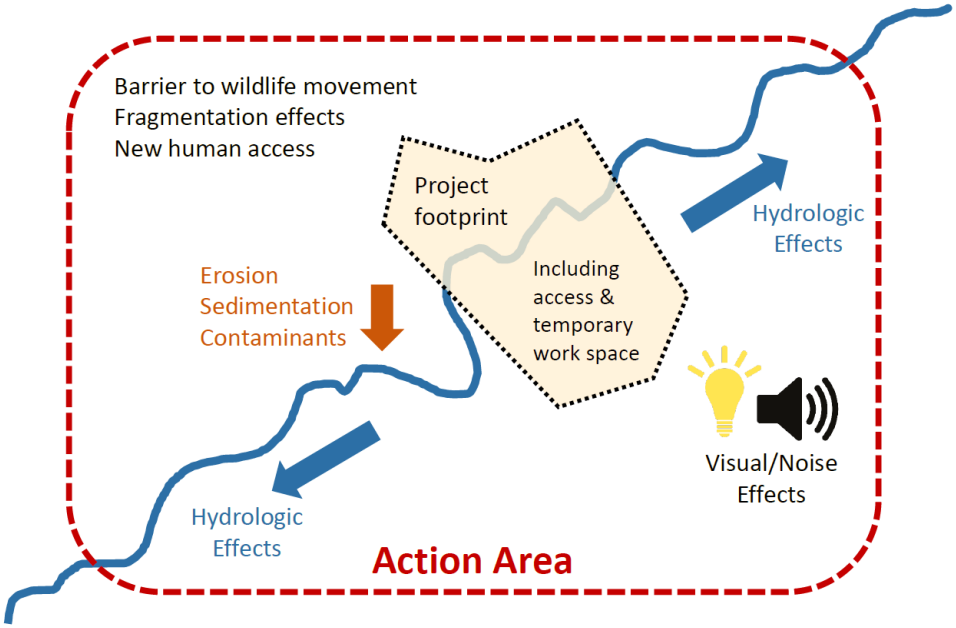


Figure 3.1 Action area
Source: https://www.fws.gov/media/action-area-diagram

3.3 Active Season

The period outside of the hibernation season when bats are active on the landscape. User's Guide PBO/CO For Indiana, the active season is from April 1 through November 15. The active season includes:

Spring staging – The timeframe when bats are present on their summer home range. For Indiana the spring staging season is April 1 through May 14.
Summer occupancy – The timeframe when bats are present on their summer home range and/or roosting in colonies. For Indiana the summer occupancy season is April 1 through September 30.
Pup season – The time from during late pregnancy and when most young are born until they can fly and forage independently. The pup season for Indiana is May 15 through July 31.
Fall swarming – Period of increased activity near hibernacula (including foraging, roosting in trees, and mating) prior to hibernation. For Indiana the fall swarming is August 15 through November 15. (2026 Survey Guidelines A2)

3.4 Affect/Effect

To affect (a verb) is to bring about a change. For example, "may affect" or "not likely to adversely affect." The effect (usually a noun) is the result. For example, "the direct and indirect effects of an action."

Cumulative effect – An effect of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation. (50 CFR §402.02)

Indirect effect – Those effects that are caused by or will result from the proposed action and are later in time but are still reasonably certain to occur. (50 CFR §402.02)

Is likely to adversely affect (LAA) – The appropriate finding in a biological assessment (or conclusion during informal consultation) if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not: discountable, insignificant, or beneficial. Appropriate when overall effect is beneficial, but is also likely to cause some adverse effects, or when incidental take is anticipated to occur. Determination requires the initiation of formal Section 7 consultation. (Consultation Handbook)

Is not likely to adversely affect (NLAA) – The appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. (Consultation Handbook)

Beneficial effects – Contemporaneous positive effects without any adverse effects to the species.
Discountable effects – Extremely unlikely to occur. Not able to meaningfully measure, detect, or evaluate.
Insignificant effects – Relate to the size of the impact and should never reach the scale where take occurs. (Consultation Handbook)

May affect (MA) – The appropriate conclusion when a proposed action may pose any effects on listed species or designated critical habitat. Conclusion requires the Federal action agency either initiate formal consultation or seek written concurrence from USFWS that the action "is not likely to adversely affect" a listed species. (Consultation Handbook)

No effect (NE) – The appropriate conclusion when the action agency determines its proposed action will not affect a listed species or a designated critical habitat. (Consultation Handbook)

3.5 Area of Influence

A species area of influence (AOI) is the geographic area where it is known that a species occurs or that it is reasonable to conclude that the species is expected to be present. It includes the expanded geographic area where human activities or project could potentially impact a threatened or endangered species, rather than where the species currently builds its nest or feeds. It includes areas outside of the species range if the species could be indirectly affected by activities in that area. Because species can move, and site conditions can change, the species are not guaranteed to be found on or near the project area. It is combined with the species' known or expected range to form the official species list area (SLA). IPaC checks whether the project area overlaps with the mapped SLAs. (Refined Range Maps)

3.6 Avoidance and Minimization Measures

Avoidance and minimization measures (AMMs) are guidelines that are implemented to mitigate the impact human activities and development have on species protected under the Endangered Species Act. Project specific AMMs are generated based on IPaC responses. Project sponsors implement standard measures as part of other environmental compliance processes (e.g., USACE wetland permitting), and many of these measures reduce potential effects on the covered bat species. These include wetland avoidance/minimization and compensatory mitigation; dust control; clearly delineating vegetative clearing limits; and compliance with State water quality and Federal Clean Water Act standards. (Programmatic BO/CO 38)

3.7 Biological Assessment

Information prepared by, or under the direction of, a Federal agency to determine whether a proposed action is likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of a species that are proposed for listing; or (3) adversely modify proposed critical habitat. The outcome of the biological assessment determines whether formal consultation or a conference is necessary. Biological assessments must be prepared for "major construction activities." (50 CFR §402.02)

3.8 Biological Opinion

A document that includes: (1) the opinion of the USFWS as to whether or not a Federal action is likely to jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of designated critical habitat; (2) a summary of the information on which the opinion is based; and (3) a detailed discussion of the effects of the action on listed species or designated critical habitat. (50 CFR §402.02)

Preliminary Biological Opinion – The opinion issued as a result of early consultation. (50 CFR §402.02)

3.9 Bridge, Culvert, and Structure

Bridge –

FHWA defines a bridge as a structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads. A bridge typically uses structural components and elements in the deck, superstructure and substructure (abutments and piers) to support dead and live loads. Bridges typically have an opening of more than 20 feet (measured along the centerline of the roadway) between under copings of abutments, spring lines of arches, or extreme ends of openings for multiple boxes. (2026 Survey Guidelines)

A structure, including supports, erected over a depression or an obstruction such as water, highway, or railway having a track or passageway for carrying traffic or other moving loads, and having a length measured along the center of the roadway of more than 20 ft between undercopings of abutment or extreme ends of opening for multiple boxes. (Standard Specifications 101.06)

Culvert –

FHWA defines a culvert as a structure comprised of one or more barrels or cells, beneath an embankment and designed structurally to account for soil-structure interaction. These structures are hydraulically and structurally designed to convey water, sediment, debris, and in many cases, aquatic and terrestrial organisms through roadway embankments. Culvert barrels have many sizes and

shapes and have inverts that are either integral or open, i.e., supported by spread or pile-supported footings. A culvert typically has soil materials (i.e., backfill) between the travel way (e.g., road or rail or trail) and actual culvert structure (i.e., barrel, cells). To support dead loads and live loads (e.g., cars trucks, trains, pedestrians, etc.), the culvert consists of those barrels or cells (typically concrete, metal, or plastic material), backfill, and soil bedding underneath the culvert. (2026 Survey Guidelines)

A structure not classified as a bridge which provides an opening under the roadway. (Standard Specifications 101.18)

Structure –

Buildings (i.e., non-bridge and non-culvert), including but not limited to homes, barns, or sheds slated for demolition, rest stops, welcome centers, picnic shelters, kiosks, ticket stations and platforms at rail stations, vehicle inspection pits, storage facilities, and structures at weigh stations. (User's Guide PBO/CO)

Bridges, culverts, catch basins, drop inlets, retaining walls, cribbing, manholes, end walls, buildings, sewers, service pipes, underdrains, foundation drains, and other features which may be encountered in the work and not otherwise classified herein. (Standard Specifications 101.63)

NOTE – Use "houses and bridges" in lieu of USFWS "structure." (Standard Specifications 202.06)

3.10 Conference and Consultation

Conference – A process which involves informal discussions between a Federal agency and the USFWS under section 7(a)(4) of the Act regarding the impact of an action on proposed species or proposed critical habitat and recommendations to minimize or avoid the adverse effects. (50 CFR §402.02, 50 CFR §402.10)

Early Consultation – A process requested by a Federal agency on behalf of a prospective applicant under section 7(a)(3) of the Act. (50 CFR §402.02, 50 CFR §402.11)

Formal Consultation – A process between the USFWS and the Federal agency that commences with the Federal agency's written request for consultation under section 7(a)(2) of the Act and concludes with the USFWS's issuance of the biological opinion under section 7(b)(3) of the Act. (50 CFR §402.02)

If any action may affect listed species or critical habitat, formal consultation is required, except as a result of the preparation of a biological assessment (under §402.12) or as the result of informal consultation with the USFWS (under §402.13), the Federal agency determines, with the written concurrence of the

USFWS, that the proposed action is not likely to adversely affect any listed species or critical habitat. (50 CFR §402.14)

Informal Consultation – An optional process that includes all discussions and correspondence between the USFWS and a Federal agency or designated non-Federal representative, prior to formal consultation, if required. (50 CFR §402.02)

USFWS may suggest modifications to the action that the Federal agency and any applicant could implement to avoid the likelihood of adverse effects to listed species or critical habitat. If it is determined by the Federal agency, with the written concurrence of the USFWS, that the action is not likely to adversely affect listed species or critical habitat, the consultation process is terminated, and no further action is necessary. (50 CFR §402.13)

Section 7 Interagency Cooperation – The mechanism by which Federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. (https://www.fws.gov/services/consultation-and-technical-assistance/esa-section-7-consultation)

3.11 Critical Habitat

Specific areas within the geographical area occupied by the species at the time of listing that contain physical or biological features essential to conservation of the species and that may require special management considerations or protection; and specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation. (User's Guide PBO/CO)

3.12 Documented Habitat

For a FHWA, FRA, FTA programmatic consultation. An area that has been documented to be used by the IBAT, NLEB, or TCB and is a subset of a known maternity colony home range. This subset of habitat is defined because there are different avoidance and minimization measures (AMMs) within this area for programmatic consultation. Documented habitat includes:

1. Any suitable habitat within 0.25 miles of a capture or acoustic detection location;
2. Any suitable habitat within 0.25 miles of an identified roost;
3. Any suitable habitat within 0.25 miles of roost tree/area predicated based on radio telemetry biangulation/triangulation. (User's Guide PBO/CO App A)

3.13 Forest

Canopy opening – A gap in the continuous forest cover formed by tree crowns, where sunlight reaches the forest floor.

Corridor/flyway – A three-dimensional corridor that bats use to travel within forests.

Edge – Transition area between forest and open spaces that can occur whenever there is a 30-foot break in the canopy cover. Edges create edge effects by impacting the species communities and growth of vegetation extending into the forest from the edge.

Gap – Area between intact forest areas that form small open areas. These areas are partially shaded by forest areas and natural regeneration will likely fill the gap.

Interior – Forest areas surrounded by forest edge, typically 50 to 300 feet inside from an outer edge.

Strip – A narrow area with trees to include visual buffers or forest fragments dominated by edge effects. (2026 Survey Guidelines A6-A7)

3.14 Ground Disturbance

Any activity that compacts or disturbs the ground. Ground disturbance activities include but are not limited to grading and backfilling. Activities are often performed using heavy equipment (excavators, backhoes, bulldozers, trenching and earth moving equipment, etc.) and heavy trucks (large four-wheel drive trucks, dump trucks, and tractor trailers). (User's Guide PBO/CO App A)

3.15 Hibernaculum (*pl.* Hibernacula)

A thermally stable roost used by bats for extended periods of torpor during winter. Typically, a cave, natural cave-like feature (e.g. sinkhole, fissure, talus opening, etc.), anthropogenic structure mines, tunnels, bridge, etc.). (2026 Survey Guidelines A7)

3.16 Hibernating Range

The portion of the range where the species hibernates in the winter, stages and swarms outside of hibernacula in the spring and fall and migrates to summer home ranges. (User's Guide PBO/CO App A)

3.17 Hibernation

When bats are in an extended period of torpor during winter months. The state of torpor is interrupted by brief periods of arousal when the bat's body temperatures return to normal for a few hours, at which time the animals may groom or drink water but do not typically leave the hibernaculum. (User's Guide PBO/CO App A)

3.18 Inactive Season

The period inside of the hibernation season, when bats are in a state of inactivity characterized by lower body temperature, slower breathing, and lower metabolic rate (torpor). (User's Guide PBO/CO App A 3) The inactive season for Indiana is November 16 through March 31. Tree clearing/trimming can occur in most areas of

the state (other than within the buffer of a hibernaculum) beginning October 1. (2026 Survey Guidelines A2)

3.19 Lighting

Refers to roadway, bridge, culvert, or structure lighting, and not vehicle headlights, signal lighting and/or railroad crossing signals. (Programmatic BO/CO xi) Temporary lighting includes any construction or nighttime lighting needed for the construction of the project. Temporary lighting will not stay in the project location past construction activities.

3.20 Major Construction Activity

A construction project (or other undertaking having similar physical effects) which is a major Federal action significantly affecting the quality of the human environment as referred to in the National Environmental Policy Act (NEPA, 42 U.S.C. 4332(2)(C). (Consultation Handbook xvi)

3.21 Percussives

Percussive activities from construction and maintenance that increase noise/vibration above existing background levels, include but are not limited to pile driving, rock drilling, hoe ramming, jackhammering, and blasting. (Programmatic BO/CO 109)

3.22 Qualified Biologist

A qualified biologist for activities involving the handling of bats is an individual who holds a USFWS Section 10(a)(1)(A) Recovery Permit (Federal Fish and Wildlife Permit) for federally listed bats in the state/region in which they are surveying. For qualitative analysis of acoustics, an individual that has completed one or more available bat acoustics trainings/workshops and/or able to show similar on-the-job or academic experience; furthermore, have demonstrated multiple years of experience in 1) gathering known calls of the target species, 2) have identified bat calls recorded in numerous habitat types, 3) are familiar with species likely to be encountered within the project area, and 4) must have stayed current with qualitative identification of bat calls. (2026 Summer Survey Guidelines A8)

The following bat survey, monitoring, and/or research activities that may result in take must be completed by a qualified biologist holding a valid Federal Recovery Permit and a Site-Specific Authorization:

- Handling/capturing bats with mist nest or harp traps, or other methods
- Entering hibernacula, maternity caves, or other roosts known to be occupied by bats
- Emergence surveys from trees or other roosts that may disturb bat activity

- Collecting biological samples (e.g. hair, blood, DNA)
- Temporary or permanent marking of bats (e.g. banding, pit tagging, radio tagging) (2026 Summer Survey Guidelines A10)

Assessing, Surveying, and Inspecting Bridges, Culverts, and other Structures, and Guano Collection – Surveyors are not required to be a qualified biologist. At a minimum, surveyors should view the USFWS's virtual bat and transportation structures training before conducting field assessments. See Bats and Transportation Structures for the training. (2026 Survey Guidelines 12)

Emergence Surveys - Qualified biologist, biological technicians, and any other individuals deemed qualified by a local USFWS Field Office (FO) may conduct emergence surveys for IBAT and/or NLEB (per protocol). (2026 Survey Guidelines 48)

Habitat Assessments - Completed by individuals with a natural resource degree or equivalent work experience demonstrating skills and knowledge in area-specific ecoregions, landscapes, habitats, and ecosystems. (2026 Survey Guidelines 6)

3.23 Programmatic Consultation

Consultation addressing an agency's multiple actions on a program, regional or other basis. (Consultation Handbook xvii)

3.24 Reasonable and Prudent

Reasonable and Prudent Alternatives – Recommended alternative actions identified during formal consultation that can be implemented in a manner consistent with the intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible and that the USFWS believes would avoid the likelihood of jeopardizing the continue existence of listed species or the destruction or adverse modification of designated critical habitat. (50 CFR §402.02)

Reasonable and Prudent Measures – Actions that USFWS believes necessary or appropriate to minimize the impacts, i.e., amount or extent, of incidental take. (50 CFR §402.02)

3.25 Roost Tree

A live or dead standing tree (snag) occupied by one or more bats. Throughout most of the IBAT and NLEB range, trees are typically occupied by bats outside of the hibernation period (spring, summer, fall). (2026 Survey Guidelines A8)

3.26 Species

Endangered Species - Any species which is in danger of extinction throughout all or a significant portion of its range. (Consultation Handbook xiv)
Listed Species – Any species of fish, wildlife, or plant that has been determined to be endangered or threatened under section 4 of the ESA. (Consultation Handbook xiv)

Proposed Species – Any species of fish, wildlife, or plant that is proposed in the Federal Register to be listed under section 4 of the ESA. (Consultation Handbook xvii)

Species – Amy subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife that interbreeds when mature. (Consultation Handbook xviii)

Threatened Species – Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. (Consultation Handbook (xix)

3.27 Suitable and Unsuitable Summer Habitat (IBAT, NLEB, TCB)

Encompasses habitat both within and outside of documented habitat.

Suitable summer habitat varies by species and includes:

- A wide variety of forested/wooded habitats where bats roost, forage, and travel
  - IBAT - Adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures
  - TCB - Adjacent and interspersed non-forested habitats such as emergent wetlands, shrublands, grasslands, and forested edges of agricultural fields, old fields, and pastures
- Forests and woodlots containing potential roost trees
  - NLEB - Live trees and/or snags ≥ 3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities
  - TCB - Live trees and/or snags ≥ 4 inches dbh
  - IBAT - Live trees and/or snags ≥ 5 inches dbh that have exfoliating bark, crack crevices, and/or hollows
- IBAT, NLEB, and TCB - Linear features such as fence rows, riparian forests, and other wooded corridors
  - TCB - Potential roost substrate includes live and dead leaf clusters of live and recently dead deciduous trees
- IBAT and NLEB - Dense or loose aggregates of trees with variable amounts of canopy closure
- IBAT and NLEB - Individual trees when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of another forested/wooded habitat

- Human-made structures such as
  - IBAT - Bridges and bat houses (artificial roost structures)
  - NLEB - Buildings, barns, bridges, culverts, and bat houses
  - TCB - Forested area near anthropogenic structures and buildings such as suburban neighborhoods and parks and underside of open-sided shelters
  - Coordination with USFWS may be required

Unsuitable summer habitat

- IBAT and NLEB - Individual trees that are ≥1,000 feet from forested/wooded areas
- IBAT and NLEB - Individual trees and/or small stand located in highly developed urban areas
- IBAT and NLEB - A newly regenerating young forest or woody shrub stand of ≤ 3-inch dbh that does not contain larger residual trees
- TCB - Highly developed urbanized areas devoid of native vegetation
- TCB - Isolated trees and/or small stands surrounded by expansive anthropogenic development such as parking lots, industrial buildings, and shopping centers

(2026 Survey Guidelines 7-9)

3.28 Take

Incidental Take - Take of listed fish or wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or applicant. (50 CFR §402.02)

Take - To harass, harm, pursue, hunt, shoot, wound, kill, capture, trap, collect, molest, or disturb. (50 CFR §22.6)

3.29 Tree

For the purposes of AMMs refer to trees that are suitable habitat for each species within their range. (Programmatic BO/CO 43)

Chapter 4. FHWA, FTA, FRA Rangewide Programmatic Consultation/ Conference for the IBAT, NLEB and TCB

4.1 Introduction

Programmatic consultations increase the efficiency of ESA Section 7 consultation by addressing multiple actions on a program, region, or other basis, and may also expedite permitting processes for such actions. The transportation programmatic consultation applies to future projects within a FHWA, FRA, or FTA program that the agencies fund, authorize, or approve within the geographic range of, and habitats suitable for the IBAT, NLEB, and TCB that are consistent with the programmatic action and its conservation measures. The programmatic consultation analyzes the aggregate of effects expected to result from its implementation on an individual bat species. Individual bats may be adversely affected by the implementation of the transportation program when projects occur within the species area of influence (AOI), and within suitable or documented habitat. (Programmatic BO/CO 2-3)

Projects within the transportation program that are within the scope of the programmatic consultation include those that result in no effect (NE) or may affect determinations for the IBAT, NLEB, or TCB. No consultation with USFWS is required for NE actions beyond documentation in IPaC. USFWS has 14-calendar days to review NLAA determinations and 30-calendar days to review LAA determinations.

4.2 Information for Planning and Consultation

IPaC has several functions including providing species lists and access to Dkeys. IPaC generates a species list based on the project scope and location. The FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting IBAT, NLEB, or TCB Dkey implements the Rangewide Programmatic Consultation. It is a guided analysis of the project that helps to evaluate potential impacts and can result in project specific avoidance and minimization measures (AMMs), which will become firm commitments in the National Environmental Policy Act (NEPA) document. For projects that are NLAA, IPaC generates concurrence verification letters. USFWS is verifying that the “proposed project may rely on the December 13, 2024, Programmatic Biological Opinion/ Conference Opinion for Transportation Projects within the Range of the Indiana Bat, Northern Long-eared Bat, and Tricolored Bat (PBO) to satisfy requirements under section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (16 USC 1536), as amended.” NE projects will generate a technical assistance letter and will have a pdf of the IPaC results that can be included with the environmental document. Projects that result in an LAA will receive a technical assistance letter with further guidance.

4.3 Quarter-Mile Bat and Half-Mile Hibernacula Reviews and GIS Layers

The detailed information in the Graphic Information Systems (GIS) restricted layers provided by the USFWS shall not be released to the public nor should it be included

in the NEPA document. Site specific hibernacula, capture, or roost tree location data (i.e. geographic coordinates, GIS shapefiles, and maps) must not be shared, distributed, or published without prior written consent from USFWS Indiana Field Office (FO).

A 0.25-mile bat (0.5-mile for hibernacula) review looks at confidential GIS layers for documented roost trees, capture locations, acoustic records, and/or hibernaculum records. If a project is located close to any of these records, additional commitments or design changes may be needed for the project to avoid impacts. Since Crawfordsville, Seymour, and Vincennes Districts are the only districts with known hibernaculum, there is an additional layer that is reviewed to determine how close a project is to a hibernaculum. If the project is within the 10-mile buffer of a Priority 1 or 2 IBAT hibernacula, 5-mile buffer of a Priority 3 or 4 IBAT hibernacula, or 3-mile buffer of a NLEB hibernacula, tree removal is only allowed from Nov 15 – March 31 to allow for fall swarming to be concluded. Areas outside of a hibernaculum can begin tree removal on October 1.

In the email requesting a 0.25-mile (or 0.5 for hibernacula) review by the District Environmental (DE) staff provide the following information:

- Project Des number
- Brief project description
- Maps or graphics of the project area including the construction limits or project termini
- Project location information such as Lat/long, .kmz, or .shp

INDOT DE will review the GIS layers in comparison to the project location. Once the review is completed, an email response will be provided with the results of the review.

If the review identifies roost trees, capture locations, and/or acoustic records near the project area, INDOT DE will coordinate with USFWS to determine if the project is located within documented bat habitat. This will occur prior to INDOT DE sending the results of the review. If this is missing, please coordinate with INDOT DE to determine if documented or suitable bat habitat is present to ensure the IPaC Dkey questions are being answered appropriately.

The IPaC Dkey questions should indicate if the project is in documented or suitable bat habitat. Related questions include:

- Do the project's activities include raising the road profile above the tree canopy in documented habitat for the IIBAT, NLEB, or TCB?
- Is there suitable summer habitat for the IBAT, NLEB, or TCB within the project action area?
- Will the project involve the removal or trimming of trees within documented habitat for the IBAT, NLEB, or TCB?

- Does the project involve the use of temporary lighting within IBAT, NLEB, or TCB suitable habitat?
- Will suitable roosting habitat still be available within the bridge, culvert, or structure once construction/replacement is complete?
- Is there any suitable habitat (including trees suitable for maternity, roosting, or foraging, or travelling habitat) for the IBAT or NLEB within 1,000 feet of the bridge, culvert, or structure?
- Will the project involve the removal or trimming of more than 20 acres of IBAT, NLEB, or TCB suitable habitat per 5-mile section of road/rail? (Transportation Dkey)

If an INDOT project includes upgrading multiple signage, signal, or lighting locations and the project scope is only occurring on or within the existing roadbed (with no tree trimming or removal or stream work), the IPaC Dkey can still be completed if roost trees, capture locations, and/or acoustic records are found to be close to some of the locations during the INDOT GIS review.

4.4 IPaC Review

Project coordination is completed through a guided analysis based on project impacts in IPaC. It will result in a project specific effects determination and, potentially, AMMs which become firm commitments in the NEPA document. Section 7 informal and a limited type of formal consultations can be completed in the IPaC Dkey. When completing IPaC please follow the guidance in the current "Using the IPaC" document located on the INDOT Environmental Policy website. All coordination and questions start with the INDOT DE. When requesting INDOT DE review of iPaC do not send technical assistance letters, inspections, or other documents. They will be available in iPaC. USFWS should not be coordinated with prior to INDOT DE. See the Consultation and Conservation Strategy for Listed Bats homepage for additional information.

No Effect (NE)

- INDOT DE will review the IPaC Dkey submission.
- Once INDOT reviews and agrees with IPaC, a concurrence email will be sent to the IPaC preparer. Section 7 coordination for the IBAT, NLEB, and TCB is concluded unless the project scope changes.

Not Likely to Adversely Affect (NLAA)

- INDOT DE will review the IPaC Dkey submission.
- Once INDOT DE reviews and agrees with the IPaC Dkey, it will be sent to USFWS for their 14-day review period.
- An INDOT DE concurrence email will be sent to the IPaC preparer informing them IPaC has been sent to USFWS for their review.
- Once the USFWS 14-day review period has expired, Section 7 coordination for the IBAT, NLEB, and TCB is concluded unless the project scope changes or USFWS responds to the concurrence letter in IPaC.

- If the project has been submitted for USFWS review and the IPaC Dkey needs to be updated, the previous Dkey will need to be deleted and redone. DO NOT START A NEW PROJECT. Only the action agency can delete the previous Dkey in IPaC (in this case INDOT DE). Email the INDOT DE to delete the previous Dkey.

Likely to Adversely Affect (LAA)

- INDOT DE will review the IPaC Dkey submission
- Once INDOT DE agrees with the project it will be sent to USFWS by INDOT for their 30-day review period.
- An INDOT DE email will be sent to the IPaC preparer informing them the project has been submitted for the 30-day USFWS review.
- USFWS will issue a verification letter at the conclusion of their review, which will likely include additional firm commitments and possibly mitigation required for the project.
- Once the USFWS verification letter is received, Section 7 coordination for the IBAT and NLEB (and TCB if on the species list) is concluded unless the project scope changes.

If the project scope changes after the IPaC Dkey completion concurrence or verification, IPaC may need to be updated, and re-coordination will need to occur with INDOT DE and USFWS. If it is unclear whether IPaC coordination needs to be updated, coordinate with INDOT DE. Scope changes are those that would modify IPaC Dkey responses to add impacts or AMMs or result in changes in the finding (i.e. LAA to NLAA). Examples of changes that require IPaC updates include:

- Tree clearing needed for the project is increased.
- Any scope change that will cause the IPaC determination or AMMs to change, such as the reduction in the amount of tree clearing and mitigation required.
- Another species gets added to the Dkey (see Appendix C for the Indiana Official Species List (OSL)).

4.5 Outside the Rangewide Programmatic Agreement

A project is outside the Rangewide Programmatic Consultation when the IPaC Dkey cannot be completed due to project scope or impacts. Projects that fall outside the Rangewide Programmatic Agreements are:

- Activities < 0.5-mile from and IBAT, NLEB, or TCB hibernaculum that cause stressors to the covered bat species. This includes slash pile burning, ground disturbance, vibrations, noise above existing background levels, temporary or new/additional permanent lighting, tree removal/trimming, bridge, culvert, or structure activities.
- Activities that alter the entrance or environment of known IBAT, NLEB, or TCB hibernaculum.

- Projects that include raising the road profile above the tree canopy in documented habitat for IBAT, NLEB, or TCB.
- Percussive activities within suitable habitat (not related to tree removal or bridge, culvert, or structure work) that involve noise/vibration above existing background levels when conducted beyond 100 feet of the road/rail surface during the pup season.
- Activities that involve tree removal/trimming of more than 20 acres of IBAT, NLEB, or TCB suitable habitat per 5-mile section of road/rail.
- Activities that involve tree removal/trimming within documented habitat for the IBAT, NLEB, or TCB during the pup season (May 1 through July 31).
- Activities that involve tree removal/trimming outside documented habitat for the IBAT, NLEB, or TCB beyond 100 feet of the road/rail surface during the pup season.
- Activities that involve tree removal/trimming of trees ≥9 in diameter at breast height (DBH) outside documented habitat for the IBAT, NLEB, or TCB within 100 feet of the road/rail surface during the pup season.
- Activities involving the exclusion (temporary or permanent) of IBAT, NLEB, or TCBs from a bridge, culvert, or structure. (Exclusion examples include replacement of bridges used as roost sites or use of removeable foam to restrict use of gaps during deck repair work.)
- The removal, replacement, and/or alteration of a bridge, culvert, or structure during the winter hibernation period (inactive season) when a colony of hibernating bats, NLEBs, or TCBs are observed using the bridge, culvert, or structure. Alteration includes rehabilitation. Rehabilitation is defined in 23 CFR §650.305 as the major work required to restore the structural integrity of a bridge as well as the work necessary to correct major safety defects.
- The removal, replacement, and/or alteration of a bridge, culvert, or structure in the active season that will disturb over five covered bat species using the bridge, culvert, or structure.
- The removal, replacement, and/or alteration of a bridge, culvert, or structure that has documented use by over five covered bat species, in which suitable roosting habitat is no longer available within the bridge, culvert, or structure once construction/replacement is complete. (User's Guide PBO/CO 7-8)

If a project is outside the Rangewide Programmatic Agreement, additional coordination with USFWS must occur to receive a Section 7 concurrence. Complete the IPaC process until IPaC has stopped. Notify INDOT DE so that they can verify that the stoppage was accurate and not based on an improperly answered question. A standard informal letter will need to be prepared. The letter will include the project scope, potential impacts, commitments, AMMs, and conclude with a determination regarding the potential impacts to the species. Add other species present such as gray bats or mussels, and any critical habitat that has a NLAA finding that also needs USFWS concurrence. Submit the letter to the INDOT DE. After INDOT DE review and concurrence, they will submit the letter to USFWS for their 30-day review. USFWS will issue a concurrence letter which may include additional firm commitments.

Appropriate AMMs and/or commitments must be included in the standard informal letter. For example, if you were to run the project though the IPaC transportation Dkey and receive a NLAA determination likely you would receive General AMM 1, Tree AMM 1-4, and possibly Lighting AMM 1 and 2. An additional AMM would be the 10-mile hibernacula buffer time of year (TOY) tree clearing restriction from November 15 to March 31. Those AMMs should be included in the standard informal letter if they include a similar project scope and concludes with a similar determination. Typical information included in IPaC Dkey questions should also be included in the standard informal letter. For example, if a structure (barn) will be removed for the project, that will need to be discussed in the standard informal letter and the inspection form attached.

If a project anticipates an LAA determination, standard formal consultation with USFWS might be required and INDOT EPO and DE should be contacted as soon as possible. Formal consultation is a process followed for major or high impact projects that may adversely affect federally listed species or critical habitat. It requires the preparation of a Biological Assessment (BA) for all listed species in the project area and is likely concluded with a Biological Opinion (BO). The LAA determination may result in design modifications, firm commitments to avoid negative impacts to species or habitat and include an incidental take statement.

If project scope changes occur, an addendum to the previous standard informal coordination letter must be completed. This addendum should include the following:

- Summarizing the original project scope;
- Discuss the project scope changes since the original standard informal coordination letter;
- Changes in project impacts (if applicable); and
- Conclude with a request that USFWS concur that the original determination is still valid.

Part II. Birds and Other Species

Chapter 5 Migratory Bird Treaty Act Compliance

5.1 Introduction

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. §703-712) prohibits taking, killing, or possessing migratory birds or nests with eggs and young without a federal permit. A migratory bird for the purposes of the Migratory Bird Treaty Act is bird species protected under international treaties with Canada, Mexico, Japan, and Russia.

The Migratory Bird Treaty Reform Act of 2004 (MBTRA) amended the MBTA by stating the MBTA applies only to migratory bird species that are native to the United States or U.S. territories. A native migratory bird species is one that is present because of natural biological or ecological processes. The MBTA requires the Service to publish a list of all non-native, human-introduced bird species to which the MBTA does not apply.

The list of migratory bird species protected by the law is primarily based on bird families and species included in the four international treaties. The revised list of migratory birds can be found at 50 CFR Parts 10, 17, and 21. The list was revised in 2023 incorporating the most current scientific information on taxonomy and natural distribution. A migratory bird species is included on the list if it meets one or more of the following criteria:

5.1.1 It occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family protected by one of the four international treaties or their amendments.

5.1.2 Revised taxonomy results in it being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes.

5.1.3 New evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

5.2 Terminology

5.2.1 Birds

A member of the class Aves; including any part, product, egg, or offspring thereof, or the dead body or parts thereof (excluding fossils), whether or not included in a manufactured product or in a processed food product. (50 CFR §10.12)

5.2.2 Migratory Bird

Any bird, whatever its origin and whether or not raised in captivity, which belongs to a species listed in § 10.13, or which is a mutation or a hybrid of any such species, including any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof. (50 CFR §10.12)

5.2.3 Nesting Season

The nesting season for migratory birds is May 1 through September 1.

5.2.4 Possession

The detention and control, or the manual or ideal custody of anything which may be the subject of property, for one's use and enjoyment, either as owner or as the proprietor of a qualified right in it, and either held personally or by another who exercises it in one's place and name. Possession includes the act or state of possessing and that condition of facts under which one can exercise his power over a corporeal thing at his pleasure to the exclusion of all other persons. Possession includes constructive possession which means not actual but assumed to exist, where one claims to hold by virtue of some title, without having actual custody. (50 CFR §10.12)

5.2.5 Take

To pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect. (50 CFR §10.12)

5.3 Migratory Birds and INDOT

The primary source of potential migratory birds in the project area is the DNR Early Coordination/Environment Assessment (EC/EA). The species list obtained from IPaC is too broad to apply at the local project level. Bird use of bridges, culverts, and other structures is through visual observation of nests and may be identified in the EC/EA letter if the DNR Regional Biologist conducted a site visit prior to developing their comments.

Barn Swallows (*Hirundo rustica*), Cliff Swallows (*Hirundo pyrrhonata*), and the Eastern Phoebe (*Sayornis phoebe*) are commonly found nesting on bridges, culverts, and other structures. Barn Swallows are found in open rural and urban areas on bridges, culverts, and buildings located near water. The cup-shaped mud nests can be found singly or in small, loose colonies. Half or full-cup nests are made of mud, grass, and straw. Mud is rolled into small balls with the nest built one ball at a time by the couple. A nest can be built in six to eight days. The top of the nest is a

semicircle that tapers downward in a cone shape. Old nests can be repaired for a new brood.



Barn Swallow (male) (*Hirundo rustica)*

https://www.allaboutbirds.org/guide/Barn_Swallow





Barn Swallow (female) (*Hirundo rustica)*

https://macaulaylibrary.org/asset/507003011?_gl=1*z32fg9*_gcl_au*MzA1OTAyMDg1LjE3ODg4ODU0MzI.*_ga*ODYwMDAxNDc3LjE3ODg4ODU0MzM.*_ga_QR4NVXZ8



Barn Swallow Nest

https://salishmagazine.org/barn-swallow/

The transition from traditional building sites to bridges has allowed Cliff Swallows to increase population numbers. They prefer open habitat near buildings, bridges, and under eaves or cliffs. Their nest is described as a gourd-shaped mud structure that extends forward into a downward directed tubular entrance tunnel. The tube may be absent. They can be found in small to very large colonies.



Cliff Swallow (*Petrochelidon pyrrhonata)*

https://www.allaboutbirds.org/guide/Cliff_Swallow/species-compare/68123021





Cliff Swallow Nests

https://www.allaboutbirds.org/guide/Cliff_Swallow/id

The Eastern Phoebe can be found on bridges, culverts, and other man-made platforms or surfaces in addition to open deciduous woodlands, forest edges and clearings located near water. The nest is cup-shaped and lined with soft material (moss and hair). It has a semi-circular shape when attached to a wall. It is a solitary nester.



Eastern Phoebe (*Sayornis phoebe*)

https://birdsoftheworld.org/bow/species/easpho/cur/introduction



Eastern Phoebe Nest

https://birdsoftheworld.org/bow/species/easpho/cur/introduction

5.4 Process

5.4.1 General Guidelines

- Nests with eggs or young shall not be disturbed.
- Nests can be used/active at an incomplete state of construction and should be monitored for activity.
- Nests may be removed from a structure prior to May 1st, if no eggs or young are present. See Appendix F for ADOTs Cliff Swallow Nesting Stages.

- Regular monitoring is required since a nest can be built and have eggs in seven days or less.
- New nest construction shall be removed prior to egg laying. The U.S. Department of Interior Migratory Permit Memorandum (MBPM-2, April 15, 2003) states that there is no prohibition in the MBTA that applies to the destruction of a bird nest alone (without birds or eggs), provided that no possession occurs during the destruction. See
- The area shall be inspected prior to the start of work each day, and nesting activity shall be removed if no eggs or young are present.
- Once cleared, construction can begin.

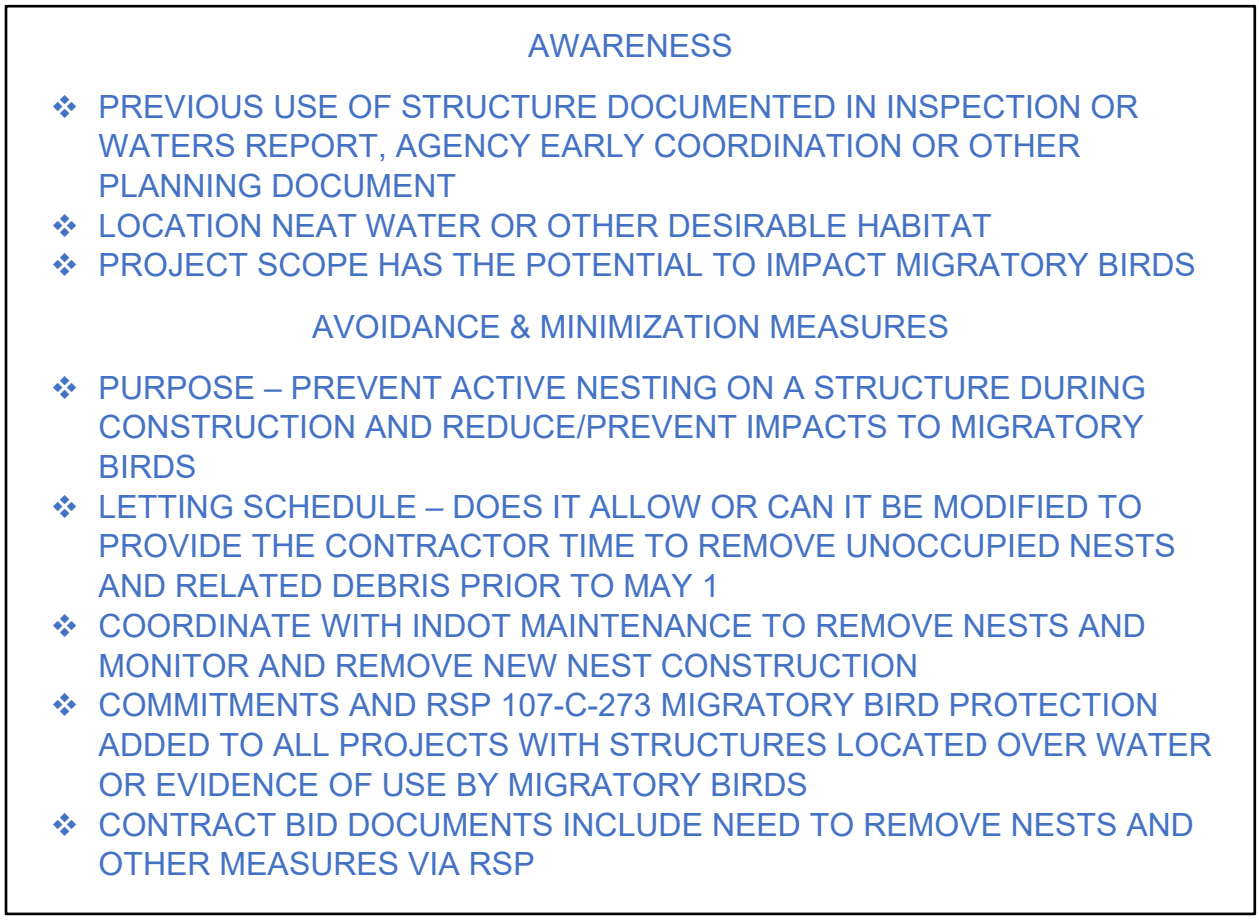


Figure 5.1 Project Planning for Migratory Birds

INDOT

5.4.2 Steps to Avoid and Minimize Impacts

The ability to avoid and minimize impacts starts early in project planning. Bridge inspections are required to note the presence of nests or other signs of use of the bridge/structure by birds and bats on the inspection form. In addition, nesting

activity should also be noted in the waters report and described in the NEPA document.

Step 1. Project Planning

(a) Review bridge and structure inspection forms for previous observations.
(b) During field work note the presence or absence of nests or evidence of previous nests. Include photos and nest location information in the report.
(c) Review the early coordination document from the DNR for the presence of migratory birds/habitat. Information will provide specific information, in comparison to the general information provided in the IPaC species list.
(d) Evaluate the project and develop AMMs measures if required. The RSP 107-C-273 Migratory Bird Protection (last revised 9/16/2021) should be included for every project with documented use or located over a waterway. For birds and bird habitat adjacent to the project and not on a structure coordinate with EWPSO for help developing AMMs and a project specific USP.
(e) Coordinate with the INDOT Project Manager and the designer to evaluate the schedule to ensure the contractor will be in place to implement the measures prior to the start of the nesting season.

Step 2. Active nests during the nesting season

(a) AMMs have been implemented and structure actively monitored.
(b) Nest is built and eggs or young are present.
(c) Project delay, sequence, or additional AMMs are evaluated and implemented as appropriate, but work may still result in take.
(d) EWPSO evaluates options and coordinates with USFWS. Activity that would result in take is delayed until USFWS approval.

AWARENESS

- RSP 107-C-273 IS IN ALL BRIDGE AND CULVERT CONTRACTS LOCATED OVER WATER
- MIGRATORY BIRD COMMITMENT IS INCLUDED

PRE-CONSTRUCTION

- PLAN DEVELOPMENT – REMOVAL OF NESTS PRIOR TO NESTING SEASON (MAY 1) IF NO EGGS OR YOUND ARE PRESENT AND REMOVAL OF NEW NEST CONSTRUSTION PRIOR TO EGG LAYING
- INSTALLATION OF EXCLUSION, HAZING, OR HARASSMENT MEASURES PRIOR TO MAY 1

DURING CONSTRUCTION

- MONITOR AND REPAIR EXCLUSON, HAZING, OR HARASSMENT MEASURES
- REMOVE NEW NESTS PRIOR TO EGG LAYING
- STOP CONSTRUCTION ACTIVITY IF NEST HAS EGGS OR YOUNG

POST-CONSTRUCTION

- REMOVAL OF ALL EXCLUSION MEASURES PRIOR TO CONTRACT CLOSE

Figure 5.2 Construction and Maintenance for Migratory Birds

INDOT

5.5 Other Bird Species

A project and species specific USP may be required as indicated in the EC/EA letter. The EWPSO District Ecologist can assist in developing the project specific AMMs. One example is a 20-mile repaving project with several pipe replacements. A forest with identified migratory bird use was located on the southern end of the project. Work within the forested area to include pipe replacement and repaving was restricted to outside the nesting season. The remainder of the project had no restrictions. Here are three other examples

5.5.1 Roxanna Marsh Nature Preserve

A local trail project was proposed above the Roxanna Marsh Nature Preserve in East Chicago. The DNR EC/EA indicated that five state endangered bird species (and migratory birds) used the preserve. The letter recommended that the work

be conducted outside of the breeding season (early May to late August). The eastern half of the proposed trail had an industrial park between the trail and the marsh. The concern was the western half of the trail that was located 75 feet from the edge of the Grand Calumet River and included a portion of the preserve between the trail and the river. This area had significant tree and shrub growth that would provide a visual barrier. In consultation with the DNR it was determined that restricting tree clearing to outside of the breeding season, installing protective resource fence along the south side of the construction limits, and restricting work in the western half until after leaf-out would be sufficient to prevent additional work restrictions.

5.5.2 Worm-eating Warbler

A small structure replacement project was scheduled near the Martin State Forest on US 50. The worm-eating warbler, a state species of special concern, had been documented within the project limits. The DNR recommendations were for a culvert and were included in the NEPA document without validation. A literature review determined that the warbler spent much of its time on or near the ground searching for insects in the leaf litter and low vegetation. The nests are placed on the ground in a drift of leaves, lined with moss and grass, and are usually well concealed from above by vegetation. The warbler will also nest at the base of shrubs or saplings. To make the project area less desirable three AMMs were developed. Protected resource fence was required along the perimeter of the construction zone and work was limited to inside the fence. All debris, including leaf litter, downed branches, garbage and other materials, was required to be removed from inside the fence. If these measures were not effective and a nest with eggs or young was found within the zone construction work had to stop until the nest could be evaluated or the birds fledged.

5.5.3 Hooded Warbler

A local trail project included the construction of a mile-long crushed stone trail and bridge replacement. Hooded warblers nest in bushes near forest clearings. The trail included a small, forested habitat. The AMMs included limiting the tree, shrub, and other vegetation removal to before April 30 and after August 31. Work was prohibited in the forested habitat during the nesting season (April 30 to August 31). If these measures were not effective and a nest with eggs or young was found work had to stop until the nest could be evaluated or the birds fledged.

5.6 Commitments and Recurring and Unique Special Provisions

Projects may require additional commitments or modifications due to project scope, construction timing, species present, surrounding habitat, and other factors.

When applicable, only one migratory bird commitment is required in the NEPA document. RSP 107-C-273 must be added to the contract if a firm bird commitment has been included in the NEPA document. Commitment resolution in the

commitments database will state: “RSP 107-C-273 titled Migratory Bird Protection will be included in the contract book.”

5.6.1 Birds or signs of birds.

This **firm** commitment must be included in the NEPA document if birds or signs of birds have been found during the bridge/structure inspection. This commitment will be resolved with the addition of RSP 107-C-273 Migratory Bird Protection to the contract.

Structure *(include number and location)* has shown evidence of use (i.e. nests) by a bird species protected under the Migratory Bird Treaty Act (MBTA) during the *(date)* inspection. Avoidance and minimization measures must be implemented prior to the start of and during the nesting season. Nests without eggs or young should be removed prior to construction during the non-nesting season (September 2 – April 30) and during the nesting season if no eggs or young are present. Nests with eggs or young cannot be removed or disturbed during the nesting season (May 1 – September 1). Nests with eggs or young should be screened or buffered from active construction. Details of the required procedures are outlined in RSP 107-C-273.

5.6.2 Bridge/Structure over Water.

This **firm** commitment must be included in the NEPA document if the bridge/structure is over a water source, where work will occur below the bridge deck (including full depth patching), and the previously listed commitment does not apply. This commitment will be resolved with the addition of RSP 107-C-273 Migratory Bird Protection to the contract.

Structure *(include number and location)* and the project’s surrounding habitat is conducive for use (i.e. nests) by a bird species protected under the Migratory Bird Treaty Act (MBTA). Prior to the start of the nesting season the structure must be inspected for birds or signs of birds. If birds or signs of birds are found during the inspection avoidance and minimization measures must be implemented prior to the start of the nesting season (May 1 – September 1). Nests without eggs or young should be removed prior to construction during the non-nesting season (September 2 – April 30) and during the nesting season if no eggs or young are present. Nests with eggs or young cannot be removed or disturbed during the nesting season. Nests with eggs or young should be screened or buffered from active construction. Details of the required procedures are outlined in RSP 107-C-273.

5.6.3 This commitment is used when there is a general recommendation from DNR about the bridge commonly being used by birds protected by the MBTA and one of the previous two listed Migratory Bird commitments are not used. Commitment is **firm** or **for consideration** dependent on the project scope. For example, if the project is a bridge replacement/ rehabilitation, the commitment should be included as firm. If the project is only an overlay on the bridge, for consideration is appropriate. This commitment will be resolved with the addition of RSP 107-C-273 Migratory Bird Protection to the contract. If there are specific recommendations in the DNR early coordination this commitment does not apply.

> This type of structure is commonly used by birds protected by the Migratory Bird Treaty Act (MBTA). Prior to the start of nesting season, the structure must be inspected for birds or signs of birds. If birds have been found using the structure, avoidance and minimization measures must be implemented prior to the start of and during the nesting season. Nests without eggs or young should be removed prior to construction during the non-nesting season (September 2 – April 30) and during the nesting season if no eggs or young are present. Nests with eggs or young cannot be removed or disturbed during the nesting season (May 1 – September 1). Nests with eggs or young should be screened or buffered from active construction. Details of the required procedures are outlined in RSP 107-C-273.

Chapter 6 Bald and Golden Eagle Protection Act Compliance

6.1 Introduction

The Bald and Golden Eagle Protection Act (BGEPA) 16 U.S.C. 668-668d, prohibits the take of bald (*Haliaeetus leucocephalus*) or golden (*Aquila chrysaetos*) eagles, including their parts (including feathers), nest or eggs without a federal permit. Golden Eagles may migrate through Indiana and overwinter but have not nested in the state.

The USFWS published revisions to 50 CFR Parts 13 and 22 effective April 12, 2024, for permits for incidental take of eagles and eagle nests. (89 FR 9920) The general permit for disturbance take of eagles in 50 CFR §22.280 includes linear infrastructure construction and maintenance, to include roads, rail, trails, power lines, and other utilities, within 660 feet of a bald eagle nest. ((b)(2))

Notice of a bald eagle nest in the project area may come from the IPaC Migratory Bird List or more likely will come from the Indiana Department of Natural Resources (DNR) Early Coordination letter, field observation, or DNR Construction in a Floodway (CIF) permit. The USFWS does not maintain a database of known locations. They rely on the Indiana DNR to track this information.

6.2 Terminology

6.2.1 Breeding Season

The period where eagles are breeding or are preparing to breed. The breeding season for bald eagles in Indiana is from **December 15 through July 31**. (General Permit Standard Conditions – Bald Eagle Disturbance Table 1)

Chronology of typical reproductive activities of bald eagles in Indiana.

- Nest building – December through early March
- Egg laying/incubation - January through April
- Hatching/rearing young - March through June
- Fledging young – mid-May through August (National Bald Eagle Management Guidelines, 6)

6.2.2 Disturb

Disturb means to agitate or bother to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding or sheltering behavior, or (3) nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior. (50 CFR §22.6)

6.2.3 Eagle Nest

Any assemblage of materials built, maintained, or used by bald eagles or golden eagles for the purpose of reproduction. An eagle nest remains an eagle nest until it becomes so diminished, or the nest substrate upon which it is built fails, that the nest is no longer usable and is not likely to become usable to eagles, as determined by a Federal, Tribal, or State eagle biologist. (50 CFR §22.6)

6.2.3.1 Alternative Nest

One of potentially several nests within a nesting territory that is not an in-use nest at the current time. When there is no in-use nest, all nests in the territory are alternative nests. (50 CFR §22.6)

6.2.3.2 In-use Nest

A bald eagle nest that contains one or more viable eggs or dependent young. (50 CFR §22.6)

6.2.4 Haze

The use of non-lethal, non-injurious methods to scare or disperse. (89 FR 9926)

6.2.5 Take

To pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. (50 CFR §22.6)

6.3 General Permit for Disturbance Take of Eagles

6.3.1 The location of the nest determines the type of permit required. Permits to authorize disturbance associated with hazing eagles or eagle nest take are not authorized under this general permit. (50 CFR §22.280)

6.3.1.1 No permit required - Projects located 660 feet or more from an eagle nest do not require a permit. A permit is also not required when an activity that may ordinarily disturb eagles is ongoing at the time an eagle pair initiates nesting because nesting eagles are presumed to tolerate the activity.

6.3.1.2 No permit available - Work cannot be conducted during the breeding season (December 15 through July 31) when the nest is located within 330 feet of the project.

6.3.1.3 General permit required - A general permit for disturbance take of bald eagles will be required for activities that occur between 330 feet and 660 feet of a bald eagle nest. The following activities are eligible for a general permit:

- Building construction and maintenance within 660 feet of a bald eagle nest. ((b)(1))

- Linear infrastructure construction and maintenance within 660 feet of a bald eagle nest. ((b)(2))
- Alteration of shorelines and water bodies (e.g. wetlands) within 660 feet of a bald eagle nest. ((b)(3))
- Alteration of vegetation (e.g. mowing) within 660 feet of a bald eagle nest. ((b)(4))
- Loud, intermittent noises (e.g. blasting) within one-half mile of an in-use bald eagle nest. ((b)(9))

6.3.1.4 Hazing does not constitute eagle disturbance unless it is adjacent to an in-use nest and disrupts eagle breeding activity. (89 FR 9926)

6.4 Avoidance and Minimization Measures

The AMMs can be found in the General Permit Conditions – Bald Eagle Disturbance and the USFWS National Bald Eagle Management Guidelines (BEMG).

- BEMG recommendations include –
  - Keeping a distance between the activity and the nest (distance buffers), maintaining forest or natural areas between the activity and around nest trees (landscape buffers), and avoiding certain activities during the breeding season.
  - Evaluation of intermittent, occasional, or irregular activities for the potential to disturb.
  - Protection of nest sites that have been damaged or destroyed by the elements for up to three complete breeding seasons to provide the opportunity for eagles to rebuild the nest and reoccupy the site.
- Document AMMs not implemented due to the bald eagle's demonstrated tolerance to human activity.
- Avoid activities that may affect the survivability of the nest tree or other natural nesting substrate. Measures include marking nest location on plan sheets, communicating nest location and restrictions to contractors, preserving root integrity of the nest tree by avoiding heavy equipment operation, soil compaction, or ground disturbance greater than twelve (12) inches deep within the nest tree's dripline or fifty (50) feet, whichever is greater.
- To the maximum degree practicable, avoid conducting activities that may disturb eagles during severe weather to ensure adult eagles can provide necessary warmth and shelter for eggs and nestlings.
- For nests that are occupied, or status is unknown (no measures are required for unoccupied nests) –
  - No construction is allowed during the breeding season for nests within 330 feet.
  - To the extent practicable, avoid conducting construction within 660 feet of the nest during the first three (3) months of the breeding season.

- Stage construction from the furthest possible distance from the nest then towards the nest to provide the eagles with the opportunity to adjust to the activity.
- Avoid construction within 660 feet of the nest before and two hours after sunrise and for two hours before and after sunset to allow eagles time to care for the nestlings.
- Minimize noise and visibility of construction activities that will occur within 660 feet of the nest to include use of natural and artificial barriers.
- Minimize activity within 330 feet of the nest. Ensure contractors and inspectors are aware of the nest location, conduct activities from a closed vehicle and not on foot, and limit time, unnecessary noise, and visual disturbance within 330 feet.

6.5 Specific Permit for Bald Eagle Disturbance

A specific permit will be required when disturbance of a bald eagle nest is by an activity not specified under 50 CFR §22.280 (b) or the disturbance of eagles is caused by physical or functional elimination of all foraging area within a territory. (50 CFR §22.280 (c))

6.6 Process

The following process should be followed:

Step 1. Verify the location of the bald eagle nest in relation to the project.

(a) Review the DNR early coordination letter for potential of bald eagle nest(s) in the project area.
(b) Verify status of nest (in-use, occupied, alternative, or abandoned) with DNR ornithologist.
(c) Verify location of nest with DNR ornithologist. EWPSO assistance may be required to obtain specific coordinates if not visible from the field.
(d) If the nest is located within 330 feet of the project area, no activity can occur during the breeding season (December 15 through July 31).
(e) If the nest is located beyond 660 feet of the project area no activity limitations are required.
(f) If the nest is located between 330 feet and 660 feet of the project area the activity must be evaluated for compliance with the AMMs (see 10.4 above) and the conditions of the general permit for disturbance take of eagles. Conditions of the general permit are
(g) Evaluate the project to determine if modifications can be made to avoid work within 330-to-660-foot zone. For example,
    (1) Proposed water retention pond was located within 660 feet of in-use nest. Construction of pond was delayed and road boundary marked with protected resource fence. Retention pond construction scheduled for after breeding season. No restrictions required for main project.

(2) Twenty-mile linear repaving and pipe replacement project. Nests located at southern end of project. Work scheduled to ensure out of the 660-foot zone during breeding season. Reverification with DNR ornithologist. Period of non-use justified including USP requiring evaluation prior to start of construction and no restrictions.
(3) Bridge rehabilitation work with in-use nest within 330 feet. Work scheduled for after breeding season.

Step 2. General conditions of the permit for disturbance take of eagles.

(a) To the maximum degree practicable, implement measures to avoid and minimize nest disturbance, including disturbance due to noise from human activities, visibility of human activities, proximity of activities to the nest, habitat alteration, and any indirect stressors.
(b) Activities are avoided that may negatively affect the nesting substrate, including the survival of the nest tree.
(c) There are no practicable alternatives to avoiding or minimizing the disturbance.

Step 3. Complete the permit application Form 3-200-91 Eagle Disturbance Take.

(a) Eligibility requirements –
- INDOT will be the applicant/permit holder. Contractors or consultants may assist in completing the application or conducting work as a subpermittee.
- The applicant is responsible for compliance with the permit and must have the authority to implement the required permit conditions.

(b) Application requirements.
- Describe the activity that will cause take of bald eagles, to include the location, seasonality, and duration.
- Include the location of known nests and nest status (i.e., in-use or alternative).
- Include justification of why there is no practicable alternative to take that would protect the interest to be served.
- Include an eagle impacts assessment that describes the eagle activity and eagle use in the project area, methods used to conduct the assessment, and previous USFWS communications.
- Implemented and proposed steps to avoid and minimize to the maximum degree practicable, compensate for, and monitor impacts to eagles.
- Provide documentation that the activity involving the take of eagles authorized by the general permit complies with all other applicable Federal, State, Tribal, and local laws.
- A permit application fee is not required for state or local government agencies or any individual or institution acting on behalf of that agency when evidence of status is indicated in the permit application. (50 CFR §13.11 (d)(3)(i))

- Agreement to purchase eagle credits, if required, from a Service approved conservation bank or in-lieu fee program.

(c) Submit the completed application to the EWPSO District Ecologist for review.
(d) INDOT will submit the completed application to USFWS and forward the permit to the consultant, contractor, or other involved parties when received.

Step 4. Review the permit for the permit conditions. Conditions include:

- The type of take authorized to include the amount, location, or other restrictions.
- Required avoidance, minimization, monitoring, and adaptive management measures.
- Requirements for reporting and handling discovered eagle remains or injured eagles.
- Reporting requirements.
- Compensatory mitigation requirements.
- Recordkeeping requirements.

6.7 Compensatory Mitigation Requirement

Compensatory mitigation is required when (1) the permit-authorized take exceeds the applicable eagle management unit (EMU) take limit and (2) the Service determines the permitted activity is not consistent with maintaining the persistence of the local area population. (50 CFR §22.220) An EMU is a geographically bounded region within which permitted take is regulated to meet the management goal of maintaining stable or increasing breeding populations of bald eagles. Indiana is in the Mississippi EMU. (50 CFR §22.6) Compensatory mitigation, if required, must be approved by the Service and includes conservation banks, in-lieu fee programs, or permittee responsible mitigation. (50 CFR §22.220 (c))

6.8 Reporting Requirement

The permittee must monitor the permitted activity sufficiently to determine the status of the nest during the breeding season. The breeding season in Indiana is from December 15 through July 31. The nest status (i.e., occupied or unoccupied) or if occupied, the nest fate (i.e. fledged young or failed to fledge young) should be noted. Observations should occur in a manner not to cause additional disturbance to breeding eagles.

Permittees must submit an annual report of nest status and nest fate using Form 3-202-15 (Eagle Incidental Take Annual Report). This is due within 30 days of permit expiration or prior to a renewal request, whichever is first. The annual report is required even if no eagle activity was observed or no activities were conducted.

The assigned EWPSO District Ecologist will be responsible for completing the reporting requirement for state projects with support from project construction.

6.9 Project Examples

6.9.1 SR 67 Lattas Creek Bridge Replacement – Notice of a bald eagle nest was received through the DNR permit. Permit Condition 9 stated “due to the nearby presence of an Active Bald Eagle’s nest, do not conduct construction, operate heavy machinery, or clear trees within 660’ of the nest from December 1 through September 1.” The INDOT Endangered, Threatened, and Rare (ETR) On-Call consultant visited the site to determine the nest location and the distance from the project site. The nest was located over 800 feet from the bridge and on the opposite side of a wooded area that would screen any activity at the bridge from the nest. The findings were conveyed to the DNR Ornithologist to update their records. No restrictions were required.

6.9.2 Morehouse Road Reconstruction – The reconstruction project started at US 52 and extended north approximately 4,500 feet. A stormwater basin was proposed at the northwest corner of the project. An active bald eagle nest was located approximately 660’ west of the proposed basin. The area around the nest had trees but most of the area between the nest and the basin was an open farm field. The basin construction and use as a storage or staging area was limited to outside of the breeding season. A protected resource fence was installed along the west construction limits that had to remain until the end of the breeding season. The measures were approved by the DNR and no other restrictions were required.

6.9.3 US 41 and Coal Creek Bridge Replacement – The USFWS response to the Early Coordination letter indicated that a bald eagle nest was present in the project area. INDOT DE field investigation determined that an active bald eagle nest was located approximately 1,580 feet from the nearest project limits. The DNR was notified of the nesting status to update their records.

6.9.4 SR 234 Bridge Improvement – A bald eagle nest was located between 330 and 660 feet from the project area. A band of trees between the nest and project area was determined to be an insufficient screen. Construction activity was limited to outside of the bald eagle nesting season (January 15 to July 31). Note that the activity restricted window was changed to the bald eagle breeding season (December 15 to July 31).

6.9.5 I-74 Cable Barrier – The DNR Early Coordination letter identified a bald eagle nest within ½ mile of the project area and the recommendation of a 660-foot buffer. Further coordination with the DNR Ornithologist indicated that the eagle nest was lost after the 2020 nesting season and not rebuilt. The nest was also located over 660 feet from the project area. No restrictions were required.

6.9.6 SR 66 HMA Overlay and Preventive Maintenance – The DNR Early Coordination letter identified a bald eagle nest with 0.5 miles of the project area. The DNR records indicated that the nest was new and in good shape in 2020. The

INDOT ETR On-Call consultant visited the site. They found no evidence of a nest at or near the data point provided by the DNR. The adjacent landowner indicated that he had not seen any bald eagle activity in the area for several years. The DNR agreed that the nest site was no longer active and updated their records based on the information provided.

6.10 Firm Commitments

6.10.1 Nest within 330 feet of the project area. This firm commitment will be added in the NEPA document when bald eagle nests are located within 330 feet of the project area. DNR confirmation of eagle nest diminishment must be obtained and recorded if the commitment is not included. An eagle nest remains an eagle nest until it becomes so diminished, or the nest substrate upon which it is built fails, that the nest is no longer usable and is not likely to become usable to eagles, as determined by a Federal, Tribal, or State eagle biologist. (50 CFR §22.6) Resolution of this commitment is the inclusion of the Bald Eagle Protection USP for nests within 330 feet in the contract documents.

> A bald eagle nest is located within 330 feet of the project area. The Bald and Golden Eagle Protection Act prohibits anyone, without a federal permit, from taking or disturbing bald eagles, which include their parts, nests, or eggs. No construction activity shall take place during the bald eagle breeding season (December 15 to July 31).

Commitment resolution in the commitments database will state: “USP ___ titled “Bald Eagle Protection for Nests Located within 330 Feet” will be included in the contract book.”

6.10.2 Nest between 330 feet and 660 feet of the project area. This firm commitment will be added in the NEPA document when bald eagle nests are located between 330 feet and 660 feet of the project area. DNR confirmation of nest abandonment must be obtained and recorded if the commitment is not included. An eagle nest remains an eagle nest until it becomes so diminished, or the nest substrate upon which it is built fails, that the nest is no longer usable and is not likely to become usable to eagles, as determined by a Federal, Tribal, or State eagle biologist. (50 CFR §22.6) Resolution of this commitment is the inclusion of the Bald Eagle Protection USP for nests between 330 feet and 660 feet in the contract documents.

> A bald eagle nest is located between 330 feet and 660 feet of the project area. The Bald and Golden Eagle Protection Act prohibits anyone, without a federal permit, from taking or disturbing bald eagles, which include their parts, nests, or eggs. A Bald Eagle Disturbance Take Permit is required.

Commitment resolution in the commitments database will state: “USP ___ titled “Bald Eagle Protection for Nests between 330 and 660 Feet” will be included in the contract book and a Bald Eagle Disturbance Take Permit will be acquired.”

6.10.3 No firm commitment or USP is required for nests over 660 feet from the project area.

6.11 Unique Special Provisions

The appropriate USP must be included in the contract document. Project specific USPs shall be developed for the project based on the specific circumstances. A USP must be added to the contract if a firm bald eagle protection commitment has been included in the NEPA document.

6.11.1 USP for Bald Eagle Protection for Nests Located within 330 Feet

BALD EAGLE PROTECTION

The bald eagle (Haliaeetus leucocephalus) is a species protected under the Bald and Golden Eagle Protection Act, BGEPA. A bald eagle nest has been documented within 330 ft of the project area. The BGEPA prohibits anyone, without a federal permit, from taking or disturbing bald eagles, which includes their parts, nests, or eggs. No construction activity shall take place during the bald eagle breeding season, from December 15 to July 31. If tree clearing/trimming is required, it shall follow the bat tree clearing/trimming restrictions.

6.11.2 USP Bald Eagle Protection for Nest between 330 feet and 660 Feet

BALD EAGLE PROTECTION

Description

This work shall consist of protecting bald eagles as required under the Bald and Golden Eagle Protection Act, BGEPA, in accordance with 105.03.

Materials

Materials, as required, shall be as described herein.

Construction Requirements

The bald eagle (Haliaeetus leucocephalus) is a species protected under the BGEPA. A bald eagle nest has been documented between 330 ft and 660 ft of the project area. The BGEPA prohibits anyone, without a federal permit, from taking or disturbing bald eagles, which includes their parts, nests, or eggs. The following conditions shall be implemented during the bald eagle breeding season. The bald eagle breeding season is from December 15 to July 31. No measures are required for unoccupied nests.

For nests that are occupied, or if the status is unknown:

The Contractor shall stage construction activities from the furthest possible distance from the nest, then move towards the nest to provide the eagles the opportunity to adjust to the activity.

To the extent practicable, the Contractor shall avoid conducting construction within 660 ft of the nest during the first three months of the breeding season.

The Contractor shall avoid construction within 660 ft of the nest before, and two hours after, sunrise and for two hours before and after sunset to allow the eagles time to care for the nestlings.

The Contractor shall minimize noise and visibility of construction activities that will occur within 660 ft of the nest and include the use of natural and artificial barriers.

The Contractor shall minimize construction activities within 660 ft of the nest. All construction personnel shall be aware of the nest location, shall conduct activities from a closed vehicle and not on foot, and limit time, unnecessary noise, and visual disturbance within 660 ft of the nest.

To the maximum degree practicable, the Contractor shall avoid conducting activities that may disturb eagles during severe weather to ensure adult eagles can provide necessary warmth and shelter for eggs and nestlings.

Activities outside of the breeding season shall be avoided that may affect the survivability of the nest tree or other natural nesting substrate. Measures shall include marking nest locations on the plan sheets, communicating nest locations and restrictions to contractors, preserving root integrity of the nest tree by avoiding heavy equipment operation, soil compaction, or ground disturbance greater than 12 in. deep within the nest tree's dripline or 50 ft, whichever is greater.

If tree clearing/trimming is required, it shall follow the bat tree clearing/trimming restrictions.

The Contractor shall comply with the special conditions listed in the Bald Eagle Depredation General Permit.

Method of Measurement

All activities associated with compliance with the BGEPA as described herein will not be measured for payment.

Basis of Payment

All costs associated with conducting work in compliance with the BGEPA as stated herein will not be paid for separately but shall be included in the cost of other items.

Chapter 7 Other Species Coordination

7.1 Introduction

For all projects that include a federal nexus (federal funding, federal permits, federal oversite, etc.) Section 7 coordination (for any species) starts with uploading project information into IPaC to document the project scope, location, and receive an IPaC species list. If the IPaC species list indicates species other than the Indiana bat, NLEB, or Tricolored bat, which are consulted on using the Rangewide Programmatic Consultation, are present in the project area the Indiana specific species key should be used to determine if it can be used for Section 7 coordination. If not, an effect determination will need to be made for impacts that could occur to the other listed species. Determination categories include NE, NLAA, or LAA. If a NE determination can be made, no additional coordination will be required with INDOT DE or USFWS. The basis for the conclusion **must** be included in the NEPA document.

The determination is independent of the determination made in IPaC. A NLAA or LAA determination for the species in question will need to be made.

If a project anticipates an NLAA determination coordination is required with INDOT DE and USFWS with a standard informal letter. The letter will be submitted to INDOT DE for review. EWPSO can assist or provide secondary reviews of standard informal coordination letters when requested. Once INDOT DE reviews and concurs with the standard informal letter it will be submitted to USFWS by INDOT for their 30-day review. USFWS will issue a concurrence letter at the conclusion of their review which may include additional firm commitments and possible mitigation for the project.

The standard informal letter will include:

- Project scope
- Why coordination is occurring with USFWS (e.g. mussel or mussel habitat present that could be impacted)
- Likely impacts that could occur to the species and surrounding habitat
- AMMs and/or commitments the project will implement
- Section 7 determination and reason that determination was made
- Request that USFWS review and concur with the determination.

7.2 Indiana Official Species List

The Indiana Official Species List is in Appendix C for all federally endangered, threatened, and proposed species. It includes common name, scientific name, listed status and date listed, and if the species is covered by the IPaC Dkey. Eight of the thirty-seven species have critical habitat in Indiana – IBAT, Piping plover, Rabbitsfoot, Round hickorynut, Salamander mussel, Sheepnose mussel, Snuffbox mussel, and Short's bladderpod.

7.3 Indiana Species of Greatest Conservation Need

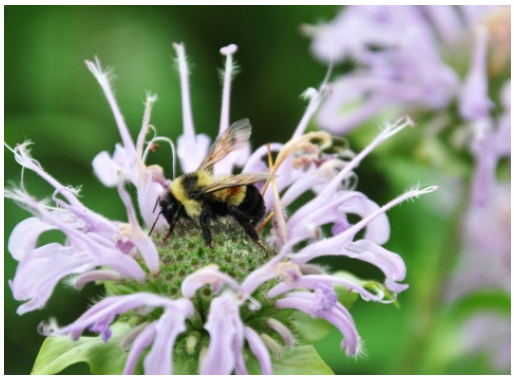
The Species of Greatest Conservation Need is maintained by the DNR Division of Fish & Wildlife. There are two categories: state endangered and state special concern. State endangered is defined as any animal species whose prospects for survival or recruitment within the state are in immediate jeopardy and are in danger of disappearing from the state. It includes all federally endangered or threatened species that occur in Indiana. State special concern is any animal species requiring monitoring because of known/suspected limited abundance or distribution or because of a recent change in legal status or required habitat. The list is grouped into six categories: mammals, birds, fish, mollusks, amphibians, and reptiles. https://www.in.gov/dnr/nature-preserves/files/fw-Endangered_Species_List.pdf The State Wildlife Action Plans (SWAP) guides management and conservation efforts for these species. https://www.in.gov/dnr/fish-and-wildlife/wildlife-resources/state-wildlife-action-plan/

Species may be identified as a species of greatest conservation need prior to being federally listed. An example is the TCB that is proposed for federal listing. Another example is the little brown bat (*Myotis lucifigus*). It was included on the 2023-2027 National Listing Workplan but was not included in the 2026-2030 workplan.

The presence of state listed species will be indicated in the DNR Early Coordination letter as part of the Natural Heritage Database check or noted in the fish and wildlife comments. Recommendations for state listed species can be listed **for consideration** in the NEPA document, unless time-of-year restrictions, modifications are required to avoid an impact to the species or habitat, or permit conditions are anticipated. In those situations, the commitments must be listed as **firm**. If those specific recommendations cannot be adhered to, further coordination will need to occur with INDOT and DNR to reach an appropriate resolution for commitment language.

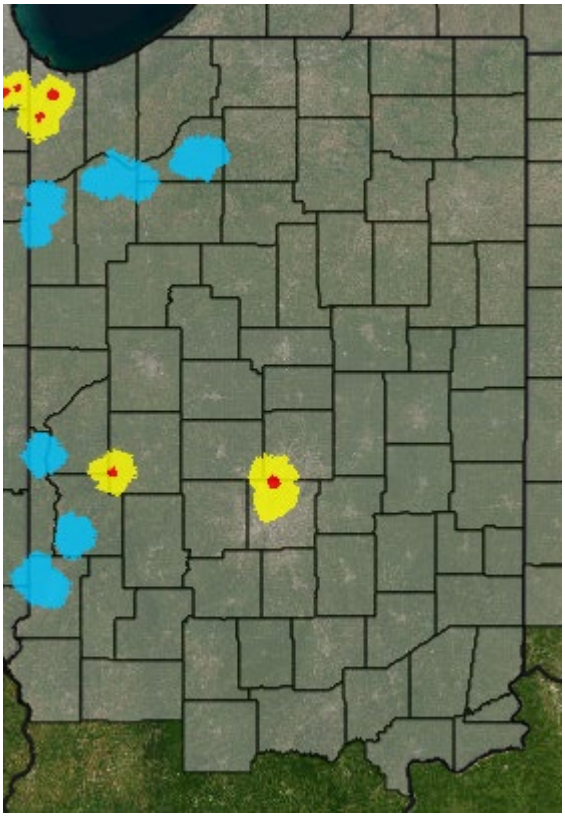
7.4 Rusty Patched Bumble Bee

The Rusty patched bumble bee (*Bombus affinis*) was listed as federally endangered in 2017. There are four high potential zones and six uncertainty zones in Indiana. No critical habitat was designated in Indiana.



Rusty patched bumble bee

https://www.fws.gov/story/saving-rusty-patch-bumble-bee



Rusty Patched Bumble Bee Map for Indiana

https://www.arcgis.com/apps/mapviewer/index.html?webmap=2716d871f88042a2a56b8001a1f1acae&extent=-100.6667%2c29.7389%2c-48.8551%2c50.9676

High Potential Zones (where presence should be presumed for ESA Section 7 purposes) 04/06/2026

Low Potential Zones (identified for scientific recovery permits and additional conservation efforts) 04/06/2026

Uncertainty Zone 04/06/2026

7.5 Monarch Butterfly

The Monarch Butterfly (*Danaus plexippus*) was moved from the "proposed rule stage" to "long-term action" in the Spring 2025 Unified Action. USFWS does not expect a final decision for at least one year. No additional coordination is required with INDOT or USFWS. If the listing status changes, INDOT and USFWS will send out additional information.



Monarch Butterflies

https://www.fws.gov/story/2023-07/monarch-butterflies-emerge-closer-look-magnificent-life-cycle

INDOT is participating in the Candidate Conservation Agreement with Assurances (CCAA) for the Monarch Butterfly. A CCAA is a voluntary agreement that provides incentives for non-federal landowners to conserve candidate and other unlisted species likely to become candidates in the future. Conservation measures include protecting and enhancing existing populations and habitats; restoring degraded habitat; creating new habitat; augmenting existing populations; restoring historic populations; and not undertaking a specific, potentially impacting/damaging activity. In return for the participant's voluntary conservation action(s), the Service issues an Enhancement of Survival Permit under section 10(a)(1)(A) of the ESA. The permit, which goes into effect if the covered species is later listed as endangered or threatened under the ESA, provides assurances that, if the species is subsequently listed and no other changes have occurred, the Service will not require the permittee to conduct any additional conservation measures without consent. Additionally, the permit authorizes a specific level of incidental take of the covered species, should listing occur. https://www.fws.gov/services/consultation-and-technical-assistance/candidate-conservation-agreements-assurances

INDOT has enrolled 89,181 acres of which 7,134 are adopted acres. The adopted acres are only a portion of the high-quality habitat enrolled in the program. Conservation measures focus on following our right-of-way management plan. This results in approximately 40,000 of the enrolled acres being mowed. Other measures include targeted herbicide treatments, woody vegetation management, and native wildflower and grass plantings. INDOT monitors 60 randomly selected sites and 151 sub-plots. The sites are evaluated for the minimum criteria of six stems (or more) of milkweeds per plot and the percent cover of nectar plants.

7.6 Freshwater Mussels

7.6.1 Introduction to Mussels

Mussels and clams are members of the invertebrate phylum Mollusca. It also includes oysters and scallops and as a group are mollusks. Mollusks typically have a soft unsegmented body, a mantle, and a protective calcareous shell. Clams and mussels are bivalves that refer to the two-part shells connected by a hinge in the back. They pump water through their gills to breathe and to filter food from the water. Twenty percent of the bivalves are found in freshwater environments. Mussels have dark blue or black shells that are oblong in shape and may have an iridescent sheen, whereas clams have stout, oval-shaped shells where both halves are the same size. Mussels will stay in one place using the secretion of thin fibers call byssal threads that allow them to stick to rocks or other mussels. https://oceanconservancy.org/blog/2021/03/19/clams-mussels-oysters/ Freshwater mussels spend their entire life partially or wholly buried in mud, sand, or gravel in permanent bodies of water, primarily streams. Mussels are usually absent from, or rare in, areas of shifting sand or deep silt. (Field Guide)

7.6.2 Mussels in Indiana

There are eleven mussel species found in Indiana that are federally (and state) endangered. Sixteen additional species are listed as state special concern. Threats to the survival of mussel species are destruction or alteration of their river habitats due to dam construction and channelization, as well as pollution and competition from invasive species such as the zebra mussel. Mussels are an indicator of stream health and help maintain water quality by filtering food, sediment, and pollutants.

In April 2026 approximately 3,814 river miles of occupied critical habitat was identified for four mussel species (three found in Indiana) in seventeen states. The rayed bean (*Villosa fabalis*) is a small mussel, measuring only about 1.5 inches and lives up to 15 years. Historically found in at least 115 streams, rivers, and other water bodies, its range has sharply declined to 37 streams. The 31 river miles (rmi) of critical habitat is on Fish Creek in Steuben and Dekalb Counties and Williams County in Ohio and 65 rmi of the Tippecanoe River in Carroll, Pulaski, Tippecanoe, and White Counties. The sheepnose mussel (*Plethobasus cyphyus*) can grow up to 5.5 inches long and live as long as 30 years. Once widespread across 79 streams, rivers, and a canal, its range has declined sharply to 22 waterways. The critical habitat is 84 rmi of the Tippecanoe River in Fulton, Marshall, Pulaski, Starke, and White Counties. Snuffbox mussels (*Epioblasma triquetra*) are small, reaching less than 3 inches in length and living up to 20 years. Historically, they inhabited more than 210 streams, rivers, and other waterways, but now only occupy 85. There are two critical habitats in Indiana: 12 rmi of the Salamonie River in Huntington County and 65 rmi of the Tippecanoe River in Carroll, Pulaski, Tippecanoe, and White Counties. The Tippecanoe habitat overlaps the critical habitat for the rayed bean mussel. Rayed bean and snuffbox prefer stable sand and gravel. The sheepnose prefer coarse sand, gravel, cobble and can tolerate mud. https://www.fws.gov/press-release/2026-04/critical-habitat-four-mussel-species

In August 2023 the USFWS posted a proposed rule to list and designate critical habitat for the salamander mussel (*Simpsonaias ambigua*). This mussel species is on the state special concern list. It requires clear, flowing water and flat rocks and bedrock that provide crevices for shelter. There are eleven watersheds, all or partially located in Indiana, where the species is extant (opposite of extinct) and one watershed where it is presumed extant. There are eight proposed critical habitats in Indiana totaling approximately 420 rmi. There are no updates to the listing status as of this writing. https://www.govinfo.gov/content/pkg/FR-2023-08-22/pdf/2023-17668.pdf

7.6.3 Further Coordination and Potential Results

7.6.3.1 Early Coordination/Environmental Assessment indicates presence of mussels in the project area. Notification may come through other sources.

7.6.3.2 Coordination with USFWS and DNR Nongame Aquatic Biologist and additional participation by ETR on call consultant may be warranted. This should take place in the planning stage and be based on all possible construction impacts.

7.6.3.3 Potential coordination results –

- No suitable habitat within project area. Include coordination results in NEPA document.
- Potential suitable habitat in project area. Mussel presence/absence survey may be required. Survey must be conducted by a qualified professional familiar with mussel species and habitat.
- Mussel survey identifies suitable habitat and/or live/dead mussel species. Response is based on species status and presence in project area, such as quantity of live mussels, life cycle stage/activity, species diversity, and impact of proposed project on mussels. Coordinate with USFWS and DNR regarding survey results and potential course of action.
- Mussel mitigation may be required to include relocation of live specimens found in project area.

7.6.3.4 The stormwater management requirement of Standard Specification Section 205 and other sections and the permit conditions will limit impacts to mussel in the project area.

7.6.4 Project Examples

7.6.4.1 Logjam removal – SR 124 at Salamonie River, Hunter County



The DNR provided a photo in Spring 2025 of the log jam at SR 124 and the Salamonie River. The log jam had changed the substrate/habitat downstream of the bridge because of the altered flow. The location had the last remaining reproducing population of snuffbox (FE) in the state. It is also in proposed critical habitat. The DNR visited the location every spring to obtain gravid females for propagation efforts. Further coordination was required with the DNR prior to the removal of the logjam.

7.6.4.2 Bridge Rehabilitation - SR 225 at Wabash River, Tippecanoe County

The rehabilitation project required access to the underside of the bridge. The plan assumed that this could be provided from barges and no coordination with the USFWS and DNR was conducted. At the time of the start of construction the contractor requested permit modifications to allow for the use of causeways due to low water levels and large sand bars that had developed under the bridge. This request was submitted by the contractor to the regulatory agencies rather than through INDOT. The DNR early coordination was concerned that fanshell mussels (*Cyprgenia stegaria*) and potential habitat was in the project area. Coordination with the DNR Nongame Aquatic Biologist determined that the fanshell mussels are very uncommon in the Wabash River and the site conditions, to include sandbars and pier scouring, led to the conclusion that the area where the causeway will be built was largely unsuitable habitat. The change to the causeway also required reevaluation of the NEPA document. This added delays for additional archaeology and approval of the revised NEPA document. As a CE-4 it required FHWA approval. The required informal coordination if done during design would have prevented a delay in the start of construction.



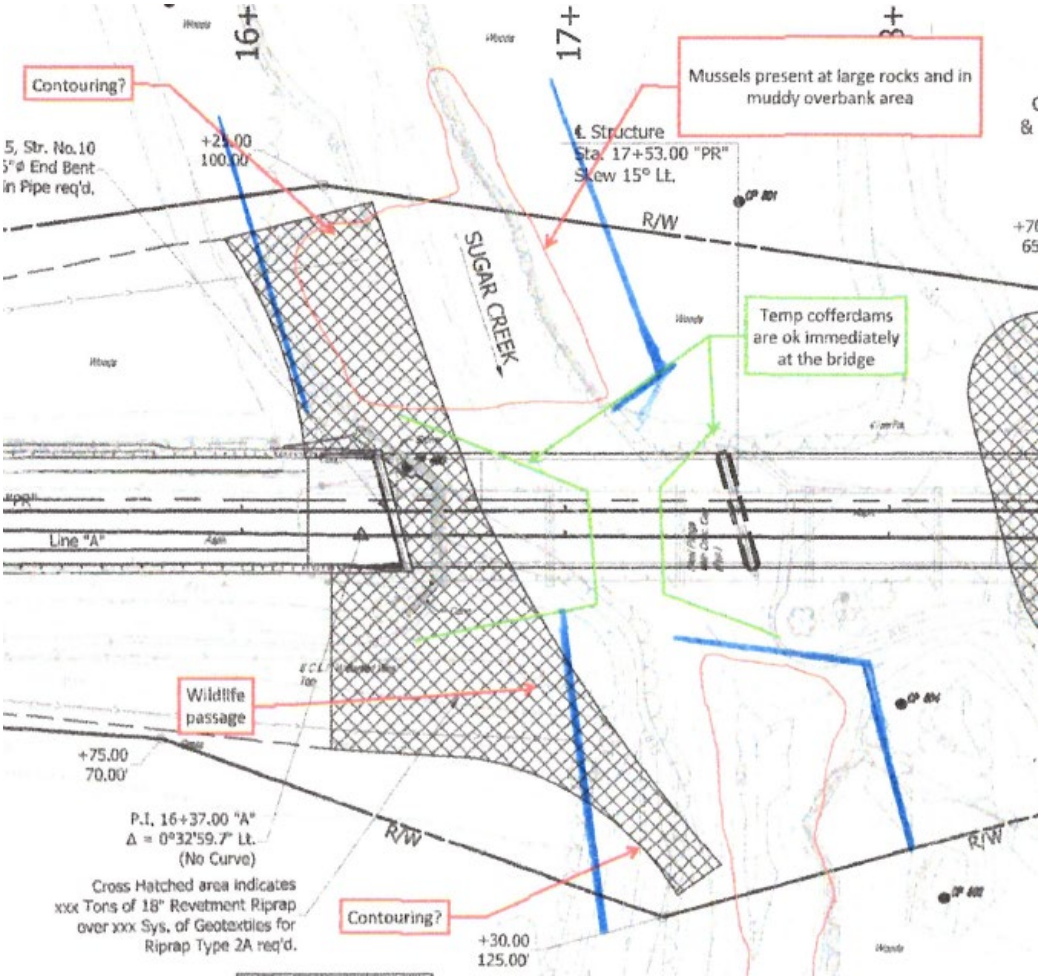
Looking southeast at the bridge from the northwest quadrant from the waters report.



Looking west at the bridge from the eastern quadrant from the waters report.

7.6.4.3 Bridge Replacement, CR 300 (Bridge 62) over Sugar Creek, Hancock County

The DNR Early Coordination/Environmental Assessment in five mussel species within 1/2 mile of the project area to include the federally endangered clubshell (*Pleurobema clava*). The EC/EA recommended not using heavy equipment in the stream channel and all work completed from the bank. It also identified the upstream west bank as an area to avoid. USFWS recommended controlling erosion/sedimentation of the work and provide a visual indicator (protected resource fence) on the bank of the areas to stay out of. The DNR marked up a plan sheet with the two areas to stay out of. The riprap envelope on the west end was reduced to minimize impacts to the mussel beds. A USP was developed requiring the installation of protective resource fence prior to the start of construction as indicated in the plans and prohibiting work inside the protected resource fence during construction.



Blue line indicates proposed locations for protected resource fence.

7.7 Other Species USPs

A project and species specific USP may be required. These are developed for both federal threatened and endangered species and state endangered and special

concern species that may be in the project area and have the potential for impact. The need for USPs will be identified by notice in the IPaC coordination documents or with the DNR Early Coordination letter. Contact the EWPSO District Ecologist with assistance in preparing these documents.

This is a USP developed for the state endangered Kirkland Snake

KIRTLAND'S SNAKE AVOIDANCE AND MINIMIZATION MEASURES

Description

During the periods between March 1 to October 31 and November 1 to February 28, work will be allowed provided the following procedures are implemented.

Materials

Materials shall be in accordance with 205.02 and the following: Cover objects shall be at least 6 in. by 6 in. with a mix of sizes used within the construction area. Objects include plywood sheets or wood pieces, metal sheets, plastic tarps, roofing shingles, and vinyl siding. Cover objects shall be free of oil, chemicals, or sticky substances.

Construction Requirements

The Kirtland's Snake (Clonophis kirtlandii), listed as a state endangered species, may be found in the project area and the excavation and placement of riprap around the piers has the potential to impact the species. Crayfish burrows are used as hibernacula therefore in all areas of earth disturbance, possibly including timber mats if they could trap snakes in underground burrows, a crayfish burrow survey shall first be conducted. Kirtland's Snake uses burrows year-round. To minimize potential disturbance to these snakes, a crayfish burrow survey shall be conducted prior to start of construction no earlier than two weeks, and shall be checked again at the installation of the silt fence. If crayfish burrows are found, a more extensive survey by an accredited herpetologist will be required in accordance with the guidelines below. A scientific purposes license shall be required by a qualified herpetologist to implement the following procedures. Indiana Department of Natural Resources, IDNR, shall be contacted regarding obtaining the scientific purposes license. A Kirtland's Snake ID Poster shall be attached to any construction information or permit board for the duration of the project. All equipment left on site overnight shall be checked for snakes before its use each day. Any snakes encountered in the project area, regardless of species, shall be removed, unharmed, and immediately placed outside the construction area in suitable habitat.

(a) For work during March 1 to October 31

A trenched-in silt fence shall encircle the entire work area as shown on the plans at least two weeks prior to construction work. Silt fence shall be installed in accordance with 205.06. Cover objects shall be placed haphazardly, not in transects, throughout the construction area. The qualified biologist shall confirm placement of cover objects. Cover objects shall cover exactly one third of the construction area. Cover objects shall be checked every day for two weeks. Objects shall be checked during temperatures determined appropriate by the qualified herpetologist. Any snakes, regardless of species, found under cover objects or within the construction area shall be moved, unharmed, outside of the trenched fencing. Snakes shall be handled with latex-free gloves. A new pair of gloves shall be used for every snake being handled. After two weeks, the cover objects shall be removed. Construction may start once the cover objects have been removed. Trenched-in silt fencing shall remain in place until completion of the project.

(b) For work during November 1 to February 28

Requirements from (a) shall apply with the exception that silt fence shall be installed at least two weeks prior to construction or no later than October 18. After two weeks, the cover objects shall be removed. Construction may start once the cover objects have been removed. Trenched-in silt fencing shall remain until completion of the project. A summary report will need to be submitted to the IDNR biologist for each step taken including the survey of the construction site for crayfish burrows and any follow up survey that is conducted should crayfish burrows or snakes be found within the construction site. If snakes are found onsite during construction, the IDNR biologist shall be contacted to notify them of the presence of any snakes. The Department's Ecology and Waterway permitting office will be the contact point should a snake be found during construction and will relay all information on any accidental discoveries to the IDNR biologist.

Method of Measurement

The installation and removal of cover objects and obtaining the scientific purposes license will not be measured for payment. Silt fence will be measured in accordance with 205.06.

Basis of Payment

Kirtland's Snake Avoidance and Minimization Measures shall be included in the cost of Clearing Right of Way. Silt fence will be paid for in accordance with 205.11.

Part III. Compliance Tools for Bats

Chapter 8. Bridge, Culvert, Pipe, and Structure Inspections

8.1 Introduction

When INDOT conducts maintenance, structural alteration, demolition, or replacement of bridges, culvert, and pipes, it must be done in a manner that will not disturb the bats using it. This process starts with an inspection and if signs of bat use are identified, the DNA analysis of guano to identify the species is required. It must be assumed that the species is federally listed until proven otherwise through DNA analysis and/or identification by a qualified biologist or other qualified individual. See 3.21. The species determination will direct the coordination and AMMs required. Bridge and structure inspections should also document bird use. See Chapter 5.

Conditions on bridges/structures that bats prefer are cracks in concrete, expansion joints, cave-like environments, and bridges over large rivers or wide floodplains. Bridges, culverts, pipes, and structures must be inspected as part of the USFWS consultation process. If the culvert is fully enclosed (under a roadway or soil), or enclosed with grills or grates, they do not require an inspection. Inspections must be completed by a qualified biologist or individual who has viewed USFWS's virtual bat and transportation structures training. Inspections are valid for two (2) years to be consistent with the Programmatic BO/CO. (2026 Survey Guidelines 12)

The USFWS Bridge/Structure Bat Assessment Form must be completed to document the inspection. Both Indiana Total Asset Management System (iTAMS) and/or environmental inspection forms must be uploaded into IPaC for review. If there are discrepancies between the inspections, research and/or additional inspections may be required before the IPaC Dkey can be completed.

Bat inspections may be conducted year-round and are not limited to the active season; however, the qualified biologist or other qualified individual should feel confident in their ability to properly assess the bridge/structure for use by bat species. If this confidence is lacking, an active season inspection should be completed. Coordinate with the appropriate INDOT DE for more details on inactive season bat inspections.

The ability to use iTAMS inspections to substitute for an inspection by a qualified biologist or other qualified individual varies by district. An engineer is focused on the structural status of the bridge and may not capture evidence of use by bats. Contact the INDOT DE prior to a decision to use an iTAMS inspection in the IPaC submittal. If the iTAMS inspection is close to 2 years old, an additional inspection will be required.

During project development, specifically the scope and fee estimate, the consultant should be aware that the NEPA document preparer is responsible for follow-up bat

inspections, not INDOT DE, to keep the bat inspection current until the start of construction. Consideration should be taken for culverts/pipes not in iTAMS that do not receive INDOT inspections and large culverts that are on a 3 to 4-year INDOT inspection cycle.

If there are multiple bridges, culverts, or pipes that require inspections for the project, a table can be completed to summarize all the inspections. A Bridge/Structure Bat Assessment Form does not need to be uploaded for each. For example:

DES Number	Structure Number	Type of Structure	Size of Structure	Length of Structure	Location	Waterbody	Date of Inspection	Evidence of Bats	Evidence of Birds	Work Type
1234567	46	CMP	4' x 4'	125'	CR 400	UNT 1 to Goose Creek	5/1/2021	No	No	Replacement

Table 8.1 Inspection Table
INDOT

A complete Assessment Form should be provided when additional information collected is not provided on the table such as required to support or document “yes” responses.

8.2 Bridge, Culvert, and Pipe Inspection Suitability

The terms bridge, culvert, and pipe are defined in Section 3.9. Culvert inspection size is based on suitability for roosts. This is different for each species.

Species	Minimum Height/ Diameter (feet/inches)	Minimum Culvert Length (feet)	Suitable Minimum Height/Diameter and Length
IBAT	4/48	23	4/48, ≥ 23
NLEB	4.5/54	23	4.5/54, ≥ 23
TCB	3/36	23	3/36, ≥ 23

Table 8.2 Culvert Suitability by Species
2026 Survey Guidelines

A culvert suitable for inspection or entry is 3 feet/36 inches or more in height/diameter, regardless of length (for safety purposes). (2026 Survey Guidelines 13)

Projects that require an inspection include but are not limited to:

- Work below the deck surface either from the underside or from above the deck surface that bores down to the underside;
- Work that could impact expansion joints;
- Work involving deck removal on bridges; or

- Work involving linings or structure demolition for bridges, culverts, and/or other structures.

8.3 Bridge, Culvert, Pipe, and Structure Inspections

Inspect all cracking, crevices, spaces, and voids along the under deck of the bridge and support beams and inner wall, such as below a fillet (concrete filling between ceiling and vertical beam). Additional features to inspect include expansion joints, vertical spaces between end walls and bridge deck, area of spall repair, drainpipes, and weepholes. Also inspect cave-like areas, recesses, and other similar features. (2026 Survey Guidelines 38)

All structures, such as houses or buildings that will be demolished, must be inspected prior to completing the IPaC Dkey. A short discussion of the results of the inspection should be included in the IPaC project description. If the structure is currently occupied, inspect the exterior and upload the inspection form to IPaC. A firm commitment will be required in the NEPA document that the structure will be inspected prior to demolition, to include the interior. If bats or signs of bats are found INDOT and USFWS must be coordinated with prior to demolition.

The Assessment Form must be uploaded to IPaC.

8.4 Inspection Equipment

Equipment for the inspection may include:
- High-powered flashlight, headlamp, or spotlight
- Binoculars and/or spotting scope
- Digital camera with video recording capability
- Data forms and writing instruments
- Mirror with telescoping handle
- Endoscope, borescope, or similar camera and light
- Telescoping pole
- Thermal sensors
- Acoustic bat detector

Other equipment for access and safety may be required, such as a mask or gloves.

8.5 Bridge, Culvert, Pipe, and Structure Inspections

Inspect all cracking, crevices, spaces, and voids along the under deck of the bridge and support beams and inner wall, such as below a fillet (concrete filling between ceiling and vertical beam). Additional features to inspect include expansion joints, vertical spaces between end walls and bridge deck, area of spall repair, drainpipes, and weepholes. Also inspect cave-like areas, recesses, and other similar features. (2026 Survey Guidelines 38)

8.6 Evidence of Bats

Evidence of bat use may be either by visual observation or audible. Visual observation includes live and/or dead bats, flying bats, bats on the bridge/structure, guano droppings, and presence of urine and/or body staining. Guano droppings accumulate on the surfaces under the roosting location or may adhere to the walls or supports such as cracks, expansion joints, piers, or cave-like areas. Urine staining may be found below locations used by bats such as below concrete support beams and walls. Other liquids, such as sealants and rust water stains, may look similar. Urine staining should only be concluded if there is other evidence to support that it is bat urine such as guano pellets under the stain. Staining is an indication of where to look for guano. Guano can be analyzed and provides conclusive evidence of bats and the species. Audible sounds include high pitched squeaking or chirping under or inside the bridge/structure or nest. In structures or parts of structures with limited air movement, odor from urine concentrations may also be perceived. The presence of one or more indicators is sufficient evidence that bats may be using the bridge/structure. (2026 Survey Guidelines 38-41)

Bats may also roost in bird nests located on bridges such as those created by swallows. Current research is focused on populations in the west. Extrapolating this research to the Midwest, bats may use unoccupied swallow nests for roosts during the spring and summer and fall migration to the winter hibernacula. This has implications for the removal of swallow nests from bridge and culvert structures prior to the start of the bird nesting season. The migratory bird nest removal restriction is “nests without eggs or young should be removed prior to construction during the non-nesting season (September 2 – April 30) and during the nesting season if no eggs or young are present.” Bats may occasionally use swallow or other bird nests from April 1 through September 30 (or through Nov. 15 in the karst area). Because of this potential use, nests should be inspected for bats before any nest removal during that period.

Bat guano are small mouse-like pellets that are black or brown and may be confused with actual mouse pellets. Bat guano looks like dark-colored grains of rice. Unlike mouse droppings, which are solid and hard, bat droppings are of a crumbly texture, which turns to powder when crushed, and has a shiny, insect-fragment-filled appearance.



Mouse Pellets

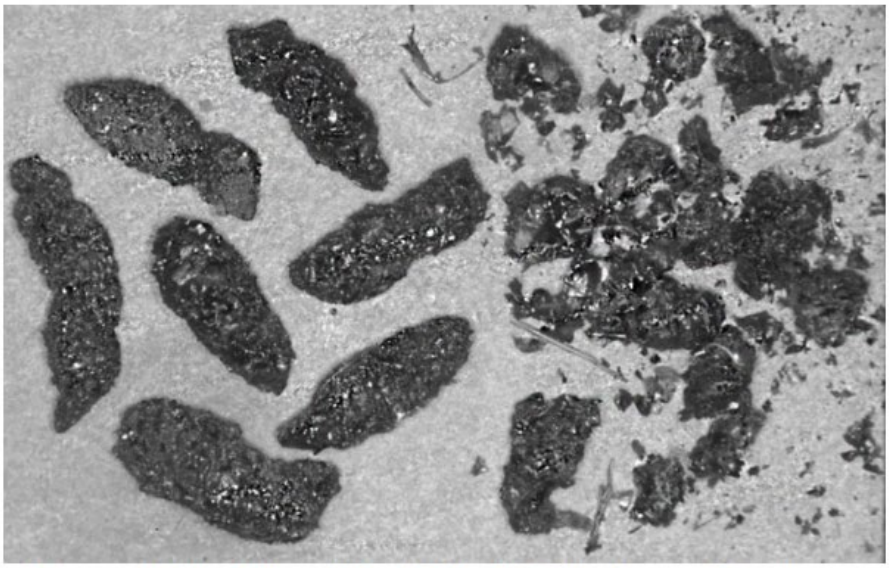


Bat Guano





Big Brown Bat and Big Brown Bat Guano



Bat guano (whole, left; crushed, right) looks similar to mouse droppings except for the shiny speckles and susceptibility to crumble. *Photo by UNL.*



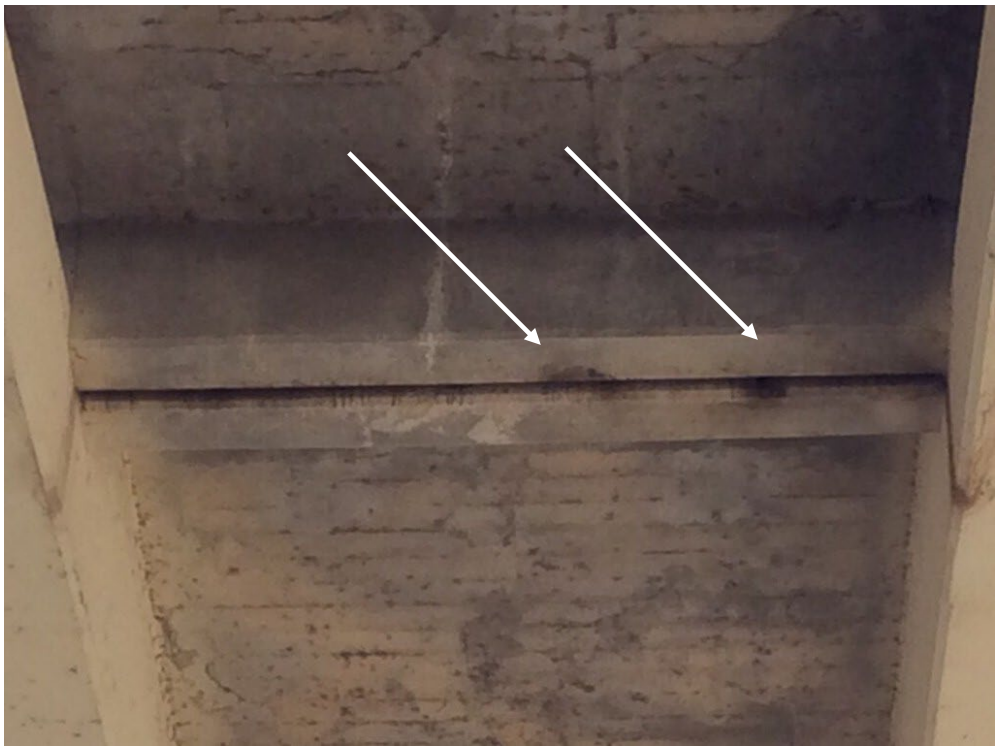
Fresh guano on creek bank



Guano on riprap



Guano deposits on bridge pier



Bat guano and urine staining



Dirt stains on concrete



Concrete sealant and rust stains



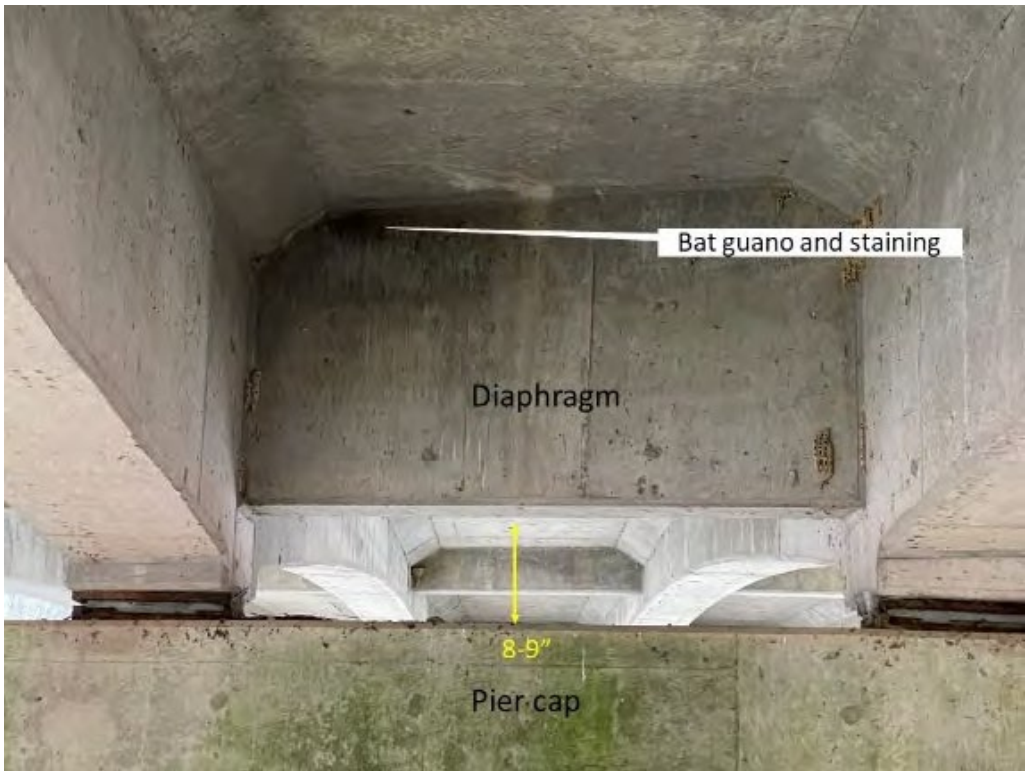
Concrete sealant running



Efflorescence and dirt staining



Rust stains on metal beam



Urine staining with guano on surface below



Typical rust staining with efflorescence



Urine staining (look for guano on surfaces below)



Indiana bats above spalled concrete



Tricolored Bats roosting on foam



Bat on bridge corner

Bat on bridge beam





Bats in gap in ceiling or expansion joint



Bats use of a historic bridge

Guano on the bridge deck





Algae stains but no signs of bats below the bridge





Bats enter opening from bridge deck



Bats roosting in small pipes or cavities created by deteriorating metals and concrete

Chapter 9 Guano Collection and Analysis

9.1 Background

The purpose of guano analysis is to obtain information about bats using the structure to determine the status, protected or not, of the species using the bridge and to guide planning decisions. Bat guano is analyzed by extracting DNA and is used to make a species-specific determination. This first step will determine if additional investigation is required such as emergence counts, mist net surveys, and/or hand capture identification. In the ideal situation fresh fecal samples are available. Fresh fecal samples will have a 95% chance at producing an accurate species determination. It also has low risk of injury or stress to the bats over other methods that are only available to qualified biologists. [DNA Sampling Methods]

9.2 Guano Collection Plan

A guano collection plan is the first step for a successful collection effort. A sample should be collected from each location or group of pellets. Different bat species have shown a preference for different locations or features and if an incomplete sample plan is used species may not be identified. There are no time-of-year restrictions for sample collection. The collection plan will ensure sufficient guano is collected to allow species to be properly identified. Additional guano sampling may be required if future field visits find unsampled locations, or the results are inconclusive. Questions to consider are:

- How is the structure configured and what areas are being used as indicated by the locations of guano and staining?
- How accessible are the identified or potential guano locations? Will additional equipment be required to access key locations on or under the structure to obtain a representative sample? All areas may not be accessible based on bridge size and safety concerns.
- How many distinct areas of guano are present, what is their relationship to each other, and what feature of the structure is above each area?

9.3 Preparation

Every structure inspection has the potential to find evidence of bat use. Be prepared for guano collection for every field visit to reduce the need for return visits. Complicated sites may require multiple visits. The required materials include a ladder, plastic sheets, headlamp or flashlight, hard hat, dust mask, camera, disposable latex gloves, writing instruments to include permanent marker, paper, clipboard, collection vials (1.5 or 15 ml, remember to check expiration date), Ziploc bags, and a collection utensil such as a spoon. (2026 Survey Guidelines 42) Collection vials can be obtained directly from Northern Arizona University or through the EWP ETR on call.

9.4 Documentation

- Complete the Bridge/Structure Bat Assessment form to include the feature type and location where bats or evidence of bats is found.
- Map areas where bats are observed or heard, and staining and/or guano are present.
- Map sample points to include vial labels and size to allow correlation of results with location, type of sample, and any notes.
- Include photographs of conditions above, on the surface, and on the ground at the time of sample collection.

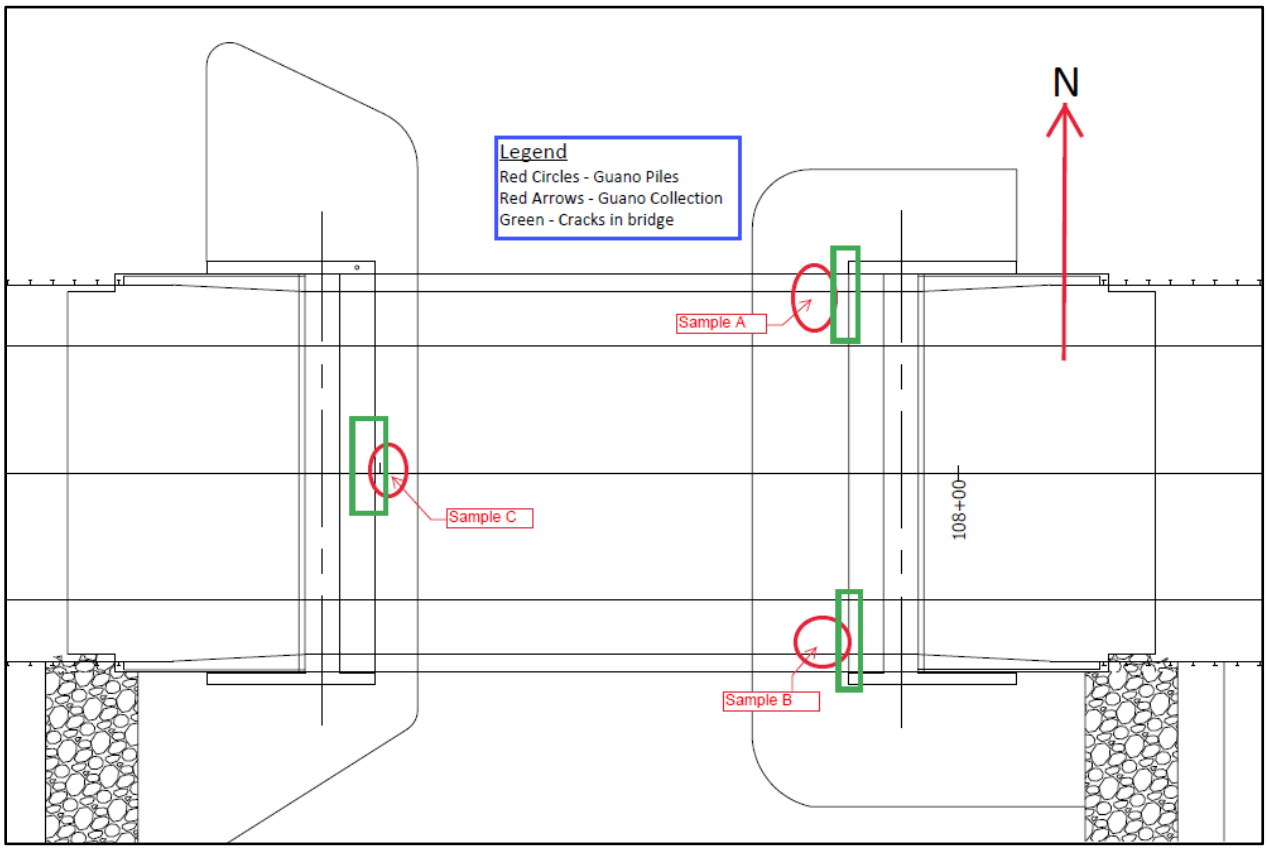


Figure 9.1. Guano collection plan drawing #1

Three large piles of guano were found below cracks and gaps on the bridge. One sample of each pile was collected. Each sample consisted of several spoons of five or more pellets per spoon.

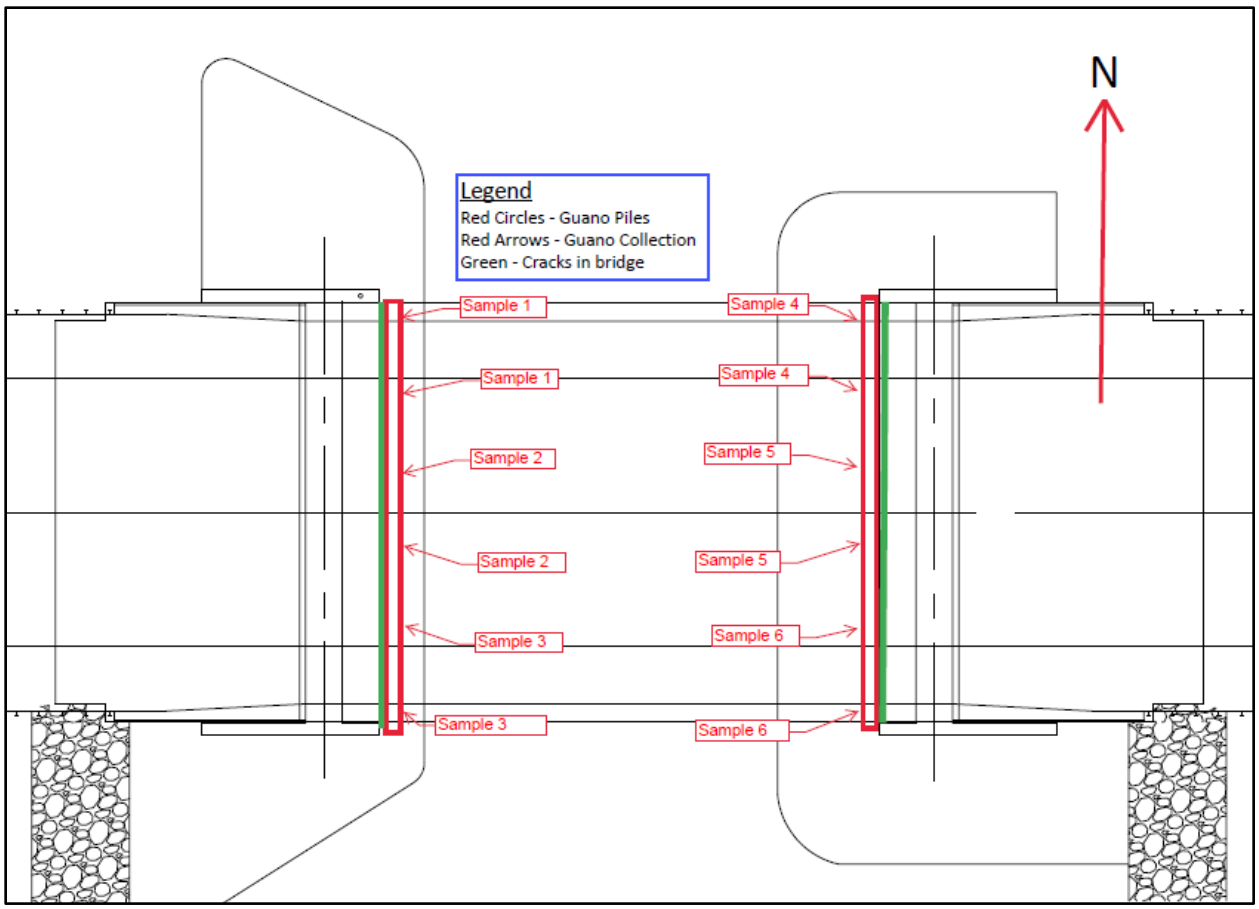


Figure 9.2. Guano collection plan drawing #2

Guano was in two lines under the bridge approach gaps where the bats were roosting. Six samples were collected, three on each side, to allow identification of species that may be using different gap locations. The sample locations were defined by the bridge arches and were located five feet from each other. The number of samples was determined by the amount and distribution of the guano and the width of the bridge.

9.5 Guano Collection

- Collect the freshest guano from locations evenly distributed across the top of the pile.
- When possible, lay plastic on top of the deposit area and collect the fresh guano that falls on the plastic on a return visit.
- The number of vials collected should be proportional to the surface area of guano under a bridge. This can be calculated based on square feet and collection of around 10-20 pellets per foot.
- Linear deposits - Collect approximately 10 pellets every square foot for 15 feet or collect a few pellets every five feet. Adjust based on length. Fill a 15 ml vial for

each linear deposit at a minimum. Adjust based on bridge width and features to ensure areas used by different species can be identified.

- Piled deposits - Collect pellets from the entire top surface of the deposit. Fill the 15 ml vial for each pile. If there are several small, localized piles it may represent different species use. These may be combined in one vial to reduce analysis cost. Document locations combined in the vile.
- Vertical surfaces - A few pellets in the 1.5ml tube should be sufficient.
- A vial with several guano locations from a bridge/structure may require further guano collection and testing if a federally listed bat is identified and further specificity regarding location is required.

9.6 Submitting Samples for Genetic Analysis

Carefully review Northern Arizona University (NAU) instructions for collecting samples and their sample processing which are available here https://in.nau.edu/wp-content/uploads/sites/51/2018/08/Guano-Collection-SOP_NAU-Bat-Team-ek.pdf https://in.nau.edu/bat-ecology-genetics/frequently-asked-questions/

The minimum sample size (six pooled samples or ten individual samples) must be collected for sample analysis. Multiple INDOT projects may combine samples to reach the minimum with coordination with the INDOT DE staff and NAU. If the project does not meet the minimum sample size and a delay in the results is not acceptable, coordination with NAU must occur. The cost will be at a higher rate.

9.7 Document Retention

Since USFWS only has access to documents uploaded within the Dkey they should be added to the project in IPaC so they also have access to documents on the IPaC project page. In addition, these documents should be saved in ProjectWise in the Ecology folder. Update IPaC with a document that includes the assessment form, plan sheets with collection plan and vial information noted, project photos, and NAU test results for INDOT and USFWS review and document storage.

9.8 Testing/Retesting Requirements

Testing or retesting requirements will be based on the situation. IPaC must be updated with the additional results. For example:

- Two previous bridge inspections have occurred. Guano testing was done for the first inspection. Guano results confirmed the presence of a listed species. Presence of a listed species is assumed regardless of future inspection results.
- Two previous bridge inspections have occurred. Guano testing was done for the first inspection. Guano results confirmed the presence of a non-listed species. If a third inspection is required and guano is present a guano test will be required to confirm current use since the test results are only valid for four years.

- The first structure inspection did not detect guano. A subsequent inspection detected guano. Guano collection and DNA analysis will be required.

9.9 Completing the NEPA Document

Include in the protected species section of the NEPA document a discussion about when the bridge/structure inspection occurred, whether the inspection did or did not find bats or evidence of bats, when guano collection occurred, and the results of the guano analysis. Include the Bridge/Structure Bat Assessment Form and IPaC pages in the appendix.

If the guano analysis identifies protected bats, additional coordination and/or surveys will be required to determine how the bats are using the bridge/structure. A Section 7 determination will be required and will extend the coordination time. The coordination will start with INDOT DE reviewing the project location, project scope, and the assessment form in the IPaC project files. Coordination with EWPSO, USFWS, and FHWA may be necessary to determine if additional work is required. AMMs may be required that will impact project scope, project design, construction timing, and/or mitigation requirements.

If the guano analysis results conclude that no federally listed bats are present, the IPaC Dkey can be completed. A short discussion about finding bats, when the bridge/structure inspection occurred, when the guano collection occurred, and the results of the guano analysis will need to be included in the IPaC project description. “No” should be answered for bats using the bridge/structure (this question only applies to federally listed bats) in the IPaC Dkey.

Chapter 10 Active Bat Season Tree Removal/Trimming

10.1 Introduction

The Programmatic Biological/Conference Opinion for Transportation Projects in the Range of the Indiana Bat, Northern Long-Eared Bat, and Tricolored Bat (USFWS 2024), lists the effects of tree removing/trimming. (Programmatic BO/CO 90) A “tree” for the purpose of tree removal/trimming are trees that are suitable habitat for each species within their range. (Programmatic BO/CO 43) Tree removal/trimming may harm bats from the loss of roosts, alteration of habitat around remaining roosts, and loss, fragmentation, and/or degradation of summer roosting/foraging habitat, spring emergence/fall swarming habitat, and forested travel corridors. In addition, direct death/injury of individual bats through removal of occupied roost trees, especially when non-volant pups or hibernating individuals are present limits tree clearing and trimming to the inactive bat season. (90) Tree removal/trimming beyond 100 feet of the road or rail surface is expected to result in adverse effects. Any project that includes clearing suitable habitat during the active season is likely to adversely affect the bat species. (108)

The Programmatic BO/CO restricts tree clearing and trimming activity to the inactive season. The inactive season for Indiana is November 16 through March 31. In Indiana, tree removal/trimming can begin on October 1 due to bat movement to fall swarming areas and hibernacula. (2026 Survey Guidelines A2) For the southern half of the state this may require additional time-of-year restrictions near hibernacula and karst features. See Table 10.1 for additional dates.

Out of Season Tree Clearing	Oct 1 – Mar 31
Inactive Season/Hibernation	Nov 16 – Mar 31
Summer Occupancy	Apr 1 – Sept 30
Pup Season	May 15 – July 31
Fall Swarming	August 16 – November 15

Table 10.1. Indiana Bat activity periods. (2026 Survey Guidelines A2)

10.2 Reduction of Active Season Tree Removal/Trimming Requests

Avoidance and minimization measures are more than AMMs generated based on IPaC responses. They are also decisions made during project planning and design that reduce impacts and can continue through construction. For example, projects may be programmed to allow tree removal during the inactive bat season by the construction contractor. In addition, districts have separate tree clearing contracts to provide for tree removal during the inactive season for the projects in the following construction season. Coordination with utilities for tree removal requirements during project planning will also reduce the need for active season tree removal. Projects that extend beyond the active season may also be able to sequence or phase the work to avoid active season tree removal.

Reasons for active season tree removal/trimming requests are:

- Project was not let as scheduled due to unacceptable bids or no bids.
- Tree removal did not account for overhead clearance for the movement of excavators, cranes, or similar equipment.
- Contractor required additional tree clearing above what was proposed by the designer.
- Project tree clearing was not included in the district tree removal contract or available funding was exceeded.
- Accelerated schedule anticipates active season tree removal. Coordination, plan development, and approval by USFWS occur during the planning process.

10.3 USFWS Active Season Tree Removal/Trimming Requirements

The following USFWS conditions must be met to request active bat season (April 1 through October 1) tree removal/trimming. The location of a project near a hibernaculum may result in the extension of the active season date. Bat hibernacula are tiered by the number of bats present. For example, Priority (P) 1 IBAT hibernacula have recorded populations of ≥ 10,000 bats whereas a P4 hibernaculum has recorded populations from 1 to 49. The active season tree removal/trimming date is extended to November 15 if the project is within ten miles of a P1 or 2 IBAT hibernacula or 5 miles of P3 or 4 IBAT hibernacula or three miles from NLEB hibernacula.

- During the pup season (May 31 through July 31) tree removal/trimming must be
    - outside of documented habitat
    - within 100 feet of existing road/rail surfaces
    - must be of trees less than (<) 9 inch diameter breast height (dbh) (User's Guide PBO/CO 7)
- Tree clearing outside of the pup season (April, August, and September), regardless of distance from the road/rail surface, will receive an LAA determination
- Restricted to ten or fewer trees per project (not locations within the project) (2026 Survey Guidelines 50)

10.4 Active Season Tree Removal/Trimming Requests

10.4.1 The need for additional tree clearing is identified by the contractor and an active season tree clearing request is submitted to the AE/PEMS. Considerations include:

- What type of project is the request for - state or LPA? Contractors on LPA projects will need to work with the AE/PEMS, Project Manager, and/or designer to obtain the services of a qualified consultant.

- Why is the request being made?
- Who bears responsibility for the cost of active season tree removal to include potential protected species on-call consultant support (USFWS coordination, habitat assessment, and report writing) and potential mitigation payment for loss of bat habitat?
- When is the removal required? Can the project schedule be modified to delay removal until after the pup season or after the active season?
- Is the request valid when considering the time required to obtain USFWS approval? Approval times will vary based on the quantity, type, location, and classification of the additional trees requiring removal. For example, several small trees greater than three inches dbh require removal. This can be evaluated by the EWPSO District Ecologist who can coordinate with USFWS if necessary. Another example is several large diameter trees near potential habitat. These trees will need to be classified based on diameter, species, stage of decay, roost status and documented with a proposed course of action. This may require consultant support and will require coordination with USFWS. Additional restrictions may be required such as an emergence survey for trees classified as potential roosts prior to removal.

After verifying the need for the active season tree clearing the AE/PEMS will coordinate with the District DE and/or EWPSO District Ecologist.

10.4.2 Information Required for the Request to EWPSO

- Project details to include reason(s) for the request and previous AMMs taken.
- Tree field identification – mark each tree requiring removal with colored tape or ribbon before taking photos.
- Documentation of the tree(s) requiring removal or trimming – location on plan sheet and photos. Photos should include a view of the trunk from a distance, canopy, and potential roosting surfaces.
- Description of each tree - species, height, size (dbh), significant features/condition (i.e. snag, exfoliating bark, large cracks/crevices, decay state), and location in relation to surrounding habitat (urban, rural, adjacent to forested habitat, etc.).

10.4.3 Decision to Continue the Request

- District DE/EWPSO analysis of the request.
- USFWS Coordination on proposed course of action.
    - Can IPaC be reopened to re-initiate coordination? IPaC is updated with new impacts. USFWS concurs. Mitigation may or may not be required.
    - Additional information is required. This may include additional habitat assessment and emergence survey for each potential roost tree. The emergence survey must be done in the evening/dusk prior to dropping potential roost trees. If bats are observed, the trees cannot be removed until the inactive season.

- If trees are not habitat, no emergence survey is required. Emergence surveys are not included in the 2024 Dkey and PBO/CO, therefore if an emergence survey is required the consultation would occur outside of the programmatic agreement. TCBs are accounted for in the Dkey and PBO/CO and cannot be discounted based on an emergence survey.

10.5 Impact of Modifications

The project modifications and implementation measures should be evaluated to determine if the NEPA documentation needs to be modified. At a minimum it may require an additional information (AI) document. This should be coordinated with the District DE or EPO.

10.6 USFWS Re-coordination through IPaC

If the project has changed since the completion of the initial IPaC, re-coordination with USFWS through an updated IPaC statement may be required. For example, during the planning process, continued efforts to avoid and minimize impacts have resulted in the reduction in the amount of tree removal/trimming. As initially coordinated, the project was an LAA with mitigation required and now the project is NLAA and no mitigation is required. Re-coordination is appropriate. Ensure that the updated documents are included in the ProjectWise Ecology folder and note the modification in the NEPA document. A second example is a project that requires additional tree removal/trimming during the active season. Evaluation of the trees indicates that the trees are not suitable habitat. This evaluation may be conducted by EWPSO or qualified individual (see 3.21) and requires coordination with USFWS on the findings.

10.7 Habitat Assessment

The purpose of a habitat assessment is to provide sufficient information as to whether suitable habitat is available within a proposed project area, including potential roost trees for summer or year-round active occupancy, potential hibernacula, and/or suitable bridge and culvert roosts. The habitat assessment should be completed by individuals with a natural resources degree or equivalent experience demonstrating skills and knowledge in area-specific ecoregions, landscapes, habitats, and ecosystems. (2026 Survey Guidelines 6-8) Support is also available through the EWPSO ETR on call. See Appendix H for the Bat Summer / Year-Round Habitat Assessment form. The amount of data required for the habitat assessment will depend on the project.

The data collected on the form includes:

- Project Area – Total acres, forest acres, and open acres and proposed tree removal (acres) – completely cleared, partially cleared, and preserved (no clearing).
- Vegetation Cover Types – pre-re and post- project.
- Landscape within 5-mile radius to include flight corridors to other forested areas and adjacent properties
- For sample site –
    - Water resources
        - stream type – ephemeral, intermittent and perennial and number and length
        - pools/ponds and their accessibility to bats
        - permanent and seasonal wetlands)
    - Forest resources
        - (Closure or density – canopy, midstory, and understory and percent of trees with exfoliating bark in each
        - Dominant species of mature trees
        - Percent trees with exfoliating bark
        - Size composition of live trees (percentage of small, medium, and large)
        - Number of suitable snags. A suitable snag is a standing dead tree with exfoliating bark, cracks, crevices, or hollows.

10.8 Emergence Surveys

For projects that do not qualify for consultation under the Programmatic PBO/CO, emergence surveys may be required if one or more trees proposed for removal meets the qualifications of a potential roost tree. USFWS will request an emergence survey prior to removal. Emergence surveys may be conducted by a qualified biologist, biological technician, and any other individual meeting the qualifications listed in 3.21. An emergence survey can be used for potential IBAT and/or NLEB roosts but cannot be used to determine presence/probable absence for TCB. TCB typical roosting locations (e.g. dead leaf cluster in the canopy of live trees) can be highly variable, making the ability to view the bat emerging difficult. (2026 Survey Guidelines 48)

Evaluations of whether potential roosts meet the criteria to conduct emergence surveys should be for each individual tree rather than groups of trees. In general, the USFWS only approves of conducting emergence survey as a means of avoiding direct take of bats for projects that only affect a very small number of potential roosts (e.g., ≤ 10) in relatively small project areas. (2026 Survey Guidelines 49 - 50) Emergence surveys must be recorded on the Bat Emergence Data Sheet. See Appendix K and added to the IPaC project and save in ProjectWise.

Emergence survey protocols –

- Emergence surveys should begin one half hour before sunset and continue until at least one hour after sunset or until it is otherwise too dark to see emerging bats
- The surveyor(s) should be positioned so that emerging bats will be silhouetted against the sky as they exit the roost
- There should be at least one surveyor per roost
- Surveyors must be close enough to the roost to observe all exiting bats but not close enough to influence emergence
- Surveyor must be able to see all parts of the tree (limbs and trunk). Trees within a woodland that are directly adjacent to other trees and whose canopy is blocked are not suitable for emergence surveys.
- Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow
- Do not stand directly beneath the roost, make noise or talk, and minimize the use of lights
- Bat activity is affected by weather. Emergence surveys should **not** be conducted when
    - Temperatures fall below 50°F
    - Precipitation, including rain and/or fog, that exceeds 30 minutes or continues intermittently during the survey period
    - Sustained wind speeds greater than 9 mph

Emergence survey findings –

- If **no** bats are observed emerging from the potential roost(s), then it may be felled immediately (i.e., in the dark) or as soon as possible after sunrise on the following day. If this is not possible the survey must be repeated.
- Immediately after the tree is felled, it should be visually inspected to ensure that no bats were present, injured, or killed. USFWS should be notified immediately if bats are discovered.
- If **one or more** bats are observed emerging from the roost, then it must **not** be felled, and the USFWS contacted for further guidance.

(2026 Survey Guidelines 48-51)

Chapter 11 Developing Contract Specific USPs for Bats

11.1 This chapter addresses USPs for listed and non-listed bats. Other USPs/RSPs can be found at section 10.10 for bald eagles, section 11.4 for migratory birds, and 11.4.2 Kirkland's Snake. Other species specific USPs may be required.

11.2 Applicable bat AMMs are generated by the FHWA/FRA/FTA Rangewide Transportation Dkey and listed in the determination key output letter. There are changes to the AMMs with the 2025 IPaC Dkey update that incorporated the Tricolored bat.

11.3 Determine if there are multiple designation numbers (DES #'s) included in the contract. Review the NEPA documentation for each DES # and identify the AMMs generated by IPaC for each DES #. The USP file name should include the lead DES #.

11.4 Use the Listed Bat Avoidance and Minimization Measures USP found at https://www.in.gov/dot/div/contracts/standards/rsp/index.html This USP will have the current approved language. There are currently two sets of AMMs. The updated IPaC has modified the tree AMMs among others. Use the wording on the project determination key output letter.

11.5 If the contract has multiple DES #'s list them under the title. If there is one designation number, it is not necessary to include it in the title.

```
BAT AVOIDANCE AND MINIMIZATION MEASURES

Des Nos _______, _______, _______, … and _______
```

11.6 Verify the AMMs developed from the IPaC responses for each DES # and only select applicable AMMs from the list for each DES #. For projects determined to be No Effect (NE) a USP with G1 and L1 should be included. This aids contracts when determining if the contract document is complete. In this example, General AMM 1 and Lighting AMM 1 applied to all DES #'s in the contract.

```
      Specific avoidance and minimization measures, AMMs, related to the Indiana
bat (Myotis sodalis), Northern long-eared bat, NLEB (Myotis septentrionalis),
and Tricolored bat, TCB (Perimyotis subflavus) required for this contract shall
be as follows:

      General AMM 1 – All operators, employees, and contractors working in areas
of known or presumed bat habitat shall be aware of all Transportation Agency
environmental commitments, including all applicable AMMs.

      Lighting AMM 1 – Temporary lighting shall be directed away from suitable
habitat during the active season.
```

11.7 If multiple Des #'s list the Des #'s between each group of AMMs that are associated with them. In this example, the Tree Removal AMMs applied to three DES #'s and the Hibernacula AMM only applied to one of those DES #'s.

_____, _____ and _____

Tree Removal/Trimming AMM 1 – Modify all phases/aspects of the project (e.g. temporary work areas, alignments) to the extent practicable to avoid tree removal/trimming in excess of what is required to implement the project safely.

Tree Removal/Trimming AMM 2 – Ensure tree removal/trimming is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree removal/trimming to ensure contractors state within clearing limits).

Tree Removal/Trimming AMM 3 – Ensure tree removal/trimming is limited to the inactive season, occurs within 100 ft of the road/rail surface, and is outside of documented habitat for the Indiana bat, NLEB, and TCB.

_____

Hibernacula AMM 1 – To avoid impacts to possible hibernacula, on-site personnel of projects located within karst areas shall use best management practices, secondary containment measures, or other standard spill prevention and countermeasures. A 300 ft buffer shall, where practicable, be employed to separate fueling areas and other major containment risk activities from caves, sinkholes, losing streams, and springs in karst topography.

11.8 **Likely to Adversely Affect** - If USFWS coordination determined that the project is likely to adversely affect (LAA), include the reporting dead or injured bats and reinitiation paragraphs. These paragraphs are not appropriate for NE or not likely to adversely affect (NLAA) projects.

The following paragraphs are included in the USFWS Technical Assistance Letter response.

Reporting Dead or Injured Bats

The FHWA, its State/Local cooperators, and any contractors must take care when handling dead or injured Indiana bats, NLEBs, or TCBs, or any other federally listed species that are found at the project site to preserve biological material in the best possible condition and to protect the handler from exposure to diseases, such as rabies. Project personnel are responsible for ensuring that any evidence about determining the cause of death or injury is not unnecessarily disturbed. Reporting the discovery of dead or injured listed species is required in all cases to enable the Service to determine whether the level of incidental take exempted by this PBO has been exceeded, and to ensure that the terms and conditions are appropriate and effective. Parties finding a dead, injured, or sick specimen of any endangered or threatened species must promptly notify this Service Office.

Reinitiation Notice

If the TCB is subsequently listed prior to completion of the action, the Transportation Agencies shall send a request to the Service to convert the Programmatic Conference Opinion (PCO) for TCB to a PBO, and request individual projects, such as this, that are completed as Conference Opinions under the PCO be converted to Biological Opinions under the PBO for the TCB. If the Service reviews the proposed action and finds that there have been no significant changes in the action as planned or in the information used during this programmatic conference, the Service will confirm the PCO as a PBO and no further ESA section 7 consultation will be necessary. Following the adoption of the PCO as a PBO, the Transportation Agencies shall request reinitiation of consultation as defined in the reinitiation notice below.

Per condition #1 above, the anticipated incidental take is exceeded when:

- the Project removes more than the requested **0.2861 acre(s)** of suitable Indiana bat habitat between 100-300 feet from the edge of pavement (or removes trees beyond 300 feet); or
- the Project takes more than 5 Indiana bats resulting from work on the bridge/structure.

In instances where the amount or extent of incidental take is exceeded, the Federal Highway Administration is required to immediately request a reinitiation of this Project-level consultation.

These paragraphs should be included in the USP.

```
      The Contractor shall not handle dead or injured bats, regardless of
species, and any other federally listed species that are found at the project
site to preserve biological material in the best possible condition and to
protect personnel from exposure to diseases, such as rabies. Project personnel
shall ensure that any evidence about determining the cause of death or injury
is not unnecessarily disturbed. Reporting the discovery of dead or injured
listed species shall be required in all cases to enable the Service to determine
whether the level of incidental take exempted by the biological opinion, BO, is
exceeded, and to ensure that the terms and conditions are appropriate and
effective. Parties finding a dead, injured, or sick specimen of any bat,
regardless of species, or other endangered or threatened species, shall promptly
notify the USFWS Bloomington Field Office at (812) 334-4261.

      A "Reinitiation Notice" shall be required if: more than _____ acres of
trees are to be cleared; the amount or extent of incidental take of Indiana bat
or NLEB is exceeded; new information about listed species is encountered; new
species is listed or critical habitat designated that the project may affect;
the project is modified in a manner that causes an effect to the listed species;
or, new information reveals that the project may affect listed species or
critical habitat in a manner not considered in the BO or the project information.
```

11.9 Bridge/Structure Assessment

Additional requirements should be included and not in a separate USP. Separate paragraphs should be included for each structure. Include the DES # above the paragraph if more than one is required for the contract. For example –

USFWS Bridge/Structure Assessment shall take place no earlier than two years prior to the start of construction. If construction will begin after _____, an inspection of the structure by a qualified individual, who has completed the online INDOT Bat Training, shall be performed. Inspection of the structure will check for the presence of bats, bat indicators, or the presence of birds. If signs of bats or birds are documented during this inspection, the Contractor shall contact the District Environmental Manager.

11.10 Include the following for all USPs.

The active season for bats is April 1st through November 15th.

For projects outside of the karst area, tree clearing/trimming shall be avoided during the maternity season, April 1st through September 30th.

"Suitable habitat" refers to the summer or winter habitat that is appropriate for use by the Indiana bat or NLEB, and may be known or unknown in terms of documented use.

"Trees" in accordance with this special provision is a pure stand of trees that are 3 in. dbh or greater, which are not mixed with larger trees or a mixed stand of trees less than 1,000 ft from a forested or wooded area.

Tree removal shall be in accordance with 201.02 and as shown on the plans. If tree removal beyond that shown on the plans is required, the Contractor shall obtain approval from the Engineer and the appropriate district Environmental Services Department before proceeding. Trees shall not be removed from wetlands or floodplain areas.

Suitable roosting sites shall remain after the structure work is complete.

At the pre-construction conference, in accordance with 108.04, the Contractor shall provide documentation that the Contractor's employees and subcontractors that will be present on the project site are aware of the environmental commitments and AMMs.

All costs associated with the bat AMMs shall be included in the cost of other items.

11.11 Example USP for gray bats. This would be a separate from USP for IPaC AMMs and should be modified for the project based on coordination with USFWS.

BAT INSPECTON AND COORDIANTION

Gray bats (*Myotis grisescens*) a federally listed bat species protected under the Endangered Species Act have been observed using the structure. Specific avoidance and minimization measures required for this contract shall be as follows:

To minimize bat disturbance, work shall be done outside the active season. If the bridge work cannot be completed during the inactive season, all crevices shall be filled with a temporary expandable material to prevent seepage into the crevices prior to the start of work. All material shall be removed at the completion of the project.

The joints or other crevices under the structure shall be inspected for bats prior to the start of construction. If signs of active use are found all work shall stop. The Contractor shall coordinate with the Engineer who will contact the Seymour District environmental staff.

Precautions shall be taken to avoid harming or killing any bats. Direct contact with a live bat shall be avoided. If a bat is harmed and unable to fly away, the Contractor shall contact the Engineer.

Any roosting areas shall still be available for bats after the bridge project is complete.

For work conducted in areas of known or presumed bat habitat, the Contractor and their field employees shall adhere to the requirements specified herein.

If night work is conducted, temporary lighting shall be directed away from any suitable bat habitat during the active season.

The active season for bats is April 1st through November 15th.

For projects outside of the karst area, tree clearing/trimming shall be avoided during the maternity season, April 1st through September 30th.

This cost work shall be included in the cost of other items.

11.12 USPs for non-federally listed bats. The agency shall implement measures to minimize impacts to non-federally listed species that are present on structures as identified through the guano DNA analysis. Coordinate with EWPSO for assistance in developing a USP appropriate for the project.

Example USP for structure to be demolished.

BAT INSPECTION AND COORDINATION

Non-federally listed bats have previously been observed using the structure.

To minimize bat disturbance, the removal of the structure shall be completed after November 15th and before April 1st. If the structure removal cannot be completed before April 1st, the crevices shall be filled temporarily, for the entire length of the structure, with an expandable material. The crevices shall be filled prior to the April 1 deadline to a "near tight" fit to eliminate any gaps suitable for bat roosting.

The structure shall be inspected for bats prior to demolition, exclusion, or any construction activities. If signs of bats are found on the structure prior to, or during, construction, the Contractor shall coordinate with the Engineer who will contact the Department's District environmental staff. Precautions shall be taken to avoid harming or killing any bats. Direct contact with a live bat shall be avoided. If a bat is harmed and unable to fly away, the Contractor shall contact the Engineer.

For work conducted in areas of known or presumed bat habitat, the Contractor and all field employees shall adhere to the requirements specified herein.

If night work is conducted, temporary lighting shall be directed away from any suitable bat habitat during the active season from April 1st to November 15th.

All costs associated with this work shall be included in the cost of other items.

Additional requirements that were added to a rigid bridge deck overlay, and partial and full depth patching project. There was documented bat use, but species confirmation was not possible.

To minimize bat disturbance, work shall be done outside the active season. If the bridge work cannot be completed during the inactive season, all crevices that have potential for materials to drip into the crevice, shall be filled with a temporary expandable material prior to the start active season (April 1) to a near-tight fit to eliminate any gaps suitable for bat roosting. All material shall be removed at the completion of the project.

The joints or other crevices under the structure shall be inspected for bats prior to the start of construction. Joints and other crevices should also be inspected just prior to the use of any foam, pouring of concrete or other viscous material. If signs of active use are found all work shall stop. The Contractor shall coordinate with the Engineer who will contact the Seymour District environmental staff.

Additional requirements were added to a structure patching project that provided the location where bats were observed and specific guidance for conducting work. There was confirmation of a non-federally listed species.

BAT INSPECTION AND COORDINATION

Non-federally listed bats have previously been observed under the structure. Bats were observed through the hole in the HMA shoulder, presumably in the joint between the reinforced concrete arch and the prestressed concrete box beam.

To minimize bat disturbance, the patching of the structure shall be completed after November 15th and before April 1. If the structure patching cannot be completed before April 1, the crevices shall temporarily be filled or covered for the entire length of the structure. The crevices shall be filled or covered outside of the active season to eliminate any gaps suitable for bat roosting.

The active season for the bats is April 1st through November 15th.

The structure shall be inspected for bats prior to demolition, exclusion, or any construction activities. If signs of bats are found on the structure

prior to, or during construction, the Contractor shall coordinate with the Engineer who will contact the Department's District environmental staff. Precautions shall be taken to avoid harming or killing any bats. Direct contact with a live bat shall be avoided. If a bat is harmed and unable to fly away, the Contractor shall contact the Department's District environmental staff.

For work conducted in areas of known or presumed bat habitat, the Contractor and their field employees shall adhere to the requirements specified herein.

If night work is conducted, temporary lighting shall be directed away from any suitable bat habitat during the active season from April 1 to September 30.

This cost work shall be included in the cost of other items.

Chapter 12 Bat Habitat Mitigation

12.1 Introduction

If the effects determination is LAA, and compensatory mitigation is required to offset adverse effects to IBAT and/or NLEB habitat, INDOT must determine the mechanism to implement compensatory mitigation. For most projects, INDOT uses the range-wide in lieu fee (ILF) program sponsored by The Conservation Fund (TCF). Two providers have established mitigation banks, The Nature Conservancy and Magnolia Land Partners. INDOT EWP will coordinate with the provider and USFWS if a change in provider is required. Permittee responsible mitigation is used when the cost and amount of mitigation required is sufficient to provide savings to INDOT.

12.2 Determine the Amount of Compensatory Mitigation Required

Projects that require mitigation payments are those with tree removal occurring in documented IBAT or NLEB habitat and/or that will involve tree removal beyond 100 feet from an existing roadway/railway. The FHWA Dkey should indicate “Rangewide In-Lieu Fee Program, The Conservation Fund” for the type of mitigation. The IPaC project description should include the total acres of trees removed, the acres removed within 100 feet of the roadway, the acreage removed between 100-300 feet, and acreage removed beyond 300 feet from the roadway/railway.

No mitigation is required for NLEB LAA if outside documented habitat in inactive season. Also, no mitigation is required for TCB because of proposed status.

12.2.1 Calculate the acreage of impacts for each action.

- Divide project impacts into the action or impact types (by location) and calculate the acreage of impacts for each action.
- Impacts < 0.5 acre where an area measurement is difficult – estimate the area canopy cover or count the number of suitable roost trees (single tree method). Multiply the number of roost trees by 0.09.
- Impacts of loss or alteration of blocks of forested habitat – identify the perimeter and area of impact with GPS or GIS technology (habitat block method). (Programmatic BO/CO 53-4)

12.2.2 Use the Compensatory Mitigation Ratios for IBAT or NLEB Table 12.1 to determine the amount of mitigation required for each action or impact type (acres of tree removal multiplied by ratio). Mitigation ratios were developed considering the impact rank of the project on the species, percent likelihood of an IBAT bat roost occurrence within a certain distance of pavement (0 to 100 feet – 3.5%, 100 to 300 feet – 8.7% and greater than 300 feet – 87.8%), timing of the habitat removal, and

percent forest cover/habitat availability of the county the project is located in. Mitigation ratios are determined by the location (≤ 100, 100 to 300, or beyond 300 feet from the edge of road/rail ballast), whether the project is in or outside documented habitat, and when the habitat impacts will occur (inside active (pup) season or inactive season). (Programmatic BO/CO 52-3)

The formula is:

(tree removal (acres)) x (mitigation ratio) x (current TCF ILF dollar amount for IN) = dollars for mitigation

12.2.3 Current dollar amount for IN – The dollar amount is reviewed annually by USFWS. For the current amount see "Estimated Cost Per Acre Land Values by Service Area – Table 2 of ILF Instrument Exhibit E" found at this link: https://www.fws.gov/program/endangered-species/bat-consultation-conservation-strategy

Use the amount in the Estimated Per Acre Compensatory Mitigation Fee for a single species (IBAT **or** NLEB).

Enter the mitigation calculation and total mitigation required in the IPaC project description.

12.2.4 INDOT DE will review the document in IPaC and send it to USFWS for a 30-day review period. USFWS will issue a verification letter concluding the IPaC review. The verification letter will include the mitigation dollar amount to be paid for the project and could also include additional commitments that must be listed as firm commitments in the NEPA document.

USFWS reference for this section is Table 1 of User's Guide at User's Guide (with Appendices A-E) for the Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat | FWS.gov

Project Location	<30% Forest Cover (within County)		≥30% Forest Cover (within County)	
	Active Season* (pup season)	Inactive Season*	Active Season* (pup season)	Inactive Season*
≤100 ft (0-30.5 m) edge of road/rail ballast – **outside documented habitat**	1.5 (2.0)	NLAA	1.25 (1.75)	NLAA
≤100 ft (0-30.5 m) edge of road/rail ballast – **within documented habitat**	2.25	1.75	2	1.5
100-300 ft (30.5-91.4 m) edge of road/rail ballast – **outside documented habitat**	2.25	1.75[52]	2	1.5[53]
100-300 ft (30.5-91.4 m) edge of road/rail ballast – **within documented habitat**	2.25	1.75	2	1.5
Beyond 300 ft (30.5-91.4 m) edge of road/rail ballast – **outside documented habitat**	3.0	2.5[54]	2.75	2.25[55]
Beyond 300 ft (30.5-91.4 m) edge of road/rail ballast –**within documented habitat**	3.0	2.5	2.75	2.25

*Consult with your local Service Field Office to determine appropriate timeframes.

[52] Compensatory mitigation is not required for the NLEB when the action area includes tree removal/trimming in undocumented habitat 100-300 ft (0-30.5 m) of the road/rail ballast during the inactive season.
[53] Compensatory mitigation is not required for the NLEB when the action area includes tree removal/trimming in undocumented habitat 100-300 ft (0-30.5 m) of the road/rail ballast during the inactive season.
[54] Compensatory mitigation is not required for the NLEB when the action area includes tree removal/trimming in undocumented habitat beyond 100 ft (30.5 m) of the road/rail ballast during the inactive season.
[55] Compensatory mitigation is not required for the NLEB when the action area includes tree removal/trimming in undocumented habitat beyond 100 ft (30.5 m) of the road/rail ballast during the inactive season.

Table 12.1 Compensatory Mitigation Ratios for IBAT or NLEB.
(Programmatic BO/CO 52)

12.3 Mitigation Payment

12.3.1 The mitigation payment is processed by EWPSO for all federally funded state projects and local public agency (LPA) projects when the payment has a state match. The USFWS verification letter will be used to determine the amount of mitigation required. If the letter is dated for a previous calendar year from the one that the payment will be made the payment must be recalculated based on current rates. This will be done by TCF when preparing the invoice.

12.3.2 The payment should be in process by the Ready for Contract (RFC) date. This will allow for AMMs to continue throughout project design that may lead to a reduction in impacts requiring mitigation or a determination that the project is now a NLAA and no mitigation is required. Projects may also be delayed or cancelled during the planning process. The paid mitigation funds are not refundable.

12.4 Mitigation Payment Example

- Step 1. Determine the percent forest cover (see Table 12.2) for the county the project is in.

  The project is in Owen County, and it has a percent forest cover of 52.00%. The mitigation ratios used from Table 12.1 are those for greater than 30% forest cover.

- Step 2. Determine the acreage of trees to be removed within the categories listed in Table 12.1.

  One acre of trees will be removed from 100-300 feet outside documented habitat in the inactive season, therefore a mitigation ratio of 1.5 is required.
  1 X 1.5 = 1.5 acres
  One half acre of trees will be removed from >300 feet outside documented habitat in the inactive season, therefore a mitigation ratio of 2.25 is required.
  0.5 x 2.25 = 1.125
  Total mitigation required is 2.625 acres

- 2.625 acres X $12,306 (CY26 rate) (single species fee, no mitigation for NLEB because in undocumented NLEB habitat and clearing in inactive season) = $32,303.25

County Code and Name	Percent Forest Cover	County Code and Name	Percent Forest Cover
18001 IN Adams	8.99	18093 IN Lawrence	47.77
18003 IN Allen	14.80	18095 IN Madison	11.44
18005 IN Bartholomew	27.32	18097 IN Marion	19.24
18007 IN Benton	6.18	18099 IN Marshall	18.78
18009 IN Blackford	12.33	18101 IN Martin	59.46
18011 IN Boone	9.79	18103 IN Miami	16.67
18013 IN Brown	72.19	18105 IN Monroe	55.56
18015 IN Carroll	15.01	18107 IN Montgomery	14.87
18017 IN Cass	16.50	18109 IN Morgan	39.17
18019 IN Clark	40.72	18111 IN Newton	14.18
18021 IN Clay	28.20	18113 IN Noble	21.59
18023 IN Clinton	9.19	18115 IN Ohio	48.29
18025 IN Crawford	64.10	18117 IN Orange	52.36
18027 IN Daviess	20.76	18119 IN Owen	52.00
18029 IN Dearborn	47.19	18121 IN Parke	38.52
18031 IN Decatur	17.99	18123 IN Perry	61.51
18033 IN De Kalb	17.90	18125 IN Pike	43.23
18035 IN Delaware	12.97	18127 IN Porter	23.11
18037 IN Dubois	36.25	18129 IN Posey	24.10
18039 IN Elkhart	18.37	18131 IN Pulaski	15.09
18041 IN Fayette	25.76	18133 IN Putnam	33.27
18043 IN Floyd	47.33	18135 IN Randolph	9.29
18045 IN Fountain	21.34	18137 IN Ripley	35.88
18047 IN Franklin	41.58	18139 IN Rush	9.90
18049 IN Fulton	14.94	18141 IN St. Joseph	41.99
18051 IN Gibson	22.16	18143 IN Scott	11.54
18053 IN Grant	12.13	18145 IN Shelby	30.84
18055 IN Greene	41.11	18147 IN Spencer	21.77
18057 IN Hamilton	14.09	18149 IN Starke	23.50
18059 IN Hancock	10.17	18151 IN Steuben	24.96
18061 IN Harrison	47.72	18153 IN Sullivan	28.89
18063 IN Hendricks	14.65	18155 IN Switzerland	51.92
18065 IN Henry	13.55	18157 IN Tippecanoe	17.83
18067 IN Howard	10.51	18159 IN Tipton	6.58
18069 IN Huntington	15.25	18161 IN Union	20.95
18071 IN Jackson	36.82	18163 IN Vanderburgh	27.25
18073 IN Jasper	13.20	18165 IN Vermillion	27.30
18075 IN Jay	10.78	18167 IN Vigo	30.55
18077 IN Jefferson	44.23	18169 IN Wabash	17.74
18079 IN Jennings	41.04	18171 IN Warren	18.23
18081 IN Johnson	18.93	18173 IN Warrick	40.24
18083 IN Knox	17.26	18175 IN Washington	42.11
18085 IN Kosciusko	18.89	18177 IN Wayne	18.76
18087 IN Lagrange	19.42	18179 IN Wells	9.98
18089 IN Lake	19.98	18181 IN White	9.70
18091 IN La Porte	22.97	18183 IN Whitley	16.98

Table 12.2 Compensatory Mitigation Ratio Percent Forest Cover (by county) https://www.fws.gov/media/compensatory-mitigation-ratio-percent-forest-cover-county. August 28, 2024

Part IV NEPA Compliance

Chapter 13 NEPA, Commitments, and Resolutions

13.1 Categorical Exclusion Level Thresholds

Categorical Exclusion (CE) levels will be impacted by the effect/affect findings generated by the IPaC response. The threshold chart and the CE manual maintained by the Environmental Policy Office should be referred to for details.

13.2 NEPA Documentation

The protected species section of the NEPA document includes a discussion about when the bridge/structure inspection occurred, if bats were found/not found during the inspection, and if applicable when guano collection occurred, and the results of the guano analysis. Include the bridge/structure inspection forms and IPaC pages in the appendix. Do not include the INDOT Bat Guano Collection form, plan sheet, photos, and guano analysis results. These documents should be uploaded to IPaC and saved in ProjectWise.

13.3 Commitments

13.3.1 Bridge/Structure Inspection(s)

This **firm** commitment must be added to the NEPA document for any project that completed a bridge/structure inspection for Section 7 coordination.

> USFWS Bridge/Structure Assessments are only valid for two years. If construction will begin after *(date of inspection, plus 2 years)*, an inspection of the structure by a qualified individual, must be performed. Inspection of the structure should check for presence of bats/bat indicators and/or presence of birds. The results of the inspection must indicate no signs of bats or birds. If signs of bats or birds are documented during this inspection, the INDOT District Environmental Manager must be contacted immediately.

Commitment resolution must include the date the inspection(s) were completed. The inspection form(s) must be uploaded into the IPaC project files and submitted to INDOT for review no later than with the Environmental Consultation Form (ECF) submittal.

Inspections must be current at the time of NEPA or ECF approval and start of construction. Coordination between the designer, DE, and INDOT Project Manager (PM) is required to determine who will complete the inspection(s). Districts may require that follow-up inspections be conducted by the NEPA

preparer. iTAMS inspections may be used to supplement the initial environmental inspection based on the project. Coordination with DE is required.

13.3.2 Bridge, House and Building Demolition

This **firm** commitment must be added to the NEPA document when the project requires removal or demolition of any bridge, building or house.

> Prior to any demolition, the structure(s) *(include the specific structures that will be removed)* will be inspected for bats or evidence of bats. If bats, or evidence of bats, are found coordination will occur with INDOT ESD and USFWS before demolition starts. If further coordination is needed no demolition can occur until coordination is concluded with INDOT ESD, INDOT DE, and USFWS.

There are two possible commitment resolutions:

- The date of the inspection and the inspection results. The inspection form(s) must be uploaded into the IPaC project files, ProjectWise, and submitted to INDOT for review no later than with the ECF submittal.; or
- A Unique Special Provision (USP) must be added to the contract documents.

13.3.3 Reinitiation

This **firm** commitment must be added to the NEPA document when it is included in the USFWS concurrence verification letter for projects with an **LAA** finding. [VERIFY LANGUAGE IN LETTER] This commitment will be resolved with the addition of a paragraph to the bat USP for the contract.

> A “Reinitiation Notice” is required if: more than *(amount)* acre of trees are to be cleared; the amount or extent of incidental take of Indiana bat and/or northern long-eared bat is exceeded; new information about listed species is encountered; new species is listed or critical habitat designated that the project may affect; the project is modified in a manner that causes an effect to the listed species; or, new information reveals that the project may affect listed species or critical habitat in a manner not considered in the BO or the project information.

Look for the following language in the USFWS Technical Assistance Letter response.

This letter concludes consultation for the Project, which qualifies for inclusion in the PBO issued to the Federal Transportation Agencies. To maintain this inclusion, a reinitiation of this Project-level consultation is required where the FHWA's discretionary involvement or control over the Project has been retained (or is authorized by law) and if:

1. The amount or extent of incidental take of Indiana bats, NLEBs, or TCBs is exceeded;
2. New information reveals that the Project may affect listed species or critical habitat in a manner or to an extent not considered in the PBO;
3. The Project is subsequently modified in a manner that causes an effect to listed species or designated critical habitat not considered in the PBO; or
4. A new species is listed, or critical habitat designated that may be affected by the Project.

Per condition #1 above, the anticipated incidental take is exceeded when:

- the Project removes more than 0.34 acres of suitable Indiana bat, NLEB, or TCB habitat beyond 100 feet from the edge of pavement, and/or
- the individual Project takes more than 5 Indiana bats, 5 NLEBs, or 5 TCBs resulting from a bridge, culvert, or structure activity.

13.3.4 Handling of Dead or Injured Bats

This **firm** commitment must be added to the NEPA document when it is included in the USFWS verification letter for projects with an **LAA** finding.

> Contractors must take care when handling dead or injured bats (regardless of species), and any other federally listed species that are found at the Project site in order to preserve biological material in the best possible condition and protect the handler from exposure to diseases, such as rabies. Project personnel are responsible for ensuring that any evidence about determining the cause of death or injury is not unnecessarily disturbed. Reporting the discovery of dead or injured listed species is required in all cases to enable the Service to determine whether the level of incidental take exempted by the BO is exceeded, and to ensure that the terms and conditions are appropriate and effective. Parties finding a dead, injured, or sick specimen of any bat (regardless of species), or other endangered or threatened species, must promptly notify the USFWS Bloomington Field Office at (812) 334-4261.

This commitment will be resolved with the addition of a paragraph to the bat USP for the contract.

13.3.5 Mitigation Payment

For INDOT sponsored projects, the mitigation payment is made by EWPSO. Provide the USFWS verification letter (and subsequent modifications if any). The payment may be delayed to closer to the letting date. EWPSO will request to have funds added to the project at that time. A commitment needs to be added to

the NEPA document for the mitigation payment. See the USFWS letter for language and amount to be paid.

For locally sponsored projects, the mitigation payment is made by the project sponsor. Provide the USFWS verification letter (and subsequent modifications if any) for the payment. A commitment needs to be added to the NEPA document for the mitigation payment. See the USFWS letter for language and amount to be paid.

For all projects, the mitigation payment needs to be completed before the ECF can be approved.

Look for the following language in the USFWS LAA verification letter response.

The FHWA used the mitigation ratio of 2.5 from Table 3 of the PBO[1] to calculate the compensatory mitigation required to offset these adverse impacts. As a result, the project requires a total of 0.85 acres[2] of tree mitigation for the Indiana bat. Mitigation is not required for the NLEB because the project is clearing in the inactive season and is not in documented NLEB habitat.

To comply with the mitigation requirements of the PBO, the FHWA will contribute $10,135.40 to The Conservation Fund (TCF), the Program Sponsor, within 1 year of this letter or prior to the start of construction, whichever is earliest. These calculations are based on the mitigation identified above[2] and the 2025 Land Use Values in Table 2 of Exhibit E in TCF's In Lieu Fee Instrument[3]. If payment is made later than 1 year from the date of this letter, the mitigation cost may change because of updated land use values in Table 2 of Exhibit E. The FHWA or designated non-federal representative, must notify TCF at least five days prior to payment so that TCF can verify that the appropriate land value has been used. At the time of payment, the FHWA or designated non-federal representative shall notify the Service of compliance with the compensatory mitigation requirements as described above.

13.3.6 Non-listed Species Guano Results

This **firm** commitment must be added to the NEPA document when guano results conclude non-federally listed bats are present. Coordination must occur at the NEPA document stage with the INDOT Project Manager, INDOT DE, EWPSO ecologist, and the designer on how the commitment can be implemented.

> *(Structure (include number and location))* has shown evidence of use (i.e. guano and/or live bats) by a non-listed bat species during the *(date)* inspection. To minimize bat disturbance, if construction occurs during active bat season on any area of the bridge/structure the bats are using, the area(s) shall temporarily be filled with an expandable material prior to active bat season. The structure shall also be inspected for bats prior to demolition, exclusion, or any construction activities. If signs of bats are documented during this inspection, the INDOT District Environmental Manager must be contacted

immediately. Details of the required procedures are outlined in the "Bat Inspection and Coordination USP."

This commitment will be resolved with the addition of a project specific USP to the contract, in addition to the IPaC AMM USP if required.

13.3.7 IPaC AMMs

All IPaC generated AMMs must be included as **firm commitments**. The commitment will be resolved with the addition of a USP to the contract.

13.3.8 Other Listed Species

Projects that have other listed species may have recommendations from USFWS through the consultation process or there may be items that the sponsor agreed to as part of the consultation letter sent to USFWS. These recommendations must be included as firm commitments in the NEPA document. Refer to the consultation letter response from USFWS for these commitments.

13.4 Unique and Recurring Special Provisions

There are USPs/RSPs that must be used to resolve most protected species AMMs and/or commitments. The USPs/RSPs can be found at the following location: https://www.in.gov/dot/div/contracts/standards/rsp/index.html

Listed Bat Avoidance and Minimization Measures (AMMs) (federally listed bats)

- The project specific AMMs and firm commitments will be included in the NEPA document.
- This specific USP must be added to the contract book to resolve IPaC AMMs.
- This specific USP must be added to the contract book to resolve additional USFWS or project specific commitments related to federally listed bats.
- This USP will be updated/modified to only include the project specific AMMs and/or commitments that have been included as firm commitments in the NEPA document and commitments database.
- AMM and/or commitment resolutions in the commitments database will state: "Included in the USP titled (title of USP) and will be included in the contract book."

Non-listed Bat Inspection and Coordination (non-federally listed bats)

- This specific USP must be added to the contract book to resolve a project specific non-listed bats commitment if it will be implemented.
- Project specific commitments will be included in the NEPA document.
- Commitment resolution in the commitments database will state: "Included in the USP titled (title of USP) and will be included in the contract book."
- Can be combined with the Listed Bat USP that is discussed above, if applicable to the project.

Other Listed Species

- Commitments for other listed species will likely need to be included in a standalone USP specific to that species. They can be combined with other USPs if this makes sense for the situation or contract.

Chapter 14 Frequently Asked Questions

14.1 What coordination is required for state funded projects?

14.1.1 State funded projects do not qualify for the Range-wide Programmatic Consultation due to the lack of a federal nexus to FHWA, FRA, or FTA. In addition, Section 7 of the ESA does not apply. If a project is under contract it is required to have a State Environmental Protection Act (SEPA) document (SCE or State EA) and this puts those projects under increased scrutiny. INDOT is responsible for protecting itself from an endangered species "take" under Section 9 and it is in INDOT's interest to reduce the risk of this occurring. USFWS early coordination responses are recommendations in this circumstance. If there is no FHWA, FRA, FTA nexus, use the Indiana Dkey in conjunction with the NLEB/TCB range-wide key to generate Tech Assistance letters for record.

14.1.2 INDOT will follow the time of year tree clearing/trimming restrictions for state funded projects. If tree clearing is proposed during the active season the following measures should be taken:

14.1.2.1 Request a half-mile check of the USFWS bat data and identify risks.

14.1.2.2 Obtain and OSL from IPaC to determine species in the project range.

14.1.2.3 Determine if suitable summer habitat exists for the identified species.

14.1.2.4 Determine if the trees proposed for clearing are suitable for roosting. Document the location (address and lat/long), DES and contract numbers, number of trees, species, size, condition and obtain photographs.

14.1.2.5 Coordinate with USFWS, by providing the IPaC output, tree data, reason for in season removal, and a description of the surrounding habitat.

14.1.3 For state endangered or special concern species identified in the DNR early coordination response AMMs should be developed and implemented. IC 14-22-34, Nongame and Endangered Species Conservation, has language like the ESA concern habitat and species.

14.2 How long is the IPaC determination valid?

There is no expiration date for an IPaC determination. Updates may be required for changes to the scope of work or impacts or if there is a new listed species or change in listed species information. For LAA projects that require mitigation the amount of mitigation must be updated based on the rates for the year of payment. This is coordinated by EWPSO with the mitigation provider.

14.3 When should/must an IPaC Dkey be updated?

14.3.1 The IPaC Dkey should be updated when:

14.3.1.1 The project footprint or location changes.

14.3.1.2 The project requires increased tree clearing or in-season tree clearing and the tree clearing affects the determination the key should be updated or if amounts change for a LAA since the amount of acres impacted is how "take" is tracked.

14.3.1.3 Changes to the project scope that will require a modification to Dkey responses.

14.3.1.4 Changes to the project scope that will result in changes to the IPaC conclusion or AMMs.

14.3.1.5 New federally endangered or threatened species are added to the Dkey or if the status of a species is changed to federally endangered or threatened. Additions of proposed, candidate, or experimental species do not require key updates.

14.3.2 The IPaC Dkey does not need to be updated if the project included a minor scope change (i.e. ROW change) that would not modify the IPaC finding or AMMs. Note on the concurrence letter in the NEPA document and the NEPA document about the change and why the IPaC Dkey was or was not updated.

14.4 What AMMs should be included in a PCE?

See the Environmental Policy Office Categorical Exclusion Level Threshold chart for current guidance.

14.5 IPaC Northern long-eared bat consultation and 4(d) rule consistency key and when to complete it?

There are three keys available in IPaC at Step 2 - evaluate Dkey options. Multiple Dkeys cannot be used if they include the same species.
1. FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting IBAT, NLEB, or TCB. This is the primary IPaC key.
2. Indiana Endangered Species Dkey. This is the new Indiana specific Dkey under development.
3. Northern Long-eared Bat and Tricolored Bat Range-wide Dkey. This can be used for state or local projects.

14.6 What projects have adjusted time of year tree restriction dates?

Projects that have adjusted time of year tree removal dates include projects located within a 10-mile buffer of a Priority 1 or 2 hibernaculum, projects located in a documented Indiana bat habitat, projects located near a roost tree, or projects that have federally listed bats using the bridge/structure. There may be additional situations that come up during USFWS coordination. The adjusted time of year tree removal dates will need to be included in the NEPA document and **added to the firm commitment/AMM language**.

14.7 Why do some projects have adjusted time of year tree restriction dates?

Forest habitat located within a 10-mile buffer of a Priority 1 or 2 hibernacula, 5-mile buffer of a Priority 3 or 4 IBAT hibernacula, and 3-mile buffer of NLEB hibernacula, is important for fall swarming/roosting and spring staging. Clearing dates should be adjusted for projects within these buffers. As bats return from their summer roosts,

they will congregate in the forests around the hibernacula to mate and continue foraging to fatten up for winter. Research indicates that areas up to 10 miles from the hibernacula are important for this activity. It does not affect the use of the IPaC Dkey, but it adjusts the "active season" dates in the AMM. There are a couple GIS layers that are checked during the 0.5-mile review to determine if the project is in the 10-mile buffer of a Priority 1 or 2 hibernacula. If the project is in the buffer area, the IPaC Dkey can still be completed and "no" will be answered for being within a 0.5 mile of the hibernacula. The time of year tree removal dates will be adjusted for Tree Removal AMM2 language. This is a concern for the Seymour and Crawfordsville districts. There may be other projects where the time of year dates are adjusted due to the project location and surrounding habitat. This should be discussed during coordination with USFWS.

14.8 Is there a minimum size limit for bridges/structures to be inspected?

The Range-Wide Indiana Bat & Northern Long-eared Bat Survey Guidelines (March 2026) provides guidance on the size of structures that must be inspected. Structures smaller than 36 inches (3 feet) in diameter at the entrance should not be entered for safety reasons even though the length is greater than 23 feet. The minimum culvert length that any species of interest has been documented in is 23 feet. Culverts that are fully enclosed or blocked (e.g. under a roadway or soil), enclosed with grills or grates, or fully obstructed in any other manner should not require an assessment. Partially enclosed or obstructed structure may be suitable and should be inspected if of the appropriate size. (13) Any bridge should be considered suitable for bat roosting and inspected.

14.9 What if iTAMS and the environmental inspection include different results for bats using the bridge/structure?

The environmental inspection(s) will override the bridge inspections results in iTAMS. If either indicates the presence of bats the answer would be yes.

14.10 What if there was guano on the bridge/structure at the initial inspection and when the collection was scheduled there is no guano present?

If a previous visit indicated evidence of use (guano, staining, or other sign) follow-up visit(s) will need to be conducted until guano sample(s) can be obtained. There is no time of year restrictions for guano collection. Guano samples that are up to a year old can be tested and result in species identification. Follow-up during the active bat season and keep a supply of collection bottles available. Presence of a federally listed species can be assumed to continue the planning process and the schedule adjusted to complete all construction during inactive bat season. When a species identification is made the schedule can be adjusted accordingly.

Appendix A References

Civjan, S., E. Dumont, A. Bennet, and A Berthaume. Investigation of Northern Long-Eared Bat Roosting Sites on Bridges. The New England Transportation Consortium. NETCR 100 Project No. 14-2. May 25, 2017.

Cummings, Kevis S. and Christine A. Mayer. Field Guide to Freshwater Mussels of the Midwest. Illinois Natural History Survey. December 1992. (Field Guide)

Indiana Department of Transportation, 2026 Standard Specifications. (Standard Specifications)

U.S. Department of Transportation, Federal Highway Administration, Specifications for the National Bridge Inventory, Publication No. FHWA-HIF-22-017, March 2022. https://www.fhwa.dot.gov/bridge/snbi/snbi_march_2022_publication.pdf

U.S. Fish & Wildlife Service. 2025. FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting IBAT, NLEB, or TCB: Determination Key Overview. [Transportation Dkey]

U.S. Fish & Wildlife Service. 2007. National Bald Eagle Management Guidelines. https://www.fws.gov/sites/default/files/documents/national-bald-eagle-management-guidelines_0.pdf

U.S. Fish & Wildlife Service. 2024. Programmatic Biological Opinion/Conference Opinion for Transportation Projects in the Range of the Indiana Bat, Northern Long-Eared Bat, and Tricolored Bat. https://www.fws.gov/media/programmatic-biological-opinionconference-opinion-transportation-projects-range-indiana-bat [Programmatic BO/CO]

U.S. Fish & Wildlife Service. 2026. Range-wide Indiana Bat & Northern Long-eared Bat Survey Guidelines. U.S. Fish and Wildlife Service Region 3, Bloomington, MN 53 pp + appendices. https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines [2026 Survey Guidelines]
Appendix A: Bat Activity Periods
Appendix B: Glossary
Appendix C: Example Forms and Data Sheets

U.S. Fish & Wildlife Service. 2024. Standing Analysis and Implementation Plan – Northern Long-Eared Bat and Tricolored Bat Assisted Determination Key. Version 1.0, August 2024. [Standing Analysis]

U.S. Fish & Wildlife Service. 2024. User's Guide for the Programmatic Biological Opinion/Conference Opinion for Transportation Projects in the Range of the Indiana Bat, Northern Long-Eared Bat, and Tricolored Bat. https://www.fws.gov/sites/default/files/documents/2025-01/user-guide-for-rage-wide-programmatic-sonsultation-for-indiana-bat-january-2025.pdf [User's Guide PBO/CO]

U.S. Fish & Wildlife Service. 2025. USFWS Recommended DNA Sampling Methods for Bat Species Identification. https://www.fws.gov/media/usfws-recommended-dna-sampling-methods-bat-species-identification [DNA Sampling Methods]

U.S. Fish & Wildlife Service. 2026. U.S. Fish and Wildlife Service Refined Range Maps for Threatened and Endangered Species. [Refined Range Maps] https://ecos.fws.gov/docs/SR_SOP/SDM_SOP_Final_April2026-1.pdf

U.S. Fish & Wildlife Service and National Marine Fisheries Service. 1998. Endangered Species Act Consultation Handbook. [Consultation Handbook]

Appendix B Acronyms

AE	Area Engineer
AI	Additional Information
AMM	Avoidance and Minimization Measure
AOI	Area of Influence
BA	Biological Assessment
BEMG	Bald and Golden Eagle Management Guidelines
BGEPA	Bald and Golden Eagle Protection Act
BO	Biological Opinion
CE	Categorical Exclusion
CFR	Code of Federal Regulations
CIF	Construction in a Floodway
CO	Conference Opinion, Central Office
DBH	Diameter at Breast Height
DE	District Environmental
Dkey	Determination Key
DNR	Department of Natural Resources
EC/EA	Early Coordination/Environmental Assessment
ECF	Environmental Consultation Form
EMU	Eagle Management Unit
EPO	Environmental Policy Office
ESA	Endangered Species Act
ETR	Endangered, Threatened, and Rare
EWPSO	Ecology, Waterway Permitting & Stormwater Office
FHWA	Federal Highway Administration
FO	Field Office
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GIS	Graphic Information System
IBAT	Indiana Bat
INDOT	Indiana Department of Transportation
iPaC	Information for Planning and Consultation
iTAMS	Indiana Total Asset Management System
LAA	Likely to Adversely Affect
LPA	Local Public Agency
MA	May Affect
MBTA	Migratory Bird Treaty Act
MBTRA	Migratory Bird Treaty Reform Act
NE	No Effect
NEPA	National Environmental Policy Act
NLAA	Not Likely to Adversely Affect
NLEB	Northern Long-Eared Bat
P/A	Presence/Absence
PBO	Programmatic Biological Opinion
PCE	Programmatic Categorical Exclusion

PEMS	Project Engineer Manager Supervisor
PM	Project Manager
RFC	Ready for Contract
RMI	River Miles
RSP	Recurring Special Provision
SEPA	State Environmental Protection Act
SLA	Species List Area
TCB	Tricolored Bat
TCF	The Conservation Fund
TOY	Time of Year
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USP	Unique Special Provision

Appendix C Indiana Official Species List

For each species, the common name, scientific name, listed status, what year it gained that status, and if it is covered by the IPaC Dkey are listed

An asterisk is marked for species with critical habitat in Indiana

Mammals (Bats)

- Gray bat (*Myotis grisescens*): Endangered [1976]
- Indiana bat (*Myotis sodalis*)*: Endangered [1967] (Covered by IPaC D-key)
- Northern long-eared bat (*Myotis septentrionalis*): Endangered [2015] (Covered by IPaC D-key)
- Tricolored bat (*Perimyotis subflavus*): Proposed Endangered (Covered by IPaC D-key)

Birds

- Eastern black rail (*Laterallus jamaicensis jamaicensis*): Threatened [2020]
- Piping plover (*Charadrius melodus*)*: Endangered [1985]
- Rufa red knot (*Calidris cantus rufa*): Threatened [2014]
- Whooping crane (*Grus americana*): Experimental Population, Non-Essential

Reptiles

- Copperbelly water snake (*Nerodia erythrogaster neglecta*): Threatened [1997]
- Eastern massasauga [=rattlesnake] (*Sistrurus catenatus*): Threatened [2016]

Amphibians

- Eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*): Proposed Endangered

Clams

- Clubshell (*Pleurobema clava*): Endangered [1993]
- Fanshell (*Cyprogenia stegaria*): Endangered [1990]
- Fat pocketbook (*Potamilus capax*): Endangered [1976]
- Longsolid (*Fusconaia subrotunda*): Threatened [2023]
- Northern riffleshell (*Epioblasma rangiana*): Endangered [1993]
- Orangefoot pimpleback [pearlymussel] (*Plethobasus cooperianus*): Endangered [1976]
- Pink mucket [pearlymussel] (*Lampsilis abrupta*): Endangered [1976]
- Rabbitsfoot (*Quadrula cylindrica cylindrica*)*: Threatened [2013]
- Rayed bean (*Villosa fabalis*)*: Endangered [2012]
- Ring pink (*Obovaria retusa*): Endangered [1989]
- Rough pigtoe (*Pleurobema plenum*): Endangered [1976]
- Round hickorynut (*Obovaria subrotunda*)*: Threatened [2023]

- Salamander mussel (*Simpsonaias ambigua*)*: Proposed Endangered
- Sheepnose mussel (*Plethobasus cyphyus*)*: Endangered [2012]
- Snuffbox mussel (*Epioblasma triquetra*)*: Endangered [2012]

Insects

- Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*): Endangered [1991]
- Monarch butterfly (*Danaus plexippus*): Proposed Threatened
- Rusty patched bumble bee (*Bombus affinis*): Endangered [2017]
- Western regal fritillary (*Argynnis idalia occidentalis*): Proposed Threatened

Flowering Plants

- Eastern prairie fringed orchid (*Platanthera leucophaea*): Threatened [1989]
- Leafy prairie-clover (*Dalea foliosa*): Endangered [1991]
- Mead's milkweed (*Asclepias meadii*): Threatened [1988]
- Pitcher's thistle (*Cirsium pitcher*): Threatened [1988]
- Short's bladderpod (*Physaria globosa*)*: Endangered [2014]
- Short's goldenrod (*Solidago shortii*): Endangered [1985]
- Virginia sneezeweed (*Helenium virginicum*): Threatened [1998]

Critical Habitats

- Indiana bat (*Myotis sodalis*): Final [1977]
- Piping plover (*Charadrius melodus*): Final [2001]
- Rabbitsfoot (*Quadrula cylindrica cylindrica*): Final [2015]
- Rayed bean (*Villosa fabalis*): Final [2026]
- Round hickorynut (*Obovaria subrotunda*): Final [2023]
- Salamander mussel (*Simpsonaias ambigua*): Proposed
- Sheepnose mussel (*Plethobasus cyphyus*): Final [2026]
- Short's bladderpod (*Physaria globosa*): Final [2014]
- Snuffbox mussel (*Epioblasma triquetra*): Final [2026]

As of 10/2026

Appendix D Using the USFWS IPaC System for Consultation

D.1 Useful Links

Consultation and Conservation Strategy for Listed Bats - (FHWA/FRA/FTA Section 7 Range-wide Consultation for Indiana Bat, Northern Long-eared Bat, and Tricolored Bat) - https://www.fws.gov/program/endangered-species/bat-consultation-conservation-strategy

Environmental Conservation Online System (ECOS) - https://ecos.fws.gov/ecp/

Information for Planning and Consultation (IPaC) - https://ecos.fws.gov/ipac/

IPaC Beta - https://ipacb.ecosphere.fws.gov/

User's Guide (with Appendices A – E) for the FHWA/FRA/FTA Section 7 Range-wide Consultation for Indiana Bat, Northern Long-eared Bat, and Tricolored Bat- https://www.fws.gov/media/users-guide-appendices-e-range-wide-programmatic-consultation-indiana-bat-and-northern-long Includes Appendix D. Bridge/Culvert and Structure Bat Assessment Form

D.2 Process

D.2.1 Early coordination letters should not be automatically sent to USFWS. The primary means of communication for most projects is through IPaC. Coordinate with DE if there are questions.

D.2.2 Consultant/Preparer enters information in IPaC.

D.2.2.1 Collect the following information before starting:

- Project details - scope of work, project limits, timing of proposed work, vegetation removal, additional lighting, etc.
- USFWS database check results (0.25-mile (or 0.5 mile for hibernacula) bat review) of captures, roosts, maternity colonies, and hibernacula.
- USFWS species list for the project area
- Bridge/structure inspection(s) documentation
- Site visit observations
- Habitat assessment results
- INDOT Bat Guano Collection documentation

D.2.2.2 Entering information in IPaC

Project location – Upload the location shapefile or draw the location and the map.

Project name – Include designation Number(s) (DES), primary road name/number, and a short project description in the title (i.e., Bridge Project, Small Structure Project, Roadway Project).

Project description – Description should include what USFWS is interested in and not the full project description. At a minimum include:

- Scope of work, the project limits, and bridge/structure(s) involved (including bridge number and NBI number/structure number if applicable).
- Suitable summer habitat located within or adjacent to the project, quantity removed/trimmed (acres), dominant trees species to be removed/trimmed, and time of year
  - Total amount of tree trimming and/or clearing required.
  - Distance from roadway – within 100 feet, 100 to 300 feet, or beyond 300 feet and acres from each.
  - Re-coordination with INDOT and USFWS will be required for modifications of quantities after the NEPA document is approved.
- Database/bat review (0.25 or 0.5) results and date of review. Review results should be general. Updates may be required.
- Short description of bridge assessment including date and whether signs of bats were found.
- Bat guano documentation.
  - Guano analysis results (if required) include sampling plan, genetic analysis results, and photos.
  - Completed bridge inspection form. Indiana Total Asset Management System (iTAMS) results may not be allowed by INDOT DE.
  - Structure or building inspection form(s) for any that will be removed due to the project.
- Estimated construction timeline (not letting date)
- Temporary or permanent lighting requirements
- Mitigation (if required) to include the In-lieu fee calculation (acres of tree clearing x county ratio x (current dollar amount for IN) = dollars for mitigation) in the project description.

D.2.2.3 Completing the Determination Key:

Read each question carefully and answer based on the scope and potential project effects. If unsure about the appropriate answer discuss it with the project manager or designer. INDOT DE can help with interpreting a question.

- The major karst region for the purposes of IPaC are projects located in the Crawford Upland, Mitchell Plateau, and Muscatatuck Plateau. Answering yes to this Dkey question will likely generate the Hibernacula AMM1.

- Temporary lighting may be required based on district policies regarding night work, to support the construction schedules, or MOT. If there is any possibility for night work the answer should be “yes.” A “no” may require a firm commitment and Unique Special Provision (USP) prohibiting night work.
- Permanent lighting includes roadways, bridges, culverts, or structure lighting and does not include traffic or railroad signals or vehicle headlights. The two following questions are regarding the use of the BUG (Backlight, Uplight, and Glare) system. Both questions can be answered “yes” because the replacement permanent lighting will not be substantially different than the baseline light conditions.
- Mitigation will be provided through the “Rangewide In-Lieu Fee Program, The Conservation Fund”.
- If the IPaC species list does not generate any additional species (other than the IBAT, NLEB, or TCB), N/A should be answered for the other species determination questions in IPaC. Candidate species or experimental populations do not require determination and should be N/A.
- Upload any documents needed to support the assertions made in the Dkey. Required documents include bridge or structure inspection form(s) and bat guano analysis documentation. Only include the title page and bat observation page of iTAMS inspections.
- Project membership should include the project team to provide access to the IPaC document for review, approval, and future modification if required.
    - USFWS
    - INDOT DE project county or lead DES county if multiple as designated by PM
- INDOT DE is the first contact for all bat coordination and questions, and INDOT DE will coordinate with USFWS.
    - NE - send an email to the INDOT DE with the project DES number and a request for review of the IPaC.
    - NLAA - send an email to the appropriate INDOT DE with the project DES number, the USFWS record locator number (from the concurrence verification letter), and a request to verify the project.
    - LAA - projects receive limited formal range wide programmatic consultation. For LAA projects, add the appropriate INDOT DE as IPaC project members and email the Technical Assistance letter to the INDOT DE with a request to continue the IPaC review and coordination with USFWS.
- When the Dkey is complete, submit it to the INDOT DE for review. They will review the information for accuracy and submit it to USFWS. For NLAA determinations USFWS has a 14-day review period. For LAA determinations USFWS receives a 30-day review period, and the project will receive a USFWS concurrence letter.

D.3 Avoidance and Minimization Measures

All AMMs become firm commitments. Discuss the AMMs with the project designer and INDOT Project Manager before finalizing the IPaC Dkey to ensure the AMMs can be accommodated in the project scope and/or schedule. For LPA projects include the Employee in Responsible Charge (ERC). In some cases, altering the project schedule or scope can reduce the burden of the AMMs and required commitments.

D.4 USFWS Responses

D.4.1 – No Effect (NE) – List of IPaC generated threatened and endangered species and Concurrence Verification Letter with no AMMs.

D.4.2 – Not Likely to Adversely Affect (NLAA) – List of IPaC generated threatened and endangered species and Concurrence Verification Letter with AMMs.

D.4.3 – Likely to Adversely Affect (LAA) – List of IPaC generated threatened and endangered species and Technical Assistance Letter with AMMs. The Technical Assistance Letter will include the mitigation amount and require the reasonable and prudent measures and reinitiation paragraphs added to the USP. USFWS will respond with a verification letter.

D.4.4 – Projects that cannot rely on the Programmatic Biological Opinion/ Conference Opinion – List of IPaC generated threatened and endangered species, early coordination response, consultation with USFWS to determine if level of consultation required (standard informal or formal consultation, proponent prepared biological assessment, and USFWS biological opinion to include incidental take statement.

D.5 NEPA Document and Commitments

D.5.1 Include the appropriate species list, IPaC letter, and inspection form(s) in the NEPA document appendix. iTAMS inspections should only include the title page and bat results page of the inspection. If applicable, do not include the guano collection plan and the guano analysis results in the NEPA document appendix.

D.5.1.1 - NE, include the OSL, consistency letter, iTAMS inspection and/or environmental inspection.

D.5.1.2 - NLAA, include the OSL, the full concurrence letter, iTAMS inspection and environmental inspection. (If the project completes standard informal coordination there may be different attachments to the CE document)

D.5.1.3 - LAA, include the OSL, full consistency letter, the USFWS concurrence letter, iTAMS inspection and environmental inspection.

D.5.2 Commitments: Record all AMMs as firm commitments in the NEPA document and commitments database. If a USFWS concurrence letter or LAA technical assistance letter is received there may be additional firm commitments from the letter that will need included. Lastly, there may be additional firm commitments required for the project. Refer to the most current Protected Species on the EPO website for more information regarding commitments and appropriate resolutions.

D.6 Changes in Scope

If project scope changes occur after IPaC completion and approval, IPaC may need to be updated and re-coordination occur with INDOT and USFWS. If it is unclear whether IPaC coordination needs updated, coordinate with the INDOT DE. A few common examples of scope changes that require IPaC updates include:

- Project footprint or location change.
- Tree clearing needed for the project is increased.
- Any scope change that causes an IPaC Dkey answer to change.
- Any scope change that will cause the concluding IPaC determination or AMMs to change.
- Another species gets added to a Dkey (look for guidance from INDOT and USFWS).

D.7 Dkey and Official Species List Updates

The OSL should only be updated if INDOT DE requests it or if there has been an update as to what species or habitats are included on the OSL or the Dkey. The last update was December 13, 2024, when the tricolored bat was added. There are no effects to the project if the OSL is updated. If the NEPA document has not been approved and the OSL was generated before then it will need to be updated. Before updating the OSL or D-key verify the need with INDOT DE. Updating the OSL does not require updating the Dkey.

D.8 Effect Determinations for Other Species Not Covered by IPaC

D.8.1 No Effect Determinations

- NE determinations do not require USFWS review, but they need concurrence from INDOT DE.
- Refer to the USFWS species specific website to obtain the information to support the NE determination, such as habitat requirements.
- The justification should demonstrate how the project will have NE on the species.

Example: “Suitable habitat for the rabbitsfoot mussel includes small to medium sized streams and some larger rivers with bottom substrates of sand and gravel. No streams with sand and gravel substrate were identified within the project area. UNT 1 to Myers Ditch is a perennial stream with predominantly muck and silt substrate. Most mussels live in flowing water, so an intermittent stream would not likely provide suitable habitat. This stream has a drainage area of less than 2 square miles and experiences extensive siltation. Therefore, we have determined the project will have no effect (NE) on the rabbitsfoot mussel.”

D.8.2 Not Likely to Adversely Affect Determinations

D.8.2.1 Gray bat (when NLAA for Dkey bats per IPaC only)

- The Gray Bat Streamlined USFWS Consultation Clearance Letter (June 25, 2025) can be applied
- No consultation with USFWS or INDOT DE is needed, but it should be discussed in the CE

D.8.2.2 Any other species (including gray bat under other circumstances)

- Consultation with USFWS is required
- The INDOT DE will review a determination letter that describes the impacts to the species from the project
- The INDOT DE will submit the letter to USFWS for concurrence
- The findings should be included in the IPaC project summary.

D.8.3 Likely to Adversely Affect Determinations

- The USFWS must be consulted with all LAA determinations
- Confirm with the INDOT DE that LAA determination is appropriate for the species and project
- The INDOT DE will review a determination letter that describes the impacts to the species from the project
- INDOT DE will submit the letter to USFWS for concurrence

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Appendix E Programmatic Consultation for Transportation Projects affecting IBAT, NLEB, or TCB Determination Key

This is the comprehensive list of all questions that are part of the Dkey. Appropriate follow-up questions will be asked based on the answers provided.

Qualification Questions

1. Which federal agency is the lead federal action agency?

   FHWA for all projects that include a federal nexus (federal funding, federal permits, federal oversite, etc.). If the project is 100% state funded the IN all species key and the NLEB/TCB Rangewide key for non-FHWA/FRA/FTA projects can be used.

2. Does the Action Area intersect the species list area of the northern long-eared bat?

   Answered automatically based on project location.

3. Does the Action Area intersect the species list area of the Indiana bat?

   Answered automatically based on project location.

4. Does the Action Area intersect the species list area of the tricolored bat (TCB)?

   Answered automatically based on project location.

5. Is the project within 0.5-mile radius of an entrance/opening to any known Indiana bat hibernaculum?

   This is determined during the 0.5-mile bat review. If this is answered “yes” the project does not qualify to use the IPaC Dkey. Key completion should continue until notified.

6. Is any portion of the action area within a 0.5-mile radius of an entrance/opening to any known NLEB or TCB hibernacula?

   Answered automatically based on previous questions. This answer is based on a map with proprietary information. If you have additional questions contact the DE.

7. Does your project's activities include raising the road profile above the tree canopy in documented habitat for the IBAT, NLEB, or TCB?

   See Section 3.12 for documented habitat definition.

8. Is your project located within a karst area?

   If a project is in the major Indiana karst region, this question should be answered “yes.” The major Indiana karst region includes the physiographic regions of the

Crawford Upland, Mitchell Plateau, and Muscatatuck Plateau. The *Protection of Karst Features during Project Development, Construction, and Post-Construction* guidance applies to the Indiana Karst Region. This is the portion of Indiana located below the Wisconsin Glacial Limit.

Answering "yes" to this question may generate the Hibernacula AMM1.

9. Will the project include any activities that alter the entrance or environment of a known Indiana bat, NLEB, or TCB hibernaculum?

10. Will the project include bridge, culvert, or structure removal, replacement, and/or alteration activities?

    See Section 3.9 for definitions.

11. Do your project's activities involve tree removal/trimming, temporary lighting, new/additional permanent lighting, ground disturbance, percussives that involve noise/vibration above existing background levels, vibrations, or slash pile burning?

    See Section 3. 20 for percussive definition.

12. Is there suitable summer habitat for the Indiana bat, NLEB, or TCB within the project action area?

    See Section 3.26 for suitable summer habitat definition.

13. Have P/A [presence/absence] surveys for the Indiana bat, NLEB, or TCB been conducted within the suitable summer habitat located within your project action area?

    This refers to mist-netting or acoustic surveys, not bridge assessments.

14. Did the P/A surveys detect Indiana bats, NLEBs, or TCBs?

    If Indiana bats, NLEBs, or TCBs are detected, the action area is considered documented habitat.

15. Did the local Service Field Office verify that this P/A survey can be used to determine Indiana bat, NLEB, and TCB are not likely to be present within the suitable summer habitat located within your project area?

<u>Tree Removal and Trimming</u> (questions 16 – 20, 66 – 73)

A tree for these questions includes specimens greater than or equal to 3-inch dbh and it may be either living or dead. If a species list includes IBAT but not the NLEB, the suitable roost tree size is 5-inch dbh. If the project will remove or trim any trees 3-inch dbh (5-inch if only in Ibat) or greater in size, "yes" should be answered.

Consider the time between completion of IPaC and construction when determining tree size.

16. Will the project involve the removal or trimming of trees within suitable habitat for the IBAT, NLEB, or TCB?

17. Will any tree removal or trimming occur during the bat pup season?

    See Section 3.3 for pup season definition.

18. Will the removal or trimming of trees occur within documented habitat for the IBAT, NLEB, or TCB?

19. Will all tree removal or trimming occur within 100 feet of the road or rail surface?

    Use the edge of pavement when determining feet from existing road/rail surfaces. Existing road/rail surfaces are those in active use by public traffic or a railroad. Parking lots, driveways, or business drives may be considered existing road/rail. For example, rest area parking lots are due to the frequency of traffic moving in and out in comparison to a long gravel drive to a cabin with infrequent use.

20. Will your project involve the removal or trimming of trees ≥ 9 inch diameter at breast height (DBH)?

Exclusion (question 21)

21. Does your project include activities involving the temporary or permanent exclusion of Indiana bats, NLEBs, or TCBs from a bridge/culvert or structure that is occupied by a large number of covered bats (>5)?

    Exclusion is conducted to deny bats' entry or reentry into a bridge/culvert or structure and should be done according to established standards. Coordinate with the Bloomington USFWS Field Office for assistance.

Lighting (questions 22 – 27)

22. Does your project involve the use of temporary lighting within Indiana bat, NLEB, or TCB suitable habitat?

    Lighting refers to roadway and bridge/culvert or structure lighting, and not vehicle headlights, signal lighting and/or railroad crossing signals. (User's Guide PBO/CO)

23. Will the use of temporary lighting be conducted during the Indiana bat, NLEB, or TCB active season?

    The active season for Indiana is April 1 to November 15, but for lighting and tree clearing the summer occupancy timeframe (April 1 to Sept. 30) is used. If the project is within one of the hibernacula buffers where swarming may happen the November

15 date should be used. For tree removal, having another 6 weeks to operate is important.

Temporary lighting includes any construction or nighttime lighting needed for the construction of the project. Temporary lighting will not stay in the project location past construction activities. If it is unknown, it is best to answer “yes” to this question. If “no” is answered and changed later in project development, the IPaC Dkey will need to be updated. Some districts require this to be “yes” based on construction schedules.

24. Will temporary lighting be directed away from Indiana bat, NLEB, or TCB suitable habitat?

25. Will the project substantially increase baseline light conditions via the use of permanent lighting (replacement or new/additional) in suitable habitat?

26. When installing new/additional permanent lighting, can downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting) be used?

27. For those Transportation Agencies using the Backlight Uplight and Glare (BUG) system developed by the Illuminating Engineering Society, can the project be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable?

Percussive Activities (questions 28 – 33)

28. Will your project include percussive activities?

See Section 3.20 for percussive definition.

29. Are the percussive activities only related to tree removal/trimming or bridge/ culvert structural work?

30. Will the percussive activities involve noise/vibration above existing background levels?

31. Will percussive activities that involve noise/vibration above existing background levels be conducted during the bat active season?

32. Will the percussive activities that involve noise/vibration above existing background levels be conducted greater than 100 feet from the road or rail surface?

33. Will any percussive activities that involve noise/vibration above existing background levels be conducted during the bat pup season?

Bridge Removal, Replacement, and/or Alteration (questions 34 – 42)

34. Will the project include bridge removal, replacement, and/or alteration activities?

35. Is there any suitable habitat for the Indiana bat or NLEB within 1,000 feet of the bridge (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)?

36. Has a Bridge Bat Assessment been conducted within the last 24 months to determine if the bridge is being used by the Indiana bat, NLEB, or TCB? If yes, upload assessment.

    See pages 11 - 13. (2026 Survey Guidelines)

37. Please select one of the following results of the Bridge Bat Assessment:

    a) Indicates that a large number of Indiana bats, NLEBs, or TCBs may be using the bridge (more than 5 bats).

    b) Indicates that a small number of Indiana bats, NLEBs, or TCBs may be using the bridge (< 5 bats).

    c) Indicates the *absence* of Indiana bats, NLEBs, or TCBs roosting in/under the bridge (no bats, guano, etc.).

38. Has the local Service Field Office confirmed that Indiana bats, NLEB, and TCBs are not using bridges within the action area?

    See Section 3.2 for action area definition. The answer should be no.

39. Will bridge removal, replacement, and/or alteration activities occur during the winter hibernation period (inactive season)?

    The inactive season for Indiana is November 16 – March 31.

40. Have hibernating bats been observed using the bridge?

    If hibernating bats other than Indiana bat, NLEB, or TCB is observed, please coordinate with the DE. They will work with the EWPSO ecologist, Bloomington USFWS Field Office and the DNR.

41. Will suitable roosting habitat still be available within the bridge once construction/ replacement is complete?

    Suitable roosting sites may be incorporated into the design of a new bridge.

42. Will bridge removal, replacement, and/or alteration activities conducted during the active season **avoid** disturbing roosting bats using the bridge?

    The following types of bridge or culvert work can generally be conducted with the presence of bats:

• Above bridge deck or culvert work where construction equipment or materials do not extend to the underside of deck or within the culvert where bats may be located (e.g., materials won't drip down to underside of deck or within the culvert) and does not include vibration or noise above existing background levels, including general traffic (e.g., road line painting, wing-wall work).

• Below bridge deck or culvert work that is conducted away from roosting bats and does not involve vibration or noise above existing background levels, including general traffic (e.g., wing-wall work, some abutment, beam end, scour, or pier repair).

Culvert Removal, Replacement, and/or Alteration (questions 43 – 55)

43. Does the project include **culvert** removal, replacement, and/or alteration activities?

44. Is there any suitable habitat for the Indiana bat or NLEB within 1,000 feet of the **culvert** (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)?

    Individual trees can be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. An individual tree is unsuitable if over 1,000 feet of other forested/wooded habitat. 2026 Survey Guidelines 11-12.

45. Does the culvert equal or exceed 23 feet (7.0 meters) in length?

    The minimum culvert length for any species of interest. (2026 Survey Guidelines 13)

46. Are the interior dimensions of the culvert less than 3 feet in diameter/height?

    Minimum culvert entrance height/diameter for Tricolored bats. (2026 Survey Guidelines 13)

47. Are the interior dimensions of the culvert less than 4 feet in diameter/height?

    Minimum culvert entrance height/diameter for IBATs. (2026 Survey Guidelines 13)

48. Are the interior dimensions of the culvert less than 4.5 feet in diameter/height?

    Minimum culvert entrance height/diameter for Northern long-eared bats. (2026 Survey Guidelines 13)

49. Has a Culvert Bat Assessment been conducted within the last 24 months to determine if the culvert is being used by the Indiana bat, NLEB, or TCB? If yes, upload assessment.

    See 2026 Survey Guidelines 11.

50. Please select one of the following results of the Culvert Bat Assessment:

    a) Indicates that a large number of Indiana bats, NLEBs, or TCBs may be using the culvert (more than 5 bats)

    b) Indicates that a small number of Indiana bats, NLEBs, or TCBs may be using the culvert (< 5 bats)

    c) Did not detect any signs of Indiana bats, NLEBs, or TCBs roosting in/under the culvert (bats, guano, etc.)

51. Has the local Service Field Office confirmed that Indiana bats, NLEB, and TCBs are not using culverts within the action area?

    See Section 3.2 for action area definition. The answer should be no.

52. Will culvert removal, replacement, and/or alteration activities occur during the winter hibernation period (inactive season)?

53. Have hibernating bats been observed using the culvert?

54. Will suitable roosting habitat still be available within the culvert once construction/replacement is complete?

55. Will culvert removal, replacement, and/or alteration activities conducted during the active season avoid disturbing roosting bats using the culvert?

Structure Removal, Replacement, and/or Alteration (questions 56 – 66)

56. Does the project include structure removal, replacement, and/or alteration activities?

57. Will the culvert removal, replacement, and/or alteration activities conducted during the active season avoid disturbing roosting bats using the structure?

58. Is there any suitable habitat for Indiana bat or NLEB within 1,000 feet of the structure (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)?

59. Has a Structure Bat Assessment been conducted within the last 24 months to determine if the structure is being used by the Indiana bat, NLEB, or TCB? If yes, upload assessment.

60. Please select one of the following results of the Structure Bat Assessment:

    a) Indicates that a large number of Indiana bats, NLEBs, or TCBs may be using the structure (more than 5 bats).

    b) Indicates that a small number of Indiana bats, NLEBs, or TCBs may be using the structure (< 5 bats).

c) Did not detect any signs of Indiana bats, NLEBs, or TCBs roosting in the structure (bats, guano, etc.).

61. Has the local Service Field Office confirmed that Indiana bats, NLEB, and TCBs are not using structures within the action area?

62. Will structure removal, replacement, and/or alteration activities occur during the winter hibernation period (inactive season)?

63. Have hibernating bats been observed using the structure?

64. Will suitable roosting habitat still be available within the structure once construction/replacement is complete?

65. Will structure removal, replacement, and/or alteration activities (window replacement, shingle replacement) conducted during the active season avoid disturbing roosting bats using the structure?

    Noise and vibration around the roost location (e.g., attics, under shingles, behind shutters) is likely to have adverse effects to the covered bat species. Normal cleaning and routine maintenance in commonly used areas are not anticipated to result in any adverse impacts to bats.

Tree Removal and Trimming (questions 16 – 20, 66 – 73)

66. Will the project involve the removal or trimming of more than 20 acres of Indiana bat, NLEB, or TCB suitable habitat per 5-mile section of road/rail?

    Generally, “No.” Rare “yes.” If “yes” the project does not qualify to use the IPaC Dkey. Key completion should continue until notified. Calculate the tree removal acreage by measured amount (not calculated by tree).

67. Has the local Service Field Office confirmed that the effects of the action do not exceed the impacts as anticipated in the PBO?

    If a project goes over the 20 acres by a small amount and INDOT has discussed this with the USFWS and they agree it can still be covered under the PBO. The answer should then be yes.

68. Will the removal or trimming of trees occur within 0.5 miles of a known Indiana bat, NLEB, or TCB hibernaculum?

69. Will the removal or trimming of these trees occur during the active season?

70. Will the removal or trimming of trees occur **beyond 100 feet** of the existing road/rail surfaces?

71. Does the Action Area intersect the species list area of the Indiana bat?

Answered automatically.

72. Does the Action Area intersect the species list area of the tricolored Bat (TCB)?

    Answered automatically.

73. Does the Action Area intersect the species list area of the northern long-eared bat (NLEB)?

    Answered automatically based on question disturbing roosting bats using the bridge.

Determinations for Other Species

74. Have you made a No Effect (or May Effect) determination for *all* other endangered or threatened species indicated on the FWS IPaC generated species list?

    YES/NO should be answered for the other listed species (other than the IBAT, NLEB, and TCB or other designations such as proposed or experimental) on the IPaC species list. Include the species, determination made, and the reasoning for that determination in the text of the IPaC review request.

Project Questions

For all responses, if described as number of trees, multiply by 0.09 to convert to acreage and enter that number. Indiana is not located in Zone 1 of the NLEB and TCB YR active areas.

1. How many acres of trees are proposed for removal/trimming outside of documented habitat for the Indiana bat, NLEB, or TCB within 100 feet of the existing road/rail surfaces during the inactive season (NLAA)?

2. How many acres of trees are proposed for removal/trimming outside of documented habitat for the Indiana bat, NLEB, or TCB within 100 feet of the existing road/rail surfaces during the active season (outside the pup season and not between Dec 15th-Feb 15th in Zone 1 of the NLEB and TCB YR active areas) (LAA)?

3. How many acres of trees are proposed for removal/trimming outside of documented habitat for the Indiana bat, NLEB, or TCB within 100 feet of the existing road/rail surfaces during the pup season (trees must be <9 in DBH, and not between Dec 15th- Feb 15th in Zone 1 of the NLEB and TCB YR active areas) (LAA)?

4. How many acres of trees are proposed for removal/trimming either outside or within documented habitat for the Indiana bat, NLEB, or TCB between 100-300 feet of the existing road/rail surface during the inactive season (LAA)?

5. How many acres of trees are proposed for removal/trimming either outside or within documented habitat for the Indiana bat, NLEB, or TCB between 100-300 feet of the

existing road/rail surfaces during the active season (outside the pup season, and not between Dec 15-Feb 15 in Zone 1 of the NLEB and TCB YR active areas) (LAA)?

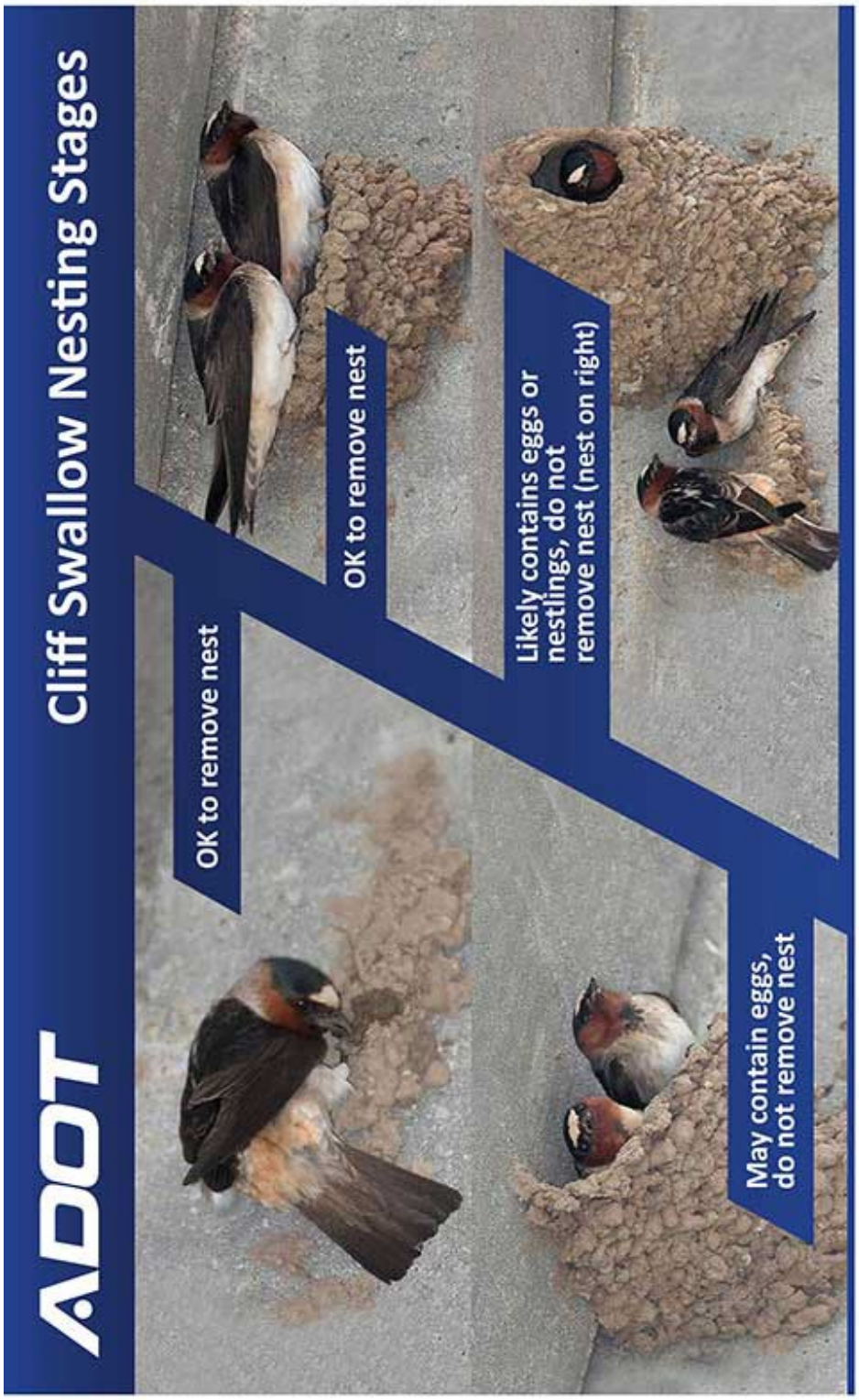
6. How many acres of trees are proposed for removal/trimming either outside or within documented habitat for the Indiana bat, NLEB, or TCB beyond 300 feet of the existing road/rail surfaces during the inactive season (LAA)?

7. How many acres of trees are proposed for removal/trimming either outside or within documented habitat for the Indiana bat, NLEB, or TCB beyond 300 feet of the existing road/rail surfaces during the active season (outside the pup season, and not between Dec 15th-Feb 15th in Zone 1 of the NLEB and TCB YR active areas) (LAA)?

8. Please enter the date of the bridge assessment.

As of 10/2026

Appendix F ADOT Clift Swallow Nesting Stages



https://azdot.gov/adot-blog/nesting-birds-are-protected-during-construction

Appendix G Stages of Decay

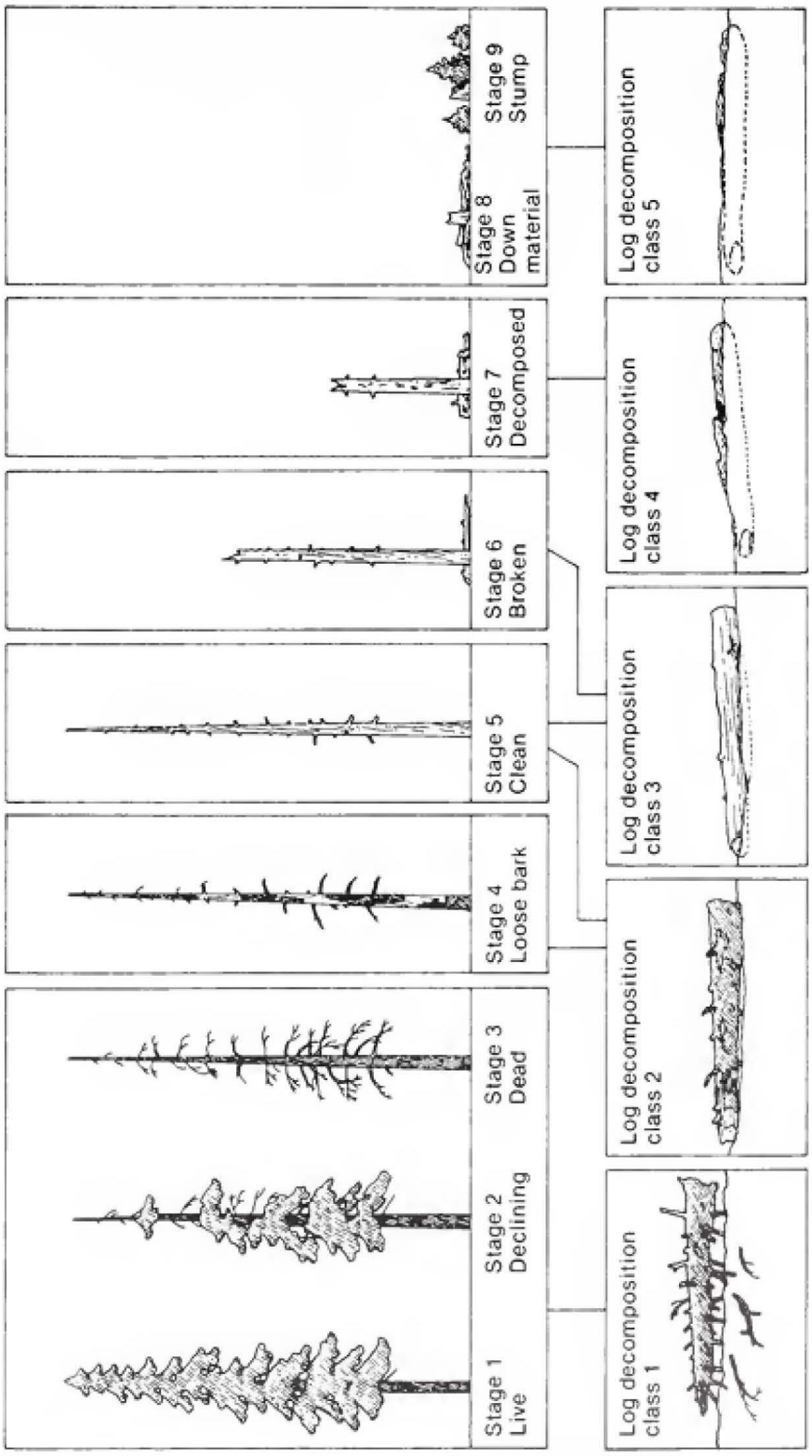


Figure 1.—When they fall, trees and snags immediately enter one of the first four log decomposition classes (reproduced from Maser et al. 1979, fig. 44, p. 80).

Stages of Decay, USFWS Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines, March 2024

Tree class	LIVE		DEAD						DEAD FALLEN	
			Hard			Spongy	Soft			
	1	2	3	4	5	6	7	8	9	
						approx. 2/3 original height	approx. 1/2 original height	approx. 1/3 original height		
Description	**Live/healthy;** no decay; tree has valuable habitat characteristics such as large, clustered or gnarled branches, or horizontal, thickly moss-covered branches.*	**Live/unhealthy;** internal decay or growth deformities (including insect damage, broken tops); dying tree.*	**Dead;** needles or twigs may be present; roots sound.	**Dead;** no needles/twigs; 50% of branches lost; loose bark; top usually broken; roots stable.	**Dead;** most branches/bark absent; some internal decay; roots of larger trees stable.	**Dead;** no branches or bark; sapwood/ heartwood sloughing from upper bole; decay more advanced; lateral roots of larger trees softening; smaller ones unstable.	**Dead;** extensive internal decay; outer shell may be hard; lateral roots completely decomposed; hollow or nearly hollow shells.		**Debris;** downed trees or stumps.	
Uses and users	Nesting (e.g., Bald Eagle, Great Blue Heron colonies, Marbled Murrelet); feeding; roosting; perching.	Nesting/roosting[1] —strong PCEs[2] (woodpeckers); SCUs[3]; large-limb and platform nests (Ospreys); insect feeders.	Nesting/roosting— strong PCEs; SCUs; bats.	Nesting/roosting —PCEs; SCUs; insect feeders.	Nesting/roosting— weak PCEs (nuthatches, chickadees); SCUs; bats; insect feeders.	Weaker PCEs; SCUs; insect feeders; salamanders; small mammals; hunting perches.	Insect feeders; salamanders; small mammals; hunting perches; occasionally used by weak cavity excavators such as chickadees.		Insect feeders; salamanders; small mammals; drumming logs for grouse; flicker foraging; nutrient source.	

[1] Large witches' brooms provide nesting/denning habitat for some species (e.g., fisher, squirrels).

[2] PCE = primary cavity excavator

[3] SCU = secondary cavity user

* This classification system does not recognize root disease trees specifically. Such trees become unstable at or before death.

https://www2.gov.bc.ca/assets/gov/environment/natural-resource-policy-legislation/accounts-measures-for-managing-identified-wildlife/appendix_6_wildlife_tree_classification_coniferous_trees.pdf

Appendix H Bat Summer /Year-Round Habitat Assessment Form

U.S. Fish and Wildlife Service

Bat Summer / Year-Round Habitat Assessment

PROJECT & SURVEY INFORMATION

Project Name: _____ IPaC Consultation Code (if applicable): _____

Project Proponent's Name (e.g., client/company/institution): _____

Project Location: State(s):_____ County(s): _____

Latitude: _____ Longitude: _____

REQUIRED: Attach or provide links to Google Earth® KMZ files (preferred) and/or shapefiles (mapping must show project boundaries, impacted forest habitat (if known), and sampling sites if assessing discrete habitats at multiple sites in a project area)

Files are attached: Yes ☐ No ☐

File Links: _____

Is suitable habitat present (or assumed present) for any of the following bat species?

☐ Indiana Bat (MYSO) ☐ Northern Long-eared Bat (MYSE) ☐ Tricolored Bat (PESU)

PROJECT AREA

Project	Total Acres	Forest Acres		Open Acres
Proposed Tree Removal (Acres)	Completely Cleared	Partially Cleared	Preserved Acres (No Clearing)	

VEGETATION COVER TYPES

Pre-Project	Post-Project

LANDSCAPE WITHIN 5-MILE RADIUS

Flight corridors to other forested areas?
Describe Adjacent Properties (e.g., forested, grassland, commercial or residential development, water sources)

SAMPLE SITE DESCRIPTION(S) (attach additional sheets if necessary. A single sheet can be used for multiple sites if same habitat)

Sample Site No.(s)

WATER RESOURCES AT SAMPLE SITE

Stream Type (# and length)	Ephemeral	Intermittent	Perennial

Pools/Ponds (# and size)		Open and accessible to bats?

Wetlands (approx. acres)	Permanent	Seasonal

Describe existing condition of water sources:

FOREST RESOURCES AT SAMPLE SITE

Closure or Density	Canopy (>50')	Midstory (20-50')	Understory (<20')
% Trees w/ Exfoliating Bark			
Dominant Species of Mature Trees			

Size Composition of Live Trees %	Small (3-8 in DBH)	Med (9-15 in DBH)	Large (>15in DBH)
No. of suitable snags			

Standing dead trees with exfoliating bark, cracks, crevices, or hollows.
Snags without these characteristics are not considered suitable

ADDITIONAL COMMENTS

Photographic Documentation: Habitat shots at edge and interior from multiple locations, understory/midstory/canopy; examples of potential suitable snags and live trees, water sources et.

Appendix I Bridge/Structure Bat Assessment Form

APPENDIX D: Bridge/Structure Bat Assessment Form

Bridge/Structure Bat Assessment Form Instructions

- This form will be completed to document bat occupancy or bat use of bridges, culverts, and other structures. This form shall be submitted to the appropriate personnel within the DOT and USFWS for recordkeeping (or uploaded into the Information, Planning, and Consultation (IPaC) Determination Key for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat) prior to conducting: any activities below the deck surface either from the underside or from above the deck surface that bore down to the underside; any activities that could impact expansion joints; any activities involving deck removal on bridges; or any activities involving structure demolition for bridges, culverts, and/or other structures.
- Assessments must be completed within two (2) years of conducting any work (see the above bullet), regardless of whether assessments have been conducted in the past. Assessments must be completed in appropriate weather conditions, suitable for the assessor to observe common signs of bat use.
- Evidence of bat use may include visual observation (live and/or dead), presence of guano, presence of staining, audible observation, and/or odor observation. Presence of one or more indicators is sufficient evidence that bats may be using the bridge, culvert, and/or other structure.
- If bat use of a bridge, culvert, and/or other structure is noted, additional studies may be undertaken during bat active season to identify the specific bat species utilizing the structure, or protected bat species presence can be assumed, in order to comply with threatened and endangered species regulations. Bat active season dates, typically between April and November, vary regionally and by species, so assessors should consult with their local USFWS Field Office for more specific active season dates.
- For use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat – If the bridge/structure is 1,000 feet or more from suitable bat habitat[1] (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check the appropriate box and fill out the table below. **No further assessment is required.**

Date & Time of Assessment	DOT Project #	Route/Facility Carried	County
Federal Structure ID	Structure Coordinates (latitude and longitude)	☐ This bridge/structure is 1,000 feet or more from suitable bat habitat[2] Name: _____ Signature: _____	

- Any questions pertaining to assessments or this form should be directed to the local USFWS Field Office.

[1] Refer to the USFWS's summer survey guidance for the definition of suitable habitat (http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html).

[2] This condition is only for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
Federal Structure ID	Structure Coordinates (latitude and longitude)	Structure Height (approximate)	Structure Length

Structure Type (check one)

Bridge Construction Style

- ○ Cast-in-place
- ○ Flat Slab/Box
- ○ Truss (Side View)
- ○ Parallel Box Beam
- ○ Pre-stressed Girder
- ○ Steel I-beam
- ○ Covered
- ○ Other:

Culvert Type

- ○ Box
- ○ Pipe/Round
- ○ Other:

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☐ None	☐ Concrete
☐ Concrete	☐ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Creosote Evidence

- ○ Yes ○ No
- ○ Unknown

Culvert Material

- ☐ Metal
- ☐ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Notes:

Crossings Traversed (check all that apply)

- ☐ Bare ground
- ☐ Rip-rap
- ☐ Flowing water
- ☐ Standing water
- ☐ Seasonal water
- ☐ Open vegetation
- ☐ Closed vegetation
- ☐ Railroad
- ☐ Road/trail - Type:
- ☐ Other:

Surrounding Habitat (check all that apply)

- ☐ Agricultural
- ☐ Commercial
- ☐ Residential-urban
- ☐ Residential-rural
- ☐ Woodland/forested
- ☐ Grassland
- ☐ Ranching
- ☐ Riparian/wetland
- ☐ Mixed use
- ☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	**Assessment Notes**	**Evidence of Bats** (include photos if present)		
☐ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining	☐ Audible ☐ Odor ☐ Photos	Species
☐ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining	☐ Audible ☐ Odor ☐ Photos	Species
☐ Spaces between concrete end walls and the bridge deck	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining	☐ Audible ☐ Odor ☐ Photos	Species
☐ Crack between concrete railings on top of the bridge deck (Gap, Railing)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining	☐ Audible ☐ Odor ☐ Photos	Species
☐ Vertical surfaces on concrete I-beams	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining	☐ Audible ☐ Odor ☐ Photos	Species
☐ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining	☐ Audible ☐ Odor ☐ Photos	Species
☐ Weep holes, scupper drains, and inlets/pipes	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining	☐ Audible ☐ Odor ☐ Photos	Species
☐ All guiderails	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining	☐ Audible ☐ Odor ☐ Photos	Species
☐ All expansion joints	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining	☐ Audible ☐ Odor ☐ Photos	Species

Name:	Signature:

Last Revised March 2022 Assessment Form

https://www.fws.gov/sites/default/files/documents/2025-04/bridge-and-culvert-bat-assessment-form-1.pdf

Appendix J Bat Roost Data Sheet

U.S. Fish and Wildlife Service

Bat Roost Datasheet

PROJECT & SURVEY INFORMATION

Surveyor(s): _____ Date: _____

Property Owner _____ Phone #: _____

State: _____ County: _____ Site #: _____ Roost #: _____

Y (Lat/N): _____ X (Lon/E): _____ UTM Zone: _____

ROOST TREE INFORMATION

Tree Species	☐ LIVE ☐ SNAG		
DBH (in or cm)		**Roost Position Aspect (deg)**	
Total Tree Height (ft or m)		**Height of Roost Area (if known)**	
Exfoliating Bark %	☐ TIGHT ☐ PLATY ☐ SLOUGHING		
Cavities Present	☐ NO ☐ YES, DESCRIBE:		
Canopy Position	☐ DOMINANT ☐ CO-DOMINANT ☐ SUPPRESSED		
Roost Decay State (see below)			



SURROUNDING HABITAT CONDITION

Canopy Closure at Roost (%)		**Approx. woodlot size**	
Dist. From Capture Site (ft or m)		**Dist. To non-forest (ft or m)**	
Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)			

https://www.fws.gov/sites/default/files/documents/2025-04/bat-roost-datasheet-1.pdf

Appendix K Bat Emergence Data Sheet

U.S. Fish and Wildlife Service

Bat Emergence Datasheet

PROJECT & SURVEY INFORMATION

Date: _____ Surveyor(s) Full Name: _____

State: _____ County: _____ Project Name: _____

Site Name/#: _____ Roost Name/# _____ Bat #:_____

Lat/Long or UTM of Roost: _____

Description of Roost/Habitat Feature Surveyed: _____

Bat Species Known to be using this Roost/Feature (if not known, leave blank):

Other Suspected Bat Species (explain): _____

Weather Conditions during Survey (temperature, precipitation, wind speed):

Survey Start Time: _____ Time of Sunset: _____ Survey End Time: _____

NOTE: Emergence surveys should begin ½ hour before sunset and continue until at least one hour after sunset or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	No. of Bats Leaving Roost *	Comments/Notes

U.S. Fish and Wildlife Service

Bat Tree Emergence Datasheet (Continued)

Site # _____ **Roost #** _____

Time	No. of Bats Leaving Roost *	Comments/Notes
Total Number of Bats Observed Emerging from the Roost/Feature during the Survey:		

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If radio-tagged bat was roosting in feature, at what time did it emerge?

https://www.fws.gov/sites/default/files/documents/2025-04/bat-emergence-datasheet-1.pdf