

**Multi-Bat Species
General Conservation Plan
for
Routine Development Projects in
New York, Pennsylvania, and West Virginia**

U.S. Fish and Wildlife Service
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Executive Summary

The U.S. Fish and Wildlife Service implements the Endangered Species Act (ESA) by working with others to conserve the ecosystems upon which threatened and endangered species depend, and by developing and maintaining programs to improve the status of these species to the point that protection under the ESA is no longer necessary.

This General Conservation Plan (GCP) describes one such program focused on improving the status of the federally listed Indiana bat (*Myotis sodalis*; Endangered) and northern long-eared bat (*Myotis septentrionalis*; Endangered), and the tricolored bat (*Perimyotis subflavus*; Proposed Endangered), (individually and collectively called the Covered Species) in the states of New York, Pennsylvania, and West Virginia (i.e., the GCP Plan Area). This GCP also provides a streamlined permitting process to assist Project Proponents whose activities are reasonably certain to result in take of these species. This document briefly summarizes threats faced by these species and outlines specific conservation measures (CMs) consistent with the objectives outlined in the recovery plan and regional conservation strategy intended to foster recovery of remaining populations of Indiana bats where they occur in the three-State area covered by the plan. The conservation needs for northern long-eared bats and tricolored bats are similar.

This GCP was created to assist individual Applicants with satisfying the statutory and regulatory requirements of a habitat conservation plan for issuance of an incidental take permit under ESA Section 10(a)(1)(B). Project Proponents seeking to comply with the requirements of the ESA who verify that their project meets the requirements described in the plan, and who agree to implement the CMs that apply to their project can adopt this GCP to satisfy the conservation plan component of their application when applying for a Permit.

This process is intended to facilitate compliance with ESA requirements, increase efficiency of Permit issuance for eligible projects, and generate more consistent and comprehensive landscape-scale conservation actions to benefit the Covered Species.

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Glossary

[*Note: Terms included in the glossary are italicized and underlined the first time they are used in the body of this document.*]

active season – The annual period from spring staging and migration through fall migration and swarming. This includes all key stages in the Covered Species annual life cycle except hibernation. The timing and duration of the active season varies with weather, latitude, and elevation. Local field offices can provide the dates and timing that apply to specific project locations. See Table 1 for general timing of the Covered Species annual cycle in the GCP Plan Area.

adaptive management – A method for examining alternative strategies for meeting measurable biological goals and objectives, and then, if necessary, adjusting future conservation management actions according to what is learned (65 FR¹ 35252, Habitat Conservation Plan [HCP] and Incidental Take Permit [ITP] Processing Handbook).

Applicant – Refers to any person, as defined in ESA section 3(13), who requires formal approval or authorization from a Federal agency as a prerequisite to conducting an action (50 CFR² 402.02). Under the GCP, a Project Proponent is a potential Applicant and becomes an Applicant at the time they submit a complete application as determined by the Service.

assumed occupied habitat – Areas within the range of the Covered Species that have not been surveyed, and the Applicant has elected to assume are occupied because the Covered Species are reasonably likely to occur in these areas based on their location and the presence of suitable habitat.

assumed occupied hibernacula – *See also* “assumed occupied habitat.”

bank sponsor – Any public or private entity responsible for establishing, and in most circumstances, operating a conservation bank (Service Director’s May 2, 2003, memorandum, Guidance for the Establishment, Use, and Operation of Conservation Banks; 2023 Service Mitigation Policy section 6.6.3.b; 2023 Service ESA Compensatory Mitigation Policy Section 7.3 and appendix B).

conservation banking – A method used to offset adverse impacts occurring elsewhere to the same listed species. A conservation bank is a parcel of non-Federal land containing natural resource values the banker has conserved, restored, and/or created, and will manage in perpetuity for Federal or state protected species (HCP and ITP Processing Handbook; Service Director’s May 2, 2003, memorandum, Guidance for the Establishment, Use, and Operation of Conservation Banks; 2023 Service Mitigation Policy; 2023 Service ESA Compensatory Mitigation Policy).

¹ FR stands for *Federal Register*.

² CFR stands for Code of Federal Regulations.

conservation measures (CMs) – CMs describe the specific actions that the permittee will implement to achieve the objectives in support of the GCP goals. There may be multiple CMs associated with each objective. CMs can be any of the avoidance, minimization, or mitigation actions taken to meet the goals and objectives of the GCP. CMs can take many forms, but in all cases must be based on the biological needs of the Covered Species. GCPs often combine these measures to meet the needs of species. (HCP and ITP Processing Handbook, 50 CFR 17.3)

conservation plan – The plan required by ESA section 10(a)(2)(B) that an Applicant must submit when applying for a Permit. Conservation plans are also known as “habitat conservation plans” or “HCPs.” Incidental take is authorized through a Section 10(a)(1)(B) Permit (HCP and ITP Processing Handbook, 50 CFR 17.3). *See also* “general conservation plan” (“GCP”) and “individual project plan” (“IPP”).

Covered Activities – Activities that a permittee will conduct for which take is authorized in an ESA section 10(a)(1)(B) Permit (HCP and ITP Processing Handbook). Covered Activities for the purposes of this GCP are discussed in section 3.4.

Covered Species – Species for which incidental take is authorized in a Permit and is adequately covered in an HCP or GCP. Covered Species also include species that are not federally listed as threatened or endangered species that have been adequately addressed in an HCP or GCP as though they were listed and are therefore, included on the Permit (HCP and ITP Processing Handbook). Covered Species for the purposes of this GCP are discussed in section 2 and are the IBAT, NLEB, and TCB.

diameter at breast height (DBH) – A standard method of expressing the diameter of the trunk or bole of a standing tree. In the United States, DBH is typically measured at 4.5 feet above ground.

documented habitat – Suitable forested habitat that has been surveyed (using the most recent version of the Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines³) and resulted in the presence of one or more of the Covered Species. *See also* “known habitat” and occupied habitat.

endangered species – Any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the provisions of the ESA would present an overwhelming and overriding risk to man (ESA Section 3).

Environmental Assessment – A concise public document prepared by a Federal agency in compliance with the National Environmental Policy Act (NEPA), that briefly discusses the purpose and need for an action, alternatives to such action, and provides sufficient evidence and analysis of impacts to determine whether to prepare an Environmental Impact Statement or Finding of No Significant Impact. (40 CFR 1508.9)

³ See: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

Endangered Species Act (ESA) – A Federal statute that provides for listing and conservation of species (16 U.S.C. 1531-1543; 87 Stat 884).

fall swarming area – Fall swarming areas are found in forested areas where the Covered Species roost, forage, and travel, around a hibernaculum during the fall swarming period, from mid-August to mid-November for the IBAT and NLEB, and mid-August to mid-October for the TCB. Bats also use these areas for mating and to build up fat reserves before hibernation. These areas include forested patches, as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. See table 1 for general timing of the Covered Species annual cycle in the GCP Plan Area.

fall swarming habitat – *See also* “fall swarming area.”

fully offset – Completely mitigating any adverse effects expected to remain after avoidance and minimization measures are implemented. In other words, CMs are commensurate with the level and type of impacts of the taking and will compensate for the impacts of the taking. Fully offset means the biological value that would be lost (from the Covered Activities) will be replaced (through implementation of conservation actions) with equivalent biological value (HCP and ITP Processing Handbook).

general conservation plan – A completed landscape-level conservation plan and NEPA compliance document produced either by the Service, or by another entity in cooperation with the Service; however, no Permit is issued at the time the conservation plan is approved. This approach is recommended in situations where it is anticipated that numerous individual HCPs would be needed to cover many similar, unrelated proposed actions, but where no Applicant is appropriate to serve as a master Permittee. In this type of HCP, the Service defines the geographic scope of the GCP, the conservation plan, and associated mitigation requirements. In this process, the Service completes a single Findings document, a single section 7 Biological Opinion, and a single NEPA document for all actions covered under the GCP. The GCP is made available for adoption and use by numerous Applicants who become eligible to receive individual Permits when they can demonstrate compliance with the conservation plan and mitigation requirements of the GCP (Service Policy Memo October 5, 2007; HCP and ITP Processing Handbook).

harm – “...an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering” (50 CFR 17.3, 1981 Final Rule, 46 FR 54750).

hibernacula – Natural or artificial (manmade) features where the Covered Species overwinter. Hibernacula for IBATs predominantly includes caves, mines, and other cave-like structures (e.g., active or abandoned mines, railroad tunnels, bridges). NLEBs hibernate in habitat similar to IBATs, but may also use nontraditional hibernacula (e.g., buildings, talus slopes, rock crevices/outcroppings). TCBs hibernate in similar habitats as IBATs and NLEBs and have also been observed in locations such as rock crevices/outcroppings. See Table 1 for general timing of the Covered Species annual cycle in the GCP Plan Area.

historic property – Under the National Historic Preservation Act (NHPA), any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register, including artifacts, records, and material remains relating to the district, site, building, structure, or object (NHPA section 106, 36 CFR 800.16(l)(1)).

inactive season – The annual period when the Covered Species hibernate. The timing and duration of the inactive season for each species varies with weather, latitude and elevation. Local field offices can provide the dates and timing that apply to specific project locations.

incidental take – Take of federally 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, HCP and ITP Processing Handbook).

incidental take permit (Permit) – A Permit issued under ESA section 10(a)(1)(B) that authorizes, limits, or describes take of ESA listed species to a non-Federal party undertaking an otherwise lawful activity that is reasonably anticipated to result in take of an endangered or threatened species. Application for a Permit is subject to certain requirements, including preparation by the Applicant of a conservation plan, generally “Conservation Plan” or “HCP.”

Individual Project Plan (IPP) – A project-specific conservation plan that is submitted to the local field office as part of the GCP application process.

known habitat – Suitable forested habitat that has been surveyed (using the most recent version of the Service’s Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines⁴) and resulted in the presence of one or more of the Covered Species. *See also* “documented habitat” and “occupied habitat.”

maternity colony home range (known or documented summer habitat):

IBAT maternity colony home range – Areas that include suitable summer habitat in which bats roost and forage during the summer, typically occurring within 5.0 miles of a documented mist-net capture or acoustic detection, or within 2.5 miles of a known suitable roost tree.

NLEB maternity colony home range – Areas that include suitable summer habitat in which bats roost and forage during the summer, typically occurring within 3.0 miles of a documented mist-net capture or acoustic detection, or within 1.5 miles of a known suitable roost tree.

TCB maternity colony home range – Areas that include suitable summer habitat in which bats roost and forage during the summer, typically occurring within 3.0 miles of a documented mist-net capture or acoustic detection, or within 1.5 miles of a known suitable roost tree.

National Environmental Policy Act (NEPA) – The NEPA of 1969, as amended (42 USC § 4321, *et seq.*), is a Federal statute that requires Federal agencies to evaluate and disclose the effects of their discretionary proposed actions on the human environment.

⁴ See: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

No Surprises Rule – The No Surprises Rule (63 FR 8859), provides regulatory assurances to the Permittee of a Permit issued under ESA section 10(a)(1)(B) that no additional land use restrictions or financial compensation beyond that described in the HCP and under the Permit conditions will be required of the Permittee with respect to species covered by the Permit, even if unforeseen circumstances arise after the Permit is issued indicating that additional mitigation is needed for a given species covered by a Permit (50 CFR 17).

occupied habitat – Suitable forested habitat that has been surveyed (using the most recent version of the Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines⁵) and resulted in the presence of one or more of the Covered Species. *See also* “documented habitat” and “known habitat.”

Permit Area – The geographic area where a Permit applies (HCP and ITP Processing Handbook). The Permit Area for ITPs issued in association with this GCP will be defined for each individual project and must be completely within the GCP Plan Area consisting of the states of NY, PA, and WV, excluding Federal lands.

Permittee – A person(s), as defined in ESA section 3(13), that holds an active Permit. An Applicant becomes a Permittee upon issuance of a Permit.

phenology – The seasonal timing of events in the life of an organism.

Plan Area – The specific geographic area where Covered Activities described in the GCP, including mitigation, may occur (HCP and ITP Processing Handbook). The Plan Area for this GCP includes the states of NY, PA, and WV, excluding Federal lands.

Project Proponent – A potential Applicant. For the purposes of this plan, a Project Proponent is any person⁶ planning to engage in activities within the GCP Plan Area that may result in take of a Covered Species. A Project Proponent is referred to as an Applicant at the time they submit a complete application.

proposed species – Any species the Service has determined is in danger of extinction throughout all or a significant portion of its range (proposed endangered) or is likely to become endangered within the foreseeable future throughout all or a significant portion of its range (proposed threatened), and the Service has proposed a draft rule to list as either endangered or threatened under the ESA. Proposed species are not protected by take prohibitions of ESA Section 9 until the rule to list a species is finalized. Under ESA section 7(a)(4), Federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

roost – A natural (e.g., tree, leaf cluster, etc.) or artificial/manmade (e.g., bat box, culvert, etc.) structure that is used by bats during the active season for sheltering and/or pup rearing.

spring staging area – Spring staging areas are found in forested areas where the Covered Species roost, forage, and travel, around a hibernaculum, during the spring staging period from mid-March to mid-May for IBATs and NLEBs, and late April to early-May for TCBs. Bats may

⁵ See: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

⁶ See definition in ESA Section 3(13).

spend a few hours or days around hibernacula preparing for migration or migrate immediately to summer habitat. These areas include forested patches, as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. See Table 1 for general timing of the Covered Species annual cycle in the GCP Plan Area.

spring staging habitat – *See also* “spring staging area.”

suitable documented roost – A natural or artificial/manmade structure in which occupancy has been confirmed and which remains suitable for sheltering and/or pup rearing during the active season.

suitable summer habitat:

IBAT – Suitable summer habitat consists of a wide variety of forested habitats where they roost, forage, and travel and may also include some adjacent and interspersed nonforested habitats, such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags greater than 5 inches DBH that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested habitat. IBATs have also been observed roosting in manmade structures, such as bridges and bat houses (artificial roost structures); therefore, these structures should also be considered potential summer habitat.

NLEB – Suitable summer habitat consists of a wide variety of forested habitats where they roost, forage, and travel and may also include some adjacent and interspersed nonforested habitats, such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags greater than 3 inches DBH that have exfoliating bark, cracks, crevices, and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1,000 feet of forested habitat. The NLEB has also been observed roosting in manmade structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. See the Rangewide Indiana Bat and Northern Long-Eared Bat Survey Guidelines for additional details on suitable habitat.⁷

TCB – Suitable summer habitat consists of a wide variety of forested habitats where they roost, forage, and travel and may include some adjacent and interspersed nonforested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. This includes forests and woodlots containing trees with potential roost substrate (i.e., live and dead leaf clusters of live and recently dead deciduous trees), as well as linear features such as fencerows, riparian forests, and other wooded corridors. TCBs will roost in a variety of tree

⁷ See: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

species, especially oaks (*Quercus* spp.), and often select roosts in tall, large diameter trees, but will roost in smaller diameter trees when potential roost substrate is present (e.g., 4-inch [10-centimeter] DBH).⁸ Occasional summer roosts also include clusters of dead pine needles of large live pines (*Pinus echinata*), live branches of Norway spruce (*Picea abies*), eastern red cedar (*Juniperus virginiana*), abandoned gray squirrel (*Sciurus carolinensis*) nests, and under exfoliating birch (*Betula* spp.) bark.⁹ TCBs commonly roost in the mid to upper canopy of trees although males will occasionally roost in dead leaves at lower heights (e.g., less than 16 feet [5 meters] from the ground).¹⁰ TCBs seem to prefer foraging along forested edges of larger forest clearings, along edges of riparian areas, and over water and avoid foraging in dense, unbroken forests, small forest openings, and narrow road cuts through forests.¹¹ TCBs also roost in manmade structures, such as bridges and culverts, and occasionally in barns or the underside of open-sided shelters (e.g., porches, pavilions); therefore, these structures should also be considered potential summer habitat. Unsuitable roosting habitat includes trees found in highly developed urban areas (e.g., street trees, downtown areas).¹²

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 (ESA section 3).

take – “...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct” (ESA section 3).

travel/commuting habitat – Treed areas (i.e., riparian corridors, hedgerows) between documented (via acoustic detections, captures, or radio telemetry) summer foraging and roosting habitat.

⁸ Leput 2004

⁹ Veilleux et al. 2003; Perry and Thill 2007; WDNR 2016; WDNR 2017a; WDNR 2017b; WDNR 2018; Thames 2020; Hammesfahr et al. 2022

¹⁰ Perry and Thill 2007

¹¹ Davis and Mumford 1962; Kurta 1995; Lacki and Hutchinson 1999; Ford et al. 2005; Menzel et al. 2005; Thames 2020

¹² Helms 2010

1.0 Introduction

1.1 Overview and Background

The U.S. Fish and Wildlife Service (Service) implements the *Endangered Species Act* (ESA) by working with others to conserve the ecosystems upon which *threatened* and *endangered species* depend, and by developing and maintaining conservation programs for these species to improve their status to the point that protection under the ESA is no longer necessary. This *General Conservation Plan* (GCP) describes one such program focused on improving the status of the following federally listed species (individually and collectively called the *Covered Species*): the Indiana bat (*Myotis sodalis*; Endangered; IBAT) and the northern long-eared bat (*Myotis septentrionalis*; Endangered; NLEB), as well as the tricolored bat (*Perimyotis subflavus*; Proposed Endangered; TCB) in the states of New York (NY), Pennsylvania (PA), and West Virginia (WV). This GCP briefly summarizes the threats faced by these species and describes strategies created to address those threats. This GCP also provides a streamlined ESA permitting process to assist non-Federal Project Proponents with their ESA compliance. This GCP outlines specific *CMs* consistent with the objectives outlined in a regional conservation strategy intended to foster recovery of remaining populations of IBATs where they occur; however, the conservation needs of all three bat species are similar. This GCP may also streamline ESA implementation for projects that involve Federal agency actions that may affect the Covered Species (see appendix F).

This GCP facilitates participation by proactively identifying conservation needs for the Covered Species and applying consistent review and approval standards for eligible projects. Landowners and non-Federal *Project Proponents* that choose to participate gain regulatory assurances through ESA section 10(a)(1)(B) and the timeline advantages of a streamlined review and Permit issuance processes. This GCP will not increase or encourage development, rather it provides a permitting tool for Project Proponents with recurring project types. It also provides a conservation and compliance strategy for several recurring project types within a given geographic area for a discrete period, and the Service has identified integrated mitigation opportunities at scales not possible when considering each project on a case-by-case basis. It is not possible for any plan to analyze the effects of every possible project type or activity; therefore, this GCP is focused on accommodating a subset of recurring project types that have well-understood project-level effects. Similar GCP approaches may be developed to accommodate other project types if or when the Service has sufficient data to complete analyses of the effects of those projects and appropriate CMs. This initial iteration of the GCP for routine development projects is intended to serve as a proof-of-concept that, if successful at increasing the efficiency of Permit processing, while delivering recovery-focused conservation benefits, could be expanded to other states. Similarly, should other species be listed that could benefit from this GCP, the GCP could be amended to cover those species. This GCP satisfies all requirements of a *conservation plan* (ESA section 10(a)(2)(A)).

1.2 Purpose and Need

The Service developed this GCP to satisfy requirements to carry out programs for the conservation of threatened or endangered species, and to fulfill obligations that direct the Service

to issue Permits to non-Federal entities for *take* of endangered and threatened species that may occur incidental to otherwise lawful activities¹³ when certain criteria are satisfied.¹⁴

ESA section 9(a)(1)(B) prohibits take of any fish or wildlife species listed as endangered. Take is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” *Incidental take* is that which is incidental to, and not the purpose of, carrying out an otherwise lawful activity.¹⁵ Harm is further defined¹⁶ to mean “an act which actually kills or injures wildlife” and includes “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, and sheltering.”

The Service developed this GCP to provide an optional, consistent, and streamlined process to assist Project Proponents, whose otherwise lawful activities are reasonably certain to result in take of the Covered Species, in complying with the ESA. Whether or not to apply for a Permit under ESA section 10(a)(1)(B) is a decision of the Project Proponent. Nothing in this document compels a Project Proponent to pursue a Permit or to do so using the conservation and compliance strategy set forth in this GCP. Project Proponents can take Service technical assistance into account and proceed in a number of ways, based upon their own risk assessment. If the Project Proponent determines that a project is reasonably certain to result in take of a federally listed or *proposed species*, as included in this GCP, it is the Project Proponent’s choice to proceed (at their own risk) as planned without a Permit, modify the project to avoid take and proceed without a Permit, or prepare and submit an application¹⁷ for a Permit.

1.2.1 Background

To obtain a Permit, an *Applicant* must provide a conservation plan that meets specific requirements identified in ESA section 10(a)(2)(A) and its implementing regulations for endangered¹⁸ and threatened species.¹⁹ Among other requirements, the plan must specify the impacts that are likely to result from the taking, the measures the Applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement such measures. Conservation plans meeting these requirements have come to be known as "habitat conservation plans" or "HCPs."

1.2.2 Habitat Conservation Plans

In the typical HCP process, a Project Proponent develops, often with the assistance of a consultant, a document describing their project and analyzing the type and amount of take expected to occur for each federally listed species. The Project Proponent proposes measures intended to avoid or minimize and mitigate the resulting impacts of the taking (preferably in coordination with the Service) and describes how such measures will be implemented. The

¹³ ESA Section 10(a)(1)(B)

¹⁴ ESA Section 10(a)(2)(B)

¹⁵ ESA Section 3(19)

¹⁶ 50 CFR 402.02

¹⁷ https://fwsepermits.servicenowservices.com/nav_to.do?uri=%2Fhome_splash.do%3Fsysparm_direct%3Dtrue.

¹⁸ 50 CFR 17.22

¹⁹ 50 CFR 17.32

Applicant then submits their draft HCP to the Service. After the Service's review, comments are returned to the Applicant for incorporation into a subsequent draft HCP. This process is repeated until both parties are satisfied that the HCP meets the Applicant's project needs and all applicable statutory and regulatory issuance criteria.

Once the HCP development begins, parallel processes required to satisfy other applicable regulatory requirements such as the *National Environmental Policy Act* (NEPA)²⁰ and the *National Historic Preservation Act* (NHPA)²¹ are initiated. Once all such requirements are satisfied, the Service notifies the public that an application for a Permit has been received and provides the supporting documentation for review and comment. After comments are collected and addressed, the Service can complete application processing and submit a final package with a recommendation to the Regional decision maker whether to issue the requested Permit. Each Applicant, whose package is approved, receives a Permit tailored to the needs of their specific project, with terms and conditions reflecting and adopting the conservation commitments outlined in the HCP that they developed. The HCP process was designed to address each individual Applicant's needs on a project-specific basis.

Congress intended that the HCP program should authorize incidental take but also integrate non-Federal development and land use activities with public conservation goals, resolve conflicts between protection of federally listed species and economic activities on non-Federal lands, and create a climate of partnership and cooperation. Congress intended the HCP program to address species in an ecosystem context, generate long-term commitments to conserve species, and deliver regulatory assurances to Project Proponents. The HCP program was envisioned as an opportunity to establish creative partnerships among the public and private sectors, and State, municipal, and Federal agencies to conserve endangered and threatened species and their habitats.²²

1.2.3 General Conservation Plans

To achieve Congress' stated intents, agency policy²³ allows the Service to prepare GCPs, such as this GCP, to promote strategic conservation efforts while streamlining permitting for non-Federal projects. A GCP consists of a landscape-level HCP produced by the Service. A GCP defines a geographic scope, specifies activities that can be covered, and outlines offsetting mitigation requirements based on a landscape-scale conservation strategy for a Covered Species. A conservation strategy summarizes a species' needs and threats in a defined geographic area and identifies specific measures intended to address or *fully offset* the impacts of those threats. A conservation strategy describes where and how preferred conservation outcomes can be obtained within a specific area, and guides projects to contribute to the Service's goals to recover species to the point that they no longer require the measures prescribed in the ESA.

When developing a GCP, the Service considers the potential impact of all *Covered Activities* to the Covered Species as well as the beneficial effects of offsetting minimization and mitigation measures over a prescribed period. After public review and comment, the Service makes

²⁰ 42 U.S.C. § 4321, *et seq.*

²¹ 54 U.S.C. § 300101, *et seq.*

²² H.R. Rep. No. 97-835 (1982)

²³ October 5, 2007, *Final General Conservation Plan Policy*

approved GCPs available for adoption and use by Applicants who receive individual Permits when they demonstrate their eligibility and commit to implement the measures outlined in the plan.

Under the GCP process, Project Proponents are relieved of the requirement to develop their own project-by-project HCPs. Landowners and Project Proponents that meet eligibility criteria may choose whether they wish to adopt the GCP when applying for a Permit, or conversely, whether they prefer to develop their own plan using the project-specific HCP process. Eligible Project Proponents that choose to participate through the GCP can be granted a Permit under the streamlined review and approval process. Interested parties are encouraged to coordinate with the Service to determine if their proposed activities qualify to participate through the GCP and apply for Permits without having to prepare their own HCPs.

1.2.4 GCP Approach to Satisfy Other Required Statutes and Policies

Applicants adopting this GCP must agree to comply with all applicable Federal, State, and local statutes and regulations to ensure that their actions are otherwise lawful; therefore, eligible to be covered by a Permit. Nothing in this GCP is intended to supersede existing Federal, State, or local laws or regulations.

In developing this GCP, the Service has addressed federally required environmental compliance processes or prescribed how regulations that apply to certain projects can be satisfied to meet permit issuance criteria. The Service will confirm what other Federal laws (e.g., Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act) apply to an Applicant's proposed project before issuing a requested Permit.

The Service must comply with ESA section 7(a)(2) for the proposed action of issuing Permits through the GCP process. The Service must ensure that the continued existence of any federally listed species (and proposed species as included in this GCP) is not likely to be jeopardized and that no designated critical habitat will be destroyed or adversely modified by the proposed action.²⁴

Approval of a GCP is a Federal action subject to compliance with NEPA.²⁵ The Service's NEPA analysis for this GCP evaluates the range of reasonably foreseeable effects of the proposed and alternative actions on the human environment. The Service satisfies its NEPA obligations by notifying the public and inviting review and comment of the draft NEPA documents prior to making any decisions regarding approval of the GCP. For this GCP, the Service has prepared an *environmental assessment* (EA). The EA provides a detailed evaluation of the effects of the proposed action and alternatives on the human environment. The draft EA and GCP were published to the *Federal Register* on October 29, 2024.

²⁴ Permits issued under this GCP are only available to relevant projects that will not result in unauthorized take of any federally listed species other than the Covered Species. Accordingly, for its action pursuant to the GCP, the Service considers critical habitat and jeopardy of the IBAT, NLEB, and TCB.

²⁵ 40 CFR§1500, 43 CFR§46, Chapter 13 in HCP and ITP Processing Handbook

Compliance with the NHPA,²⁶ is required by law for all Federal undertakings. An undertaking is defined as “a project, activity, or program... requiring a Federal permit, license or approval.”²⁷ The Service determined that the issuance of a Permit constitutes an undertaking subject to review and compliance with NHPA section 106.²⁸ This document establishes processes to ensure that the Service will satisfy its obligations under the NHPA for each Permit issued through the streamlined GCP review and approval process.

The Department of the Interior requires that the Service consult with Tribes when ESA actions may affect Indian lands, Tribal trust resources, or the exercise of American Indian Tribal rights.²⁹ These policies direct the Service to make efforts to establish effective government-to-government working relationships with Tribes to achieve the common goal of promoting and protecting the health of ecosystems on Indian lands. Whenever the activities under an HCP may impact Tribal trust resources, the exercise of Tribal rights, or Indian lands, the Service is required to consult with and seek the participation of the affected Indian Tribes to the maximum extent practicable. This includes providing affected Tribes with adequate opportunities to participate in data collection, consensus seeking, and other relevant processes. The Service notified federally recognized Tribes of this GCP to ensure appropriate consideration of effects to Tribal lands, Tribal trust resources, and the exercise of American Indian Tribal rights.

The Service will prepare a Findings and Recommendations documenting that the GCP satisfies all applicable statutory and regulatory requirements, includes responses to substantive public comments, and includes a recommendation on issuance of Permits. The Service provided notice and made this GCP and associated EA available to ensure that the public was able to review and comment on the entire scope of the plan.

Under this streamlined permitting approach, the Service will confirm for each Applicant’s request for a Permit that activities to be covered are consistent with the requirements of the GCP, the NEPA and intra-Service section 7 analyses, the NHPA, Tribal coordination processes, and any other applicable Federal regulations (appendix C). The Service will prepare a memorandum documenting those determinations for each Permit issued. Applicants remain responsible for complying with any State or local statutes or regulations.

The Service is required to provide notice in the *Federal Register* of all Permit applications that are received.³⁰ To reduce workload, and to streamline the public notice process, the Service will publish the initial notice of availability to the *Federal Register*. General information about individual permits issued thereafter, will be posted to <https://www.fws.gov/project/routine-development-gcp>. On an annual basis, the Service is required to make public notifications to the *Federal Register* by using a batched public notice process.

²⁶ 16 U.S.C. 470(f)

²⁷ 36 CFR 800.16(y)

²⁸ Appendix A, HCP and ITP Issuance Handbook

²⁹ e.g., Secretarial Order 3206

³⁰ ESA Section 10(c)

1.3 GCP Plan and Permit Areas

The *Plan Area* includes all lands necessary for a conservation plan to be fully implemented (e.g., the specific geographic area where the described activities, including mitigation, will occur).³¹ For this GCP, the Plan Area consists of the states of NY, PA, and WV where habitat for the Covered Species occurs, except for Federal lands (Figure 1). The Plan Area encompasses diverse habitats, resources, and various degrees of existing development.

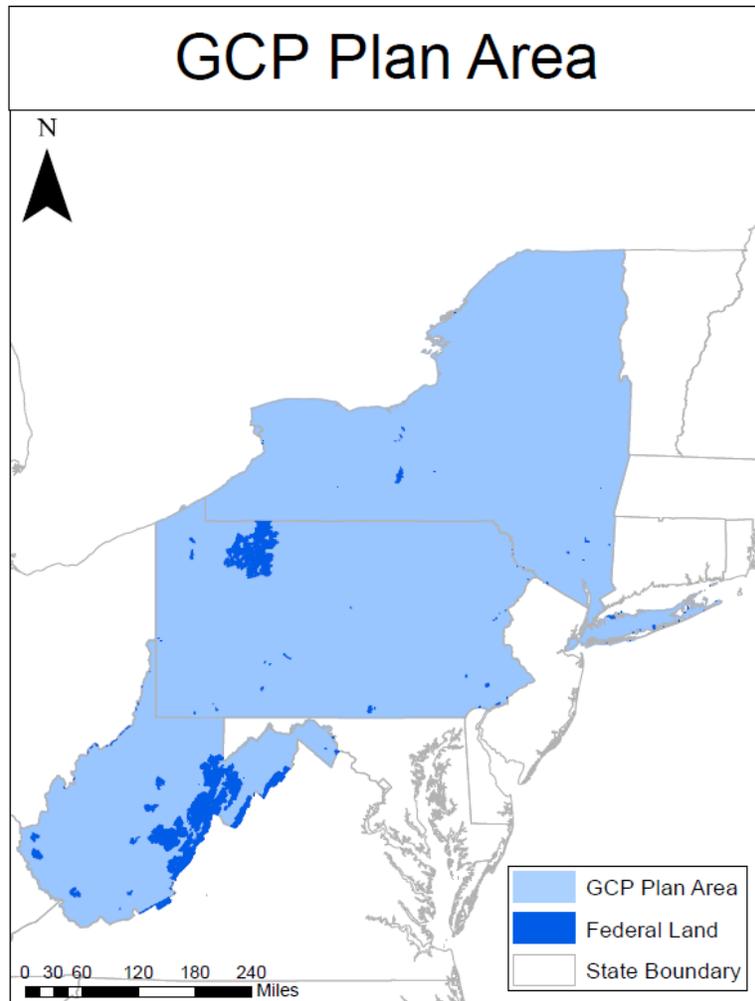


Figure 1. A map of the GCP Plan Area, excluding Federal lands.

The *Permit Area* is a subset of the Plan Area under the control of an Applicant that describes where a proposed project and its associated Covered Activities will occur. For this GCP, the Permit Area will be defined for each Permit.

This GCP analyzed and provides coverage for projects that are wholly contained within the Plan Area. Projects outside of the Plan Area are not eligible to participate through this streamlined process. For projects that extend beyond the GCP Plan Area, Project Proponents are encouraged

³¹ Section 6.1, HCP and ITP Permitting Handbook

to contact their local field office for technical assistance to address the impacts their projects may have on federally listed species or their habitats.

1.4 Duration of the GCP and of Individually Issued Permits

Upon approval, this GCP will be available for adoption and use by eligible Applicants for a period of 10 years, unless amended or renewed.

Individual permits issued through the streamlined GCP process may be authorized for a term of up to 5 years. Therefore, Permittees will have up to 5 years to complete their projects, even if the Permit is issued in the final year (i.e., year 10) of the GCP. Permittees that require additional time to complete their projects may seek renewal of their Permits in accordance with GCP section 6.4 and applicable regulations.

1.5 Alternatives to the Taking

ESA section 10(a)(2)(A)(iii) requires that the conservation plan describe what alternative actions to the taking were considered, and the reasons why such alternatives are not being utilized. The proposed action alternative is the use and implementation of the GCP. Often, the proposed alternative is selected because complete avoidance of federally listed species and their associated habitats is not practical or feasible for Covered Activities in the Plan Area.

The only alternative to the proposed action alternative the Service considered for Project Proponents is the no-action alternative. Under this alternative, if take is occurring from project activities, the Project Proponent would develop an individual HCP for their projects. The no-action alternative requires Project Proponents to develop independent HCPs, which would require Project Proponents and the Service to expend added resources completing the permitting process with no anticipated added benefits for the Covered Species. Regardless of whether Applicants utilize this GCP or develop independent HCPs to obtain Permits, they must meet the legal standards as identified in the issuance criteria found at 50 CFR 13 and 17, including to minimize and mitigate the effects of the resulting take to the “maximum extent practicable.” One conservation benefit of implementing this GCP is the ability of the Service to better coordinate the conservation efforts (i.e., mitigation) of the various permitted projects through consistent and prioritized CMs to be implemented across the landscape. In this way, Applicants can benefit from the ability to take advantage of the pre-project work the Service has completed, while the species can benefit through the improved coordination of conservation efforts across the landscape. For these reasons, the individual HCP alternative is not as advantageous for either Applicants, the Service, or the Covered Species.

2.0 Covered Species

This section provides an overview of the status and distribution, life history, and threats to the Covered Species, which include the IBAT, NLEB, and TCB.

2.1 Status and Distribution

2.1.1 Indiana Bat

The IBAT is a temperate, insectivorous, migratory bat that hibernates in mines and caves in the winter and spends summers in wooded areas. The species was listed as being in danger of extinction under the Endangered Species Preservation Act of 1966,³² and received protection as an endangered species when the ESA was signed into law in 1973. Critical habitat was designated in 1976 for the species at 13 *hibernacula* locations (consisting of 11 caves and 2 mines) in six states, including Hellhole Cave in WV (41 FR 41914). The Service developed a recovery plan for the species in 1983.³³ An agency draft of a revised plan was published in 1999 but was never finalized. A revision incorporating updated scientific information and recovery actions addressing specific threats was published in 2007.³⁴ After release of the draft revised recovery plan, previously undescribed impacts from white-nose syndrome (WNS) (see section 2.3.7) were discovered.

The IBAT recovery plan delineated four recovery units based on population discreteness, differences in population trends, and differences in land use and macrohabitats (Figure 2). The Plan Area includes portions of the Appalachian Mountains and Northeast recovery units.

To achieve the goal of maintaining adaptive capacity for the species (representation), the Service's recovery actions are focused on maintaining multiple (redundant) healthy (resilient) populations in each recovery unit³⁵.

³² 32 FR 4001, March 11, 1967

³³ Service 1983

³⁴ Service 2007

³⁵ Resiliency, redundancy, and representation are defined as follows:

- **Resiliency** means having sufficiently large populations for the species to withstand stochastic events (arising from random factors). We can measure resiliency based on metrics of population health (e.g., birth versus death rates and population size), if that information exists. Resilient populations are better able to withstand disturbances such as random fluctuations in birth rates (demographic stochasticity), variations in rainfall (environmental stochasticity), or the effects of human activities.
- **Redundancy** means having a sufficient number of populations for the species to withstand catastrophic events (such as a rare destructive natural event or episode involving many populations). Redundancy is about spreading the risk and can be measured through the duplication and distribution of populations across the range of the species. Generally, the greater the number of populations a species has distributed over a larger landscape, the better it can withstand catastrophic events.
- **Representation** means having the breadth of genetic makeup of the species to adapt to changing environmental conditions. Representation can be measured through the genetic diversity within and among populations and the ecological diversity (also called environmental variation or diversity) of populations across the species' range. The more representation, or diversity, a species has, the more it is capable of adapting to changes (natural or human caused) in its environment. In the absence of species-specific genetic and ecological diversity information, we evaluate representation based on the extent and variability of habitat characteristics within the geographical range (Shaffer et al., 2002; Wolf et al. 2015).

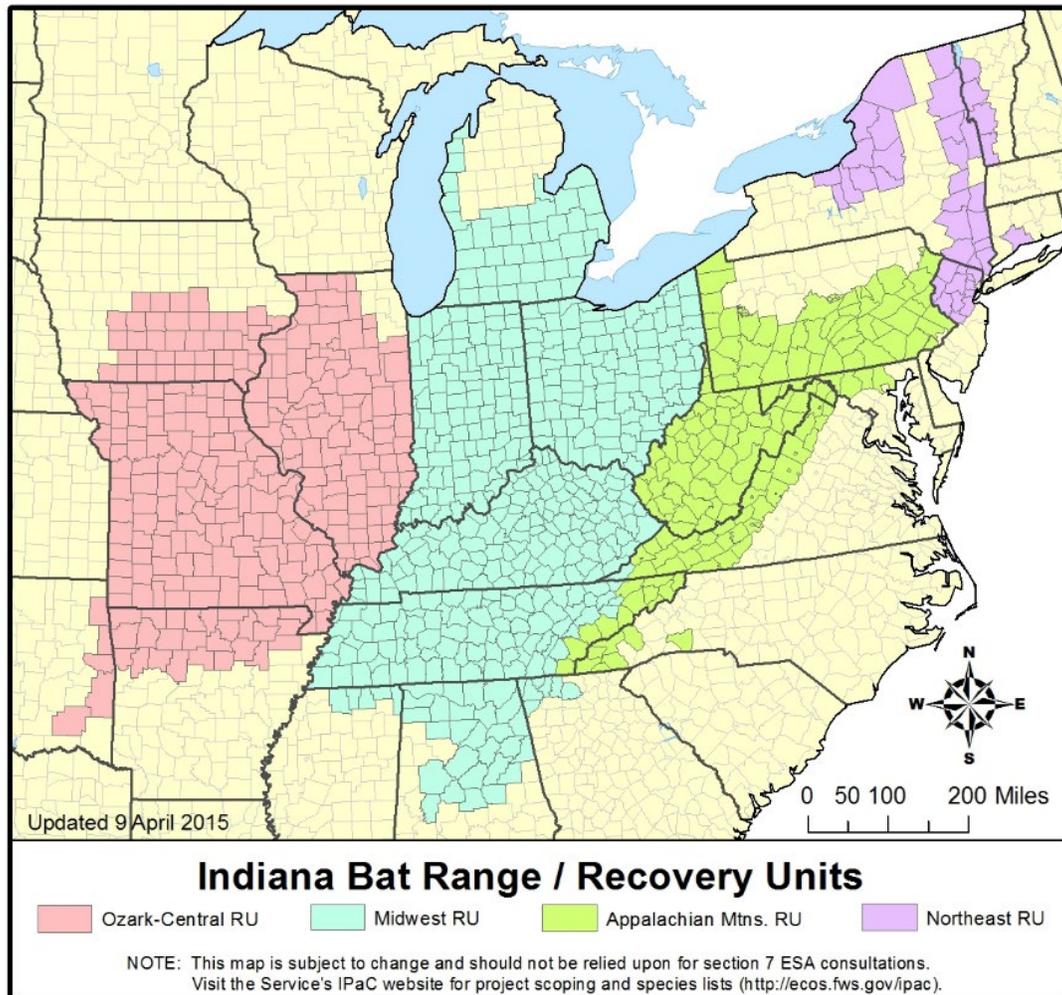


Figure 2. IBAT recovery units.

Across most of the species' range, IBAT population numbers are considered increasing or stable. However, some recovery units (such as those overlapping with the Plan Area) show evidence of declining population numbers (Figure 3).³⁶ Declines are associated with the onset of WNS, which spread south and west from NY across the range of the species. Though declines have been observed in all recovery units, impacts have been most severe in areas with the longest exposure to WNS. Since the onset of WNS, population declines of 75-99 percent have been reported in NY, PA, and WV. Intrinsic biological constraints also affect IBAT reproductive capacity. Because healthy adult females can produce only one pup per year, high adult female survival rates are needed to maintain or increase populations.³⁷

³⁶ Service 2024

³⁷ Thogmartin et al. 2013

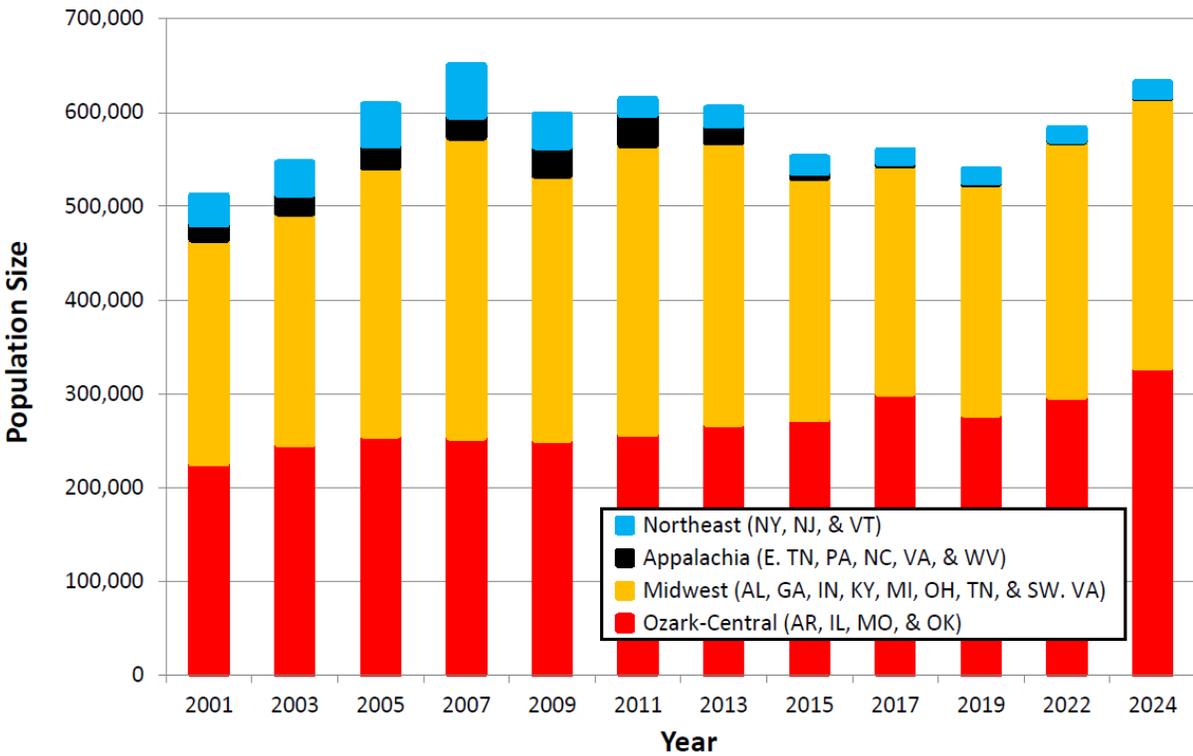


Figure 3. IBAT winter population estimates by recovery unit from 2001 to 2024.³⁸

Redundancy within IBAT populations has significantly declined. The species is no longer found in several previously occupied hibernacula, and a small number of locations now host most of the surviving individuals. The causes of variation in mortality by site are not understood. According to the 2019 IBAT 5-Year Review, 93 percent of the IBATs identified in the Northeast recovery unit were found at a single location, and 72 percent of the individuals found in the Appalachian Mountains recovery unit were found at three hibernacula sites.³⁹ This concentration of individuals increases the population-level threat posed by potential adverse impacts at any of these remaining locations.

Regarding maternity colony populations on the summer landscape, changes are not clear; however, variation is expected to reflect winter observations as noted above.

2.1.2 Northern Long-Eared Bat

Similar to the IBAT, the NLEB is a temperate, insectivorous, migratory bat that typically overwinters in caves or mines and spends the remainder of the year in forested areas.⁴⁰

On November 29, 2022, the Service published a final rule to reclassify the NLEB as endangered under the ESA. The current range of the NLEB includes 37 States, and 8 Canadian Provinces

³⁸ Service 2024

³⁹ Service 2019

⁴⁰ Service 2022a

(Figure 4). Prior to the arrival of WNS, the species was widely distributed⁴¹ and consistently documented during summer and winter surveys in the eastern portion of the range.⁴²

Historically, the NLEB was widely distributed in the eastern part of its range.⁴³ Prior to the documentation of WNS, NLEBs were consistently caught during summer mist-net surveys and detected during acoustic surveys in the eastern U.S. (80 FR 17974). The NLEB continues to be distributed across much of its historical range, but there are many gaps within the range where bats are no longer detected or captured, and in other areas, their occurrence is sparse. Similar to summer distribution, NLEBs were known to occur in many hibernacula throughout the East. Since WNS was documented, multiple hibernacula have no reported NLEBs. Frick *et al.* (2015) documented the local extinction of NLEBs from 69 percent of sites included in their analyses (468 sites where WNS had been present for at least 4 years in VT, NY, PA, MD, WV, and VA).

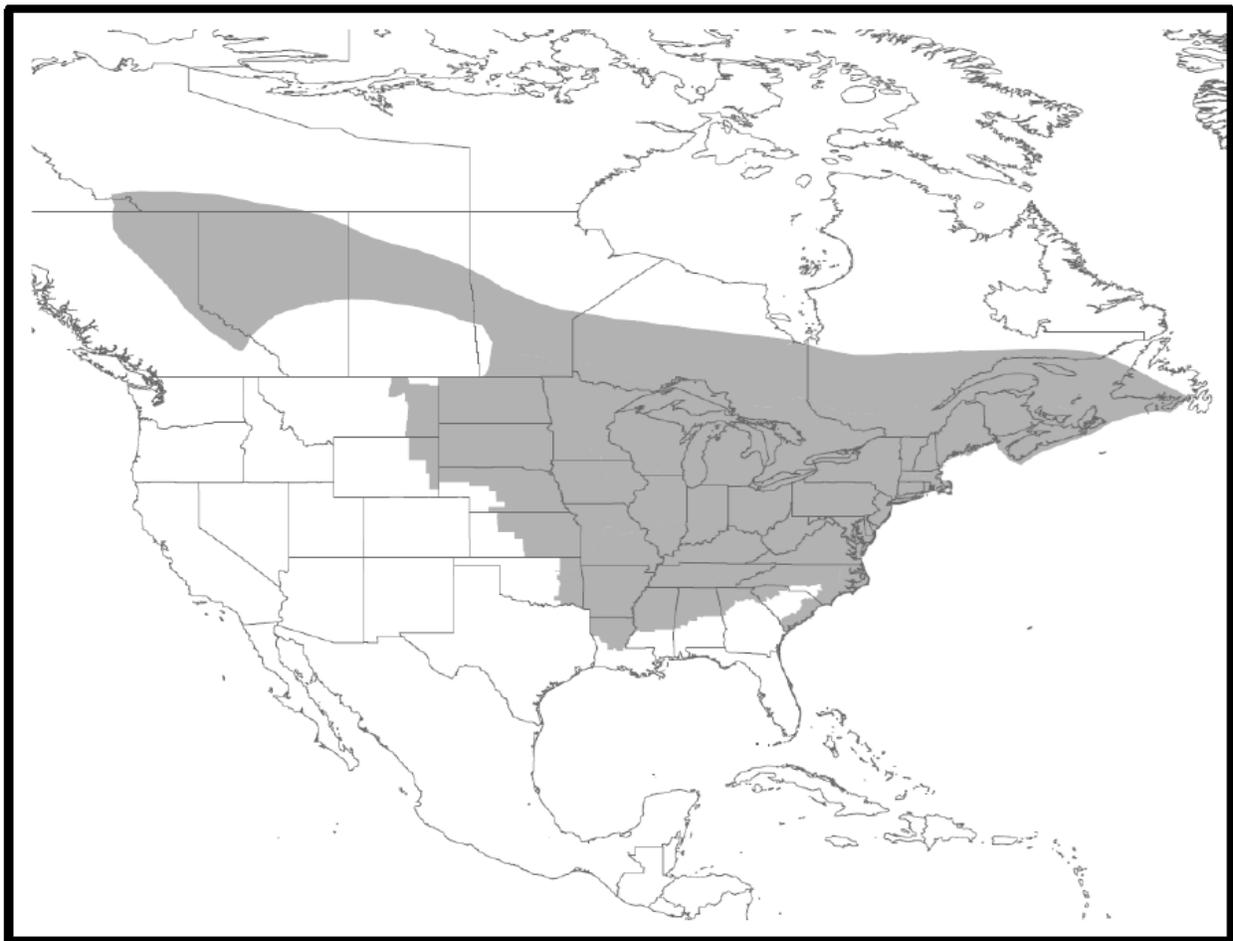


Figure 4. The range of the NLEB throughout the U.S. and Canada.

⁴¹ Caceres and Barclay 2000

⁴² 80 FR 17974

⁴³ Service 2022a

2.1.3 Tricolored Bat

Similar to both the IBAT and NLEB, the TCB is a temperate, insectivorous, migratory bat that typically overwinters in caves or mines and spends the remainder of the year in forested areas and occasionally roosts in man-made structures.⁴⁴

On September 14, 2022, the Service published a proposed rule to list the TCB as endangered under the ESA. The species faces potential extinction due to the rangewide impacts of WNS.

The current range of the TCB includes 39 states, 4 Canadian Provinces, and Guatemala, Honduras, Belize, Nicaragua, and Mexico (Figure 5). Prior to 2006 (pre-WNS), the TCB was highly abundant and widespread, with over 140,000 bats observed hibernating in 1,951 known hibernacula spread across greater than one billion acres in 34 states and 1 Canadian province.⁴⁵ TCB numbers varied temporally and spatially, but abundance and occurrence on the landscape were generally stable.⁴⁶ Although the majority of winter colony sizes were small (less than 100 individuals), the vast majority of individuals occupied a small subset of hibernacula. For example, in 2000, 32 percent (n=508) of the known winter colonies contained 90 percent of total known winter abundance.⁴⁷

With WNS now widespread across much of the TCB range, the species continues to be distributed across much of its historical range, but there are many gaps within the range where bats are no longer detected or captured, and in other areas, their occurrence is sparse. The effect of WNS on the TCB has been extreme, such that most summer and winter colonies have experienced severe declines following the arrival of WNS. Just 4 years after the discovery of WNS, for example, a study estimated that the TCB experienced a 75 percent decline in winter counts across 42 sites in Vermont, NY and PA.⁴⁸ Similarly, another study estimated the arrival of WNS led to a 10-fold decrease in TCB colony size.⁴⁹ Most recently, data used from 27 states and 2 provinces concluded WNS caused estimated population declines of 90–100 percent across 59 percent of the species range.⁵⁰

⁴⁴ Service 2021a

⁴⁵ Service 2021a

⁴⁶ Cheng *et al.* 2021; Wiens *et al.* 2022

⁴⁷ Service 2021a

⁴⁸ Turner *et al.* 2011

⁴⁹ Frick *et al.* 2015

⁵⁰ Cheng *et al.* 2021

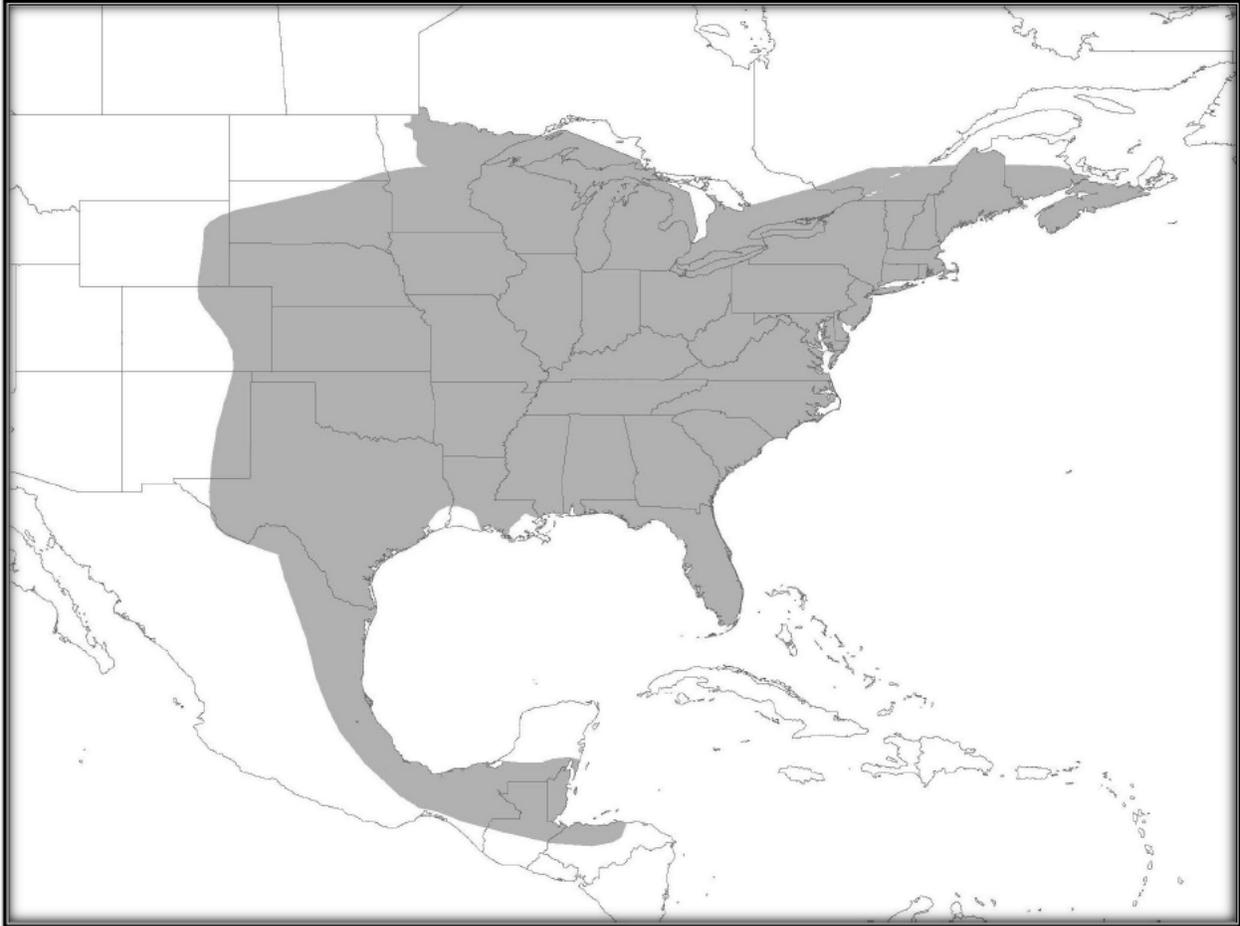


Figure 5. The range of the TCB throughout Canada, the U.S., and Central America.

2.2 Life Histories

The key elements in the annual life cycle of the IBAT, NLEB and TCB are similar. A summary of the life history information is presented here for all three species, with notes of any elements that are unique to the species, as well as general timing of their annual cycle (Table 1). More detailed information (i.e., SSAs, 5-Year Reviews, Recovery Plan) can be found by searching the species-specific pages at <https://ecos.fws.gov>.

The key stages in the annual life cycle for the Covered Species include hibernation, *spring staging* and migration, pregnancy, lactation, volancy (flight)/weaning, fall migration and swarming (Figures 6 and 7). All periods outside of hibernation are considered the *active season*. While timing varies with weather, latitude and elevation, these species generally hibernate between mid-fall through mid-spring each year. In the spring, reproductive females migrate and form maternity colonies where they bear and raise their young in wooded areas throughout the summer.

Occasionally, the females may use artificial structures during summer months.⁵¹ In the GCP Plan Area, the spring migration period is generally from mid-March or early April to early or mid-

⁵¹ von Oettingen, S., pers. comm.; Service 2021a; Service 2022a

May, depending on the species. Female bats begin migration shortly after emerging from hibernation and are pregnant when they reach their summer area. Females emerge from hibernation prior to males. Reproductively active females store sperm from autumn copulations through winter. Ovulation takes place after the bats emerge from hibernation in spring. The period after hibernation and just before spring migration is typically referred to as “staging,” a time when bats forage and a limited amount of mating occurs. This period can be as short as a day for an individual, but not all bats emerge on the same day.

Males and nonreproductive females do not typically *roost* in colonies and may stay close to their hibernaculum, though some will migrate to summer habitat. IBAT and NLEB pups are born between late May and early June, while TCB pups are born between June and July. Nursing of pups continues until weaning, which is shortly after young become volant (able to fly) about a month later (mid-to late-July for IBATs and NLEBs and mid-July to August for TCBs). Fall migration typically occurs between mid-August and mid-October for IBATs and NLEBs and late July to August for TCBs, though the timing of these events is also influenced by weather and latitude.⁵² Upon arrival at hibernacula, all three species “swarm,” a behavior in which large numbers of bats fly in and out of cave entrances from dusk to dawn. Swarming continues for several weeks, and mating occurs during the latter part of the period. After mating, females enter directly into hibernation, but not necessarily at the same hibernaculum where mating occurred. Most bats of both sexes hibernate by the end of November (by early to mid-October in northern areas, depending on the species).

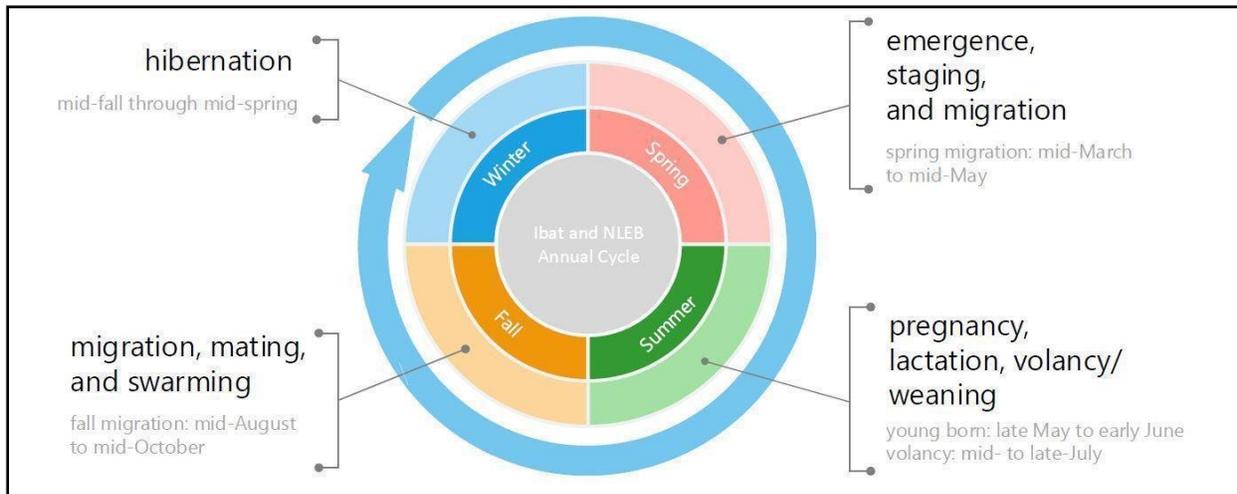


Figure 6. An illustration of major components and timing of the IBAT and NLEB annual cycle.

⁵² Service 2007

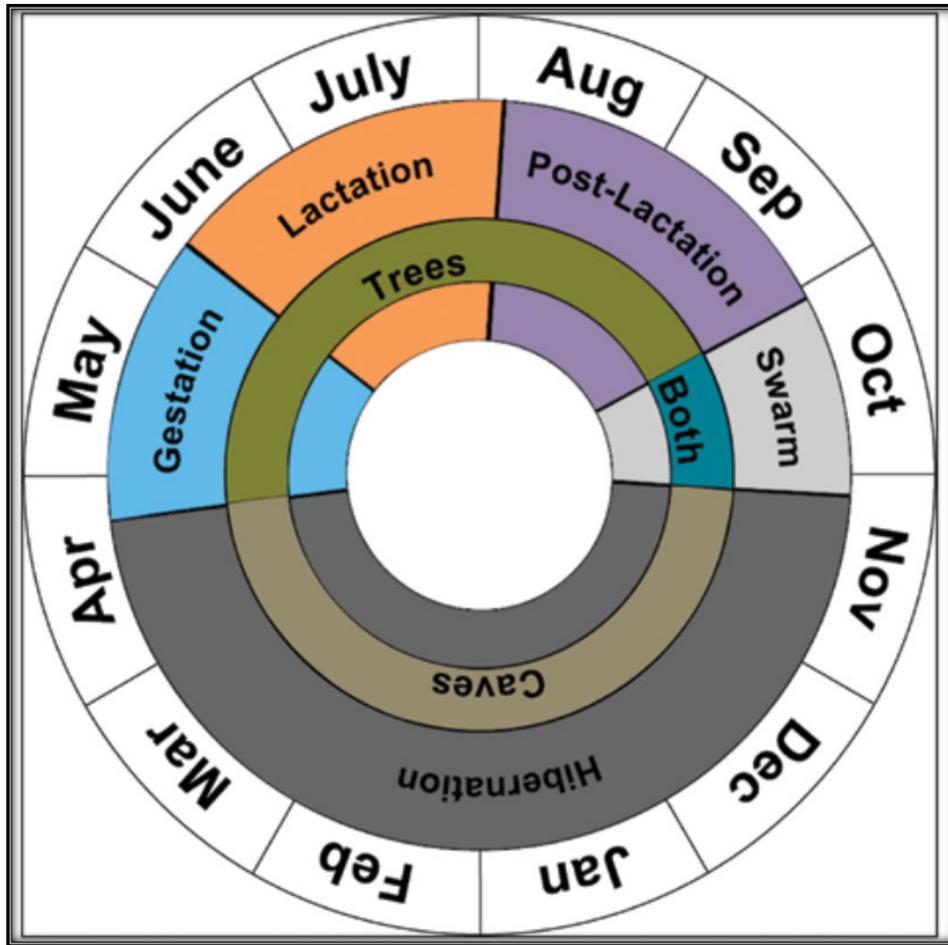


Figure 7. An illustration of major components and timing of the TCB annual cycle.

Throughout their range, the basic resource needs for the bats include safe winter hibernation sites; forested spring staging and *fall swarming areas*; connected forested summer habitat for roosting, foraging, and commuting; forested migratory stopover habitat; safe migration passage; insects; and clean drinking water (e.g., streams, riparian areas, and wetlands). The following sections provide additional brief description of various components of life history and biology.

2.2.1 Summer Habitat

Suitable summer habitat for these species consists of forested areas where they roost, forage, and travel. This includes forests and woodlots containing potential roosts as well as adjacent and interspersed nonforested areas such as emergent wetlands and the edges of agricultural fields, old fields, and pastures. Linear features such as fencerows, riparian forests, and other wooded corridors are also used. Forested areas may be dense or loose aggregates of trees with variable amounts of canopy closure.

Foraging behavior in these species typically occurs on forested hillsides and ridges, with occasional foraging over forest clearings, water, and along roads.⁵³ The IBAT and TCB commonly forage along riparian areas.⁵⁴

IBATs and NLEBs appear to avoid foraging in or crossing large open areas, choosing instead to use tree-lined pathways, small openings, or open fields close to woodlands.⁵⁵ However, TCBs will forage and cross over large open areas⁵⁶, but also will use edge habitat similar to IBATs and NLEBs.⁵⁷ For a complete definition, see the summer suitable habitat definition in the glossary.

2.2.2 Maternity Colonies and Roosts

Upon emergence from hibernacula in the spring, females seek suitable areas to establish maternity colonies. Colonies exhibit fission-fusion behavior where members frequently coalesce to form a group (fusion), though composition of the group is in flux, with individuals frequently departing to be solitary or to form smaller groups (fission) before returning to the main unit.⁵⁸ As part of this behavior, all three species switch roosts often, typically every 2–3 days.⁵⁹ Bats switch roosts for a variety of reasons, including for temperature regulation, precipitation, predation, parasitism, and to make use of ephemeral roost sites.⁶⁰ The need to investigate new potential roost trees prior to their current roost tree and/or roost substrate becoming uninhabitable (e.g., tree falls over and/or leaves fall off), may be the most likely scenario for roost switching behavior.⁶¹ IBAT and NLEB maternity colonies use networks of roost trees often centered around one or more primary (IBAT) or central-node (NLEB) roost trees.⁶² TCBs are also a colonial roosting species; however, it is unknown if they exhibit similar networks of roosting trees as IBATs or NLEBs. For IBATs and NLEBs, individual bats and small groups that collectively make up a maternity colony are often dispersed among a network of roost trees at any given time.⁶³ Maternity colonies for all three species can also be found roosting in structures like barns, sheds, bunkers, and beneath porch roofs particularly in areas where suitable tree roosts are unavailable. Male and nonreproductive female NLEBs may also roost in cooler places, including caves and mines.⁶⁴ TCBs are rarely observed in caves during the summer.⁶⁵ However, small numbers (mostly males) have been observed in mines.⁶⁶ Humphrey et al. 1976 reported

⁵³ van Zyll de Jong 1985

⁵⁴ LaVal et al. 1977; Brack and Whitaker 2001

⁵⁵ Patriquin and Barclay 2003; Yates and Muzika 2006

⁵⁶ Turner, M., pers. comm., 2023.

⁵⁷ Barbour and Davis 1969; Mumford and Whitaker 1982; Baker 1983; Fujita and Kunz 1984; Bender and Parmley 2008; Hein et al. 2008

⁵⁸ Barclay and Kurta 2007; Garroway and Broders 2007

⁵⁹ Foster and Kurta 1999; Veilleux and Veilleux 2004; Owen et al. 2002; Kurta et al. 2002; Kurta 2005; Carter and Feldhamer 2005; Quinn and Broders 2007; Poissant et al. 2010

⁶⁰ Carter and Feldhamer 2005

⁶¹ Kurta et al. 2002; Carter and Feldhamer 2005; Timpone et al. 2010

⁶² Callahan et al. 1997; Kurta et al. 2002; Silvis et al. 2015

⁶³ Kurta 2005

⁶⁴ Barbour and Davis 1969; Amelon and Burhans 2006

⁶⁵ Briggler and Prather 2003

⁶⁶ Damm and Geluso 2008

two observations of TCB maternity colonies in caves in Missouri. TCBs were observed roosting in rock shelters in cliffs in Kentucky (KY).⁶⁷

The exact number of roost trees a maternity colony uses at any given time (or throughout the season) has not been determined, because:

1. not every bat in a colony can be tracked;
2. not all bats can be tracked simultaneously;
3. bats are generally tracked for a short period; and
4. the number of trees used by a bat is correlated with number of days it is radio-tracked.⁶⁸

IBAT maternity colonies vary in size, with most documented maternity colonies containing less than 100 adult females.⁶⁹ NLEB maternity colonies also range in size, although between 30⁷⁰ and 60⁷¹ individuals may be most common. TCB bat maternity colony sizes are the smallest of the three species, and range between 1 and 29 females.⁷² All three species show some degree of interannual fidelity to single roost trees and/or maternity areas.

Roost tree preferences vary between the three species. IBATs are known to use a wide variety of tree species (greater than 5 inches *DBH*) based on presence of cracks, crevices, or presence of peeling bark. Typical IBAT primary roosts are located under exfoliating bark of dead ash, elm, hickory, maple, oak, or poplar, although any tree that retains large, thick slabs of peeling bark may be suitable. Primary IBAT roosts are usually composed of trees in early-to-mid stages of decay. NLEBs use a wider variety of roost types, including cavities, underneath bark, crevices, and within hollows of both live and dead trees and/or snags (typically greater than 3 inches *DBH*). During the summer, TCBs predominantly roost in the foliage of deciduous hardwood trees. Roosts are often in clusters of live and dead foliage of live and recently dead trees or broken branches that retain dead leaves. Dead leaf roosts vary in size but are similar in shape: umbrella-like shelter, resulting in a protective roof of dead foliage and a hollow core into which bats retreat.⁷³ Single dead oak leaves may also serve as roosting sites for lone males.⁷⁴ Live-leaf roosts are typically dense in structure but occasionally exhibit only a few leaves serving as shelter.⁷⁵ TCBs select oaks more often than any other tree species, followed by hickories and to a lesser extent, maples. Dead oak leaves persist longer on trees compared to other species and provide weather and visual protection for roosting TCBs.⁷⁶ The curling bark of birch trees are also used by TCB.⁷⁷

⁶⁷ Lacki and Hutchinson 1999

⁶⁸ Gumbert et al. 2002; Kurta et al. 2002

⁶⁹ Whitaker and Brack 2002

⁷⁰ Whitaker and Mumford 2009

⁷¹ Caceres and Barclay 2000

⁷² Hoying and Kunz 1998; Whitaker 1998; Veilleux and Veilleux 2004; Perry and Thill 2007; Poissant et al. 2010

⁷³ Veilleux et al. 2003; Thames 2020

⁷⁴ Perry and Thill 2007

⁷⁵ Veilleux et al. 2003

⁷⁶ Veilleux et al. 2003

⁷⁷ New York State Department of Environmental Conservation, unpublished data.

Average *maternity colony home range* sizes of individual IBATs may be several hundred acres in size⁷⁸ (e.g., 357.5 acres⁷⁹ and 205 acres,⁸⁰ and can be as much as 12,566 acres⁸¹). IBAT core roosting areas are smaller than foraging areas, with roosts often clustered in space. Colonies of IBATs have larger home ranges than individual bats with areas of overlapping core roosting/foraging areas and areas that do not overlap. Average home range sizes of individual NLEBs have been estimated at 148.8 to 173.7 acres, with colony home ranges being larger.⁸² Size of both foraging and core roosting areas likely varies depending on habitat quality. Home ranges for two lactating female TCBs roosting in trees were 420 acres and 642 acres.⁸³ Home ranges for male TCBs can be much larger than reproductive females.⁸⁴

2.2.3 Reproduction

Breeding begins in late summer or early fall when males begin swarming near hibernacula. After copulation, females store sperm during hibernation to delay fertilization until spring. When they emerge from their hibernacula, females ovulate, and the stored sperm fertilizes an egg. After fertilization, pregnant females migrate to summer areas where they roost in colonies and give birth to a single pup (two pups for TCBs). Most females within a maternity colony give birth around the same time, which may occur from late May or early June to early July (IBAT), mid-July (NLEB) or June and July (TCB), depending on the colony's latitude and elevation. Lactation then lasts 3 to 5 weeks, with IBAT and NLEB pups becoming volant between early July and early August and TCB pups becoming volant between mid-July and August.

2.2.4 Migration

Males and nonreproductive females may summer near hibernacula or migrate to summer habitat some distance from their hibernaculum. IBATs are known to migrate up to hundreds of miles from their hibernacula.⁸⁵ For example, IBAT migration distances between hibernacula and summer colonies have been documented as far as 357 miles in the Midwest.⁸⁶ In contrast, NLEBs are not considered to be a long-distance migrant (typically 40-50 miles). TCBs have been documented to migrate between 13 and 149 miles (21 and 240 km) between winter and summer habitat.⁸⁷ Migration is an energetically demanding behavior for all three species, particularly in the spring when their fat reserves and food supplies are low, and females are pregnant. Part of the conservation strategy of this GCP is to conserve the Covered Species as they migrate between hibernacula and their summer roosting habitat.

⁷⁸ Menzel et al. 2005; Sparks et al. 2005; Watrous et al. 2006; Jachowski et al. 2014; Kniowski and Gehrt 2014; Divoll and O'Keefe 2018

⁷⁹ Menzel et al. 2005

⁸⁰ Watrous et al. 2006

⁸¹ Service 2011

⁸² Owen et al. 2003; Lacki et al. 2009

⁸³ Wisconsin DNR 2018

⁸⁴ Thames 2020

⁸⁵ Service 2007

⁸⁶ Winhold and Kurta 2006

⁸⁷ Griffin 1940; Griffin 1945; Cockrum 1956; Barbour and Davis 1969; Samoray et al. 2019; White pers. comm., 2023

2.2.5 Winter Habitat and Ecology

Hibernacula for IBATs predominantly includes caves, mines, and other cave-like structures (e.g., active or abandoned mines, railroad tunnels, bridges). NLEBs may also use nontraditional hibernacula (e.g., buildings, talus slopes, rock crevices/outcroppings). TCBs typically overwinter in caves and mines and other cave-like structures (e.g., active or abandoned mines, railroad tunnels, bridges). Broadly, all three species hibernate from October to April depending on latitude and local weather conditions, with the exception of December to February for Long Island, NY specifically for NLEBs and TCBs. All three species are known to exhibit high interannual fidelity to their hibernacula sites.

Caves that meet temperature requirements for IBATs are rare. Most IBATs hibernate in caves or mines where the ambient temperature remains below 50 °F, but infrequently drops below freezing.⁸⁸ Caves that historically sheltered the largest populations of hibernating IBATs were those that provided the largest volumes and structural diversity, thus ensuring stable internal temperatures over wide ranges of external temperatures with a low likelihood of freezing.⁸⁹ IBATs generally hibernate in large clusters, sometimes with other species, with densities of 300 to 484 bats per square foot observed prior to WNS.⁹⁰

NLEB hibernacula typically have cracks and crevices for roosting, and relatively constant, cool temperatures (32 to 48 °F) with high humidity and no strong air currents. Specific areas where they hibernate have very high humidity, so much so that droplets of water are often seen on their fur. Within hibernacula, surveyors find them in small crevices or cracks, often with only the nose and ears visible. NLEBs tend to roost singly or in small groups, with hibernating population sizes ranging from just a few individuals to larger than 100.⁹¹ NLEBs display more winter activity than other cave species, and individuals often move between hibernacula throughout the winter.⁹²

TCBs are one of the first species to enter hibernation in the fall and one of the last species to emerge in the spring,⁹³ and they hibernate in more caves and mines than any other cave-hibernating species in eastern North America.⁹⁴ This species is found in deeper parts of caves and mines where ambient temperatures are constant and warm (compared to temperatures chosen by other hibernating species) and have high humidity (99 percent).⁹⁵ TCBs can number from 1 to several 100 within a hibernaculum, roosting singly, in pairs or in small clusters.⁹⁶

⁸⁸ Hall 1962; Myers 1964; Henshaw 1965; Humphrey 1978

⁸⁹ Tuttle and Kennedy 2002

⁹⁰ Service 2007

⁹¹ Service 2022a

⁹² Griffin 1940; Whitaker and Rissler 1992; Caceres and Barclay 2000

⁹³ LaVal and LaVal 1980; Merritt 1987

⁹⁴ Sealander and Young 1955; Barbour and Davis 1969

⁹⁵ Barbour and Davis 1969; Mohr 1976; Fujita and Kunz 1984; Raesly and Gates 1987

⁹⁶ Barbour and Davis 1969; Banfield 1974; Gottschang 1981; Fujita and Kunz 1984; Raesly and Gates 1987; Hofmeister 1989; Altringham 1996; Sandal et al. 2001; Briggler and Prather 2003; Damm and Geluso 2008

2.2.6 Spring Staging and Fall Swarming Habitat

In general, IBATs, NLEBs and TCBs use roosts in the spring and fall similar to those selected during the summer. Suitable spring staging/fall swarming areas are found in forested areas where they roost, forage, and travel, around a hibernaculum. This includes forested patches as well as linear features such as fencerows, riparian forests, and other wooded corridors. These forested areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Isolated trees are considered suitable habitat when they exhibit the characteristics of a suitable roost tree and are less than 1,000 feet from the next nearest suitable roost tree, woodlot, or wooded fencerow; although, distance is unknown for the TCB.

Table 1. General timing of the Covered Species annual cycle in the GCP Plan Area.

Season	NY	PA	WV
Maternity Season*	April 1-August 15	April 1-August 15	April 1-August 15
Active Season**	April 1-September 30 or October 31 (NY, excluding Long Island – IBAT, NLEB, TCB) March 1 to November 30 (Long Island – NLEB, TCB)	April 1-November 14	April 1-November 14
Inactive Season***	October 1-March 31 (NY, excluding Long Island) – IBAT, NLEB, TCB) November 1-March 31 (NY, excluding Long Island) – IBAT, NLEB, TCB) December 1-February 28 (Long Island – NLEB, TCB)	November 15-March 31	November 15-March 31

*The maternity season includes the range of time when the Covered Species are concentrated in maternity colonies, which includes the pup season. The pup season includes the range of time when females are close to giving birth and have nonvolant (i.e., unable to fly) young.

**The active season includes the range of time when the Covered Species may be present outside of hibernacula and using various habitats for parts of their life cycle. For Long Island, NY, both NLEBs and TCBs are active longer in summer based on acoustic records and thus, have a longer active season as noted in the table.

***The inactive season includes the range of time when the Covered Species are hibernating. For Long Island, NY, the inactive season is shorter for NLEBs and TCBs as they are active during a longer portion of the year. Also, for Upstate NY, two different inactive seasons are given depending on the distance a proposed project is from a hibernaculum – IBAT: October 1 to March 31 if a proposed project is > 10 miles from a Priority (P) 3 or P4 hibernaculum or > 20 miles from a P1 or P2 hibernaculum OR November 1 to March 31 if a proposed project is ≤ 10 miles from a P1 or P2 hibernaculum or ≤ 20 miles from a P1 or P2 hibernaculum; NLEB and TCB: October 1 to March 31 if a proposed project is > 5 miles from a hibernaculum OR November 1 to March 31 if a proposed project is ≤ 5 miles of a hibernaculum.

2.3 Threats to Survival

This section briefly describes the primary threats to the species, not all of which relate directly to this GCP. Threats associated with the Covered Activities within this GCP are discussed in section 4.5.1.

Loss or degradation of occupied habitat, human disturbance at hibernacula, and pesticides were among the causes of decline first identified for the IBAT.⁹⁷ The Service's draft revised recovery plan identified additional threats including impacts to summer habitat, environmental contaminants, the effects of climate change, and collisions with manmade objects.⁹⁸ Subsequent 5-Year Reviews identified WNS as the most significant threat to IBATs. Those reviews also included nonnative invasive insect and plant species as threats to the species.⁹⁹

Similar to the IBAT, the Service currently considers WNS, wind energy development-related mortality, habitat loss, and climate change as the primary threats to NLEBs and TCBs with WNS being the most significant.¹⁰⁰

2.3.1 Loss or Degradation of Habitat

As stated above, IBATs, NLEBs, and TCBs require suitable habitat for roosting, foraging, and commuting between those habitats during spring, summer, and fall. This generally includes forested features, wetlands, and water sources. All three species also require safe migration habitat and winter habitat. Loss or degradation of these habitats reduces species survival and reproduction.

As discussed in more detail below, loss or degradation of these habitats can result from impacts to individual roosts, removal or fragmentation of roosting or foraging areas and travel corridors, impacts to spring staging or fall swarming areas, and loss or degradation of hibernacula.

2.3.1.1 Impacts to Individual Roosts

The Covered Species display breeding site fidelity in which they rely on previously established roost sites each year. The loss of individual roosts can affect maternity colonies regardless of whether the impacts occur during the active (spring/summer/fall) or inactive (winter) seasons.

For example, loss of individual roosts may affect maternity colony fission-fusion dynamics. Although occasional loss of a roost site is a natural phenomenon and can occur as a result of stochastic events (e.g., storms, wind, ice, fire, insects, etc.), to which maternity colonies can adapt, the loss of multiple roosts likely stresses individual bats, as well as the social structure of the colony.¹⁰¹ Maternity colonies are comprised of individual bats that overwinter in several different hibernacula. These individuals must be able to reassemble each spring to reestablish colonies. Loss of established roosting and foraging areas reduces opportunities for individual

⁹⁷ Service 1983

⁹⁸ Service 2007

⁹⁹ Service 2009; Service 2019

¹⁰⁰ Service 2021a; Service 2022a

¹⁰¹ Service 2007

bats returning from wintering sites to gather in familiar locations to re-form maternity colonies. The loss of one or more primary roost(s)/central node tree(s) or multiple alternate roosts may cause colonies to fragment (split into multiple colonies).¹⁰²

Because their colonial behavior contributes to reproductive success, colony fragmentation is expected to result in reduced thermoregulatory benefits (bats cluster together to stay warm) that require increased energy expenditures or increased use of torpor¹⁰³ that can result in reduced recruitment¹⁰⁴ and/or reduced adult survival.

Smaller colonies may be expected to provide less thermoregulatory benefits for adults and for nonvolant pups in cool spring temperatures. Female bats have narrow energy budgets, and in the spring need to have sufficient energy to keep warm, forage, and sustain pregnancies. Increased flight distances or smaller colonies are expected to reduce pregnancy success, and/or pup survival.

2.3.1.2 Loss or Fragmentation of Roosting and Foraging Areas and Travel Corridors

Habitat connectivity aids orientation, attracts insects, and provides shelter from wind and predators.¹⁰⁵ One study demonstrated that IBATs chose to travel along wooded corridors rather than fly over open fields, even though use of such corridors increased commuting distance.¹⁰⁶ Obtaining equivalent resources in heavily fragmented landscapes containing smaller, more distant patches of suitable habitat requires longer or more frequent commuting when compared with landscapes containing larger habitat patches.¹⁰⁷ The Covered Species energetic constraints may preclude the use of overly patchy habitats.¹⁰⁸

The impact of shifting flight patterns and foraging areas on individual bats varies. Recovery from the stress of hibernation and migration may be affected by the increased energy demands of searching for new roosting/foraging habitat in fragmented landscapes where forested habitat is limited. Pregnant females displaced from preferred roosting/foraging areas expend additional energy to search for alternative habitat,¹⁰⁹ which could result in reduced reproductive success (failure to carry to full term or failure to raise pup to volancy) for some females. It is reasonable to assume that females that do give birth may have pups with lower birth weights given the increased energy demands associated with longer flights, or their pups may experience delayed development. Therefore, we assume these longer flights would also be experienced by pups once they become volant, which could affect the survival of these pups as they enter hibernation with

¹⁰² Sparks 2003; Silvis et al. 2014a; Silvis et al. 2014b

¹⁰³ A state of lowered physiological activity typically characterized by reduced metabolism, heart rate, respiration, and body temperature that occurs in varying degrees especially in hibernating animals.

¹⁰⁴ The process of adding new individuals to a population or subpopulation by growth, reproduction, or immigration.

¹⁰⁵ Racey and Entwistle 2003

¹⁰⁶ Murray and Kurta 2004

¹⁰⁷ Kniowski and Gehrt 2014

¹⁰⁸ Patterson et al. 2003

¹⁰⁹ Gardner and Cook 2002; Kurta and Murray 2002

potentially reduced fat reserve. Overall, the effect of the loss of roosting/foraging habitat on individual bats from the maternity colonies may be reduced reproduction for that year.

2.3.1.3 Loss and/or Fragmentation of Spring Staging and Fall Swarming Areas

The Service assumes that exposure or risk of *harm* from loss or fragmentation of habitat increases with proximity to a hibernaculum, although this relationship has not been quantified. Swarming areas must support the foraging and roosting needs of large numbers of bats during the fall swarming period. After arriving at a swarming location, bats build up fat reserves and engage in mating and other social interactions. While bats congregate near hibernacula, they may not hibernate in the same areas where they swarm. Loss of roosting and foraging habitat around hibernacula may result in reduced fat accumulation during fall and, in turn, reduced overwintering survival.

2.3.1.4 Loss or Degradation of Hibernacula

Destruction and degradation of winter hibernacula have been identified as long-standing and ongoing threats to all three species,¹¹⁰ and vandalism at these sites was identified as a threat in the earliest recovery plans for the IBAT.¹¹¹ Loss or modification of these winter roost sites can result in impacts ranging from harm to individuals to population level-effects.¹¹² For example, excavation or filling hibernacula can result in alteration of the thermal or humidity regime and ability of sites to support hibernating bats. Further, bats present during any excavation or filling can be crushed or suffocated.¹¹³

In addition, debris buildup at entrances or on cave gates can significantly modify the cave or mine site characteristics by restricting airflow and the course of natural water flow. Water flow restriction can lead to flooding, thus drowning hibernating bats.¹¹⁴ Several known NLEB hibernacula are subject to flooding, presenting a threat to hibernating bats.¹¹⁵

2.3.2 Disturbance

Human disturbance of hibernating bats has long been understood to be a primary threat to the Covered Species and remains a concern today.¹¹⁶ Such disturbance can result from intentional killing or harassment of bats,¹¹⁷ recreational caving, cave commercialization (i.e., cave tours and other commercial uses of caves), vandalism, or research-related activities.

Human disturbance can cause hibernating bats to arouse more frequently, result in movements within or between caves, and cause depletion of energy stores at a time when food and water resources are unavailable.¹¹⁸ This is even more important for sites where bats may be impacted

¹¹⁰ 80 FR 17974; Service 2007; Service 2019; Service 2022a

¹¹¹ Service 1983

¹¹² Spanjer and Fenton 2005; Service 2007; Service 2022a

¹¹³ Service 2022a

¹¹⁴ Amelon and Burhans 2006

¹¹⁵ G. Nordquist, pers. comm., 2012

¹¹⁶ Amelon and Burhans 2006; Service 2007; Service 2012; Service 2021a; Service 2022a

¹¹⁷ Tuttle 1979

¹¹⁸ Beer 1955; Tuttle 1979; Thomas et al. 1990; Speakman et al. 1991; Thomas 1995

by WNS, because more frequent arousal from torpor increases the probability of mortality in bats with limited fat stores.¹¹⁹

Though progress has been made in reducing the number of caves and mines in which disturbance threatens hibernating bats, the threat has not been eliminated. Though several high-priority hibernacula have been protected, others remain vulnerable to unauthorized entry and vandalism.¹²⁰

2.3.3 Environmental Contaminants

Environmental contaminants such as pesticides, oil pits, and spills have the potential to negatively impact bats. Contaminants (e.g., hydraulic fluids, gasoline) from construction vehicles and equipment can degrade nearby waterways and affect the insect forage base. Roads and road use can generate pollution that enters the air or water and degrades habitat.¹²¹ Spills, although infrequent and often related to accidents, can transfer contaminants directly from vehicles or cargo into the environment.¹²²

Spilled contaminants, such as vehicle and equipment fuels, lubricants, and hydraulic fluids, can create an above ground or subterranean path to a hibernaculum and adversely affect bats through inhalation, ingestion (in drinking water), or dermal absorption.¹²³

2.3.4 Collisions with Manmade Objects

Collisions with manmade objects including poorly constructed cave gates, vehicles, communication towers, airplanes, and wind energy turbines have been reported and could represent a threat to local populations under certain conditions.¹²⁴

Wind energy has become the largest and one of the fastest growing sources of renewable energy in the U.S.¹²⁵ The current and ongoing expansion of wind energy facilities may lead to a meaningful impact on the population dynamics of the Covered Species, depending on the magnitude of risk from collision faced by migrating and summer resident bats.¹²⁶

2.3.5 Effects of Climate Change

Accumulating evidence suggests that the *phenology* of organisms, species biogeography and the composition and dynamics of communities are changing in response to a changing climate, and that these effects could constitute a threat to the Covered Species.¹²⁷

¹¹⁹ Boyles and Willis 2010; Service 2022a

¹²⁰ Service 2019

¹²¹ Campbell and Doeg 1989

¹²² PA Game Commission and PA Department of Conservation and Natural Resources 2020

¹²³ PA Game Commission and PA Department of Conservation and Natural Resources 2020

¹²⁴ Service 2007; Service 2019; Service 2022a

¹²⁵ AWEA 2020

¹²⁶ Service 2019

¹²⁷ Walther et al. 2002; Jones et al. 2009; Rebelo et al. 2010; Jones and Rebelo 2013; Sherwin et al. 2013; O'Shea et al. 2016; Frick et al. 2019

Climate influences food availability, timing of hibernation, frequency and duration of torpor, rate of energy expenditure, reproduction, and development rates of juveniles.¹²⁸ Likely future impacts are changes in the range and the timing of migration.¹²⁹ Warmer climates may benefit females by causing earlier parturition (birth) and weaning of young, allowing more time to mate and store fat reserves in preparation for hibernation. Similarly, earlier gestation and parturition may benefit juveniles by providing a longer growth period prior to the breeding and hibernation season.¹³⁰ In contrast, disruption of hibernation, extreme weather events, reduced water availability in arid environments, and the spread of disease also may cause significant mortalities.¹³¹

Climate change is expected to affect the timing and magnitude of precipitation. While lack of water due to warmer and drier conditions may be problematic, too much springtime precipitation can also result in negative consequences to insectivorous bats. During heavier precipitation events, there may be decreased insect availability and reduced echolocation ability resulting in decreased foraging success.¹³² Precipitation also wets bat fur, reducing its insulating value and increasing a bat's metabolic rate.¹³³

Changes in temperature may affect hibernation periods and the availability of suitable hibernacula in the future (e.g., some currently occupied sites may become too warm). Increased variation in climatic extremes raises the possibility of bats emerging from hibernation early or at a greater frequency. That would not only put hibernating bats at risk from depleted energy stores but could also affect the birth and survival of pups. Resources, especially insect prey, may be limited or variable during periods of early arousal from hibernation. Thus, climate change will likely also affect the future distribution of suitable hibernacula.¹³⁴ Therefore, finding suitable maternity sites may be a function of finding new hibernacula, and summer and winter range shifts may occur concurrently.

Climate change may also impact the Covered Species in ways that are more difficult to quantify. For example, this may include phenological mismatch (e.g., timing of various insect hatches not aligning with key life history periods of spring emergence, pregnancy, lactation, or fall swarming). In addition, there may be shifts in distribution of bats, forest communities, invasive plants, invasive forest pest species, or insect prey. With increasing temperatures, a poleward range expansion of temperate-zone species is predicted.¹³⁵ Any northern range shifts; however, will be limited based on availability of suitable hibernacula and energetic requirements for hibernation and migration. While more northerly sites may become suitable for hibernation, there may be other constraints on successful recruitment at higher latitudes. The active season is shorter in higher latitudes or elevations, which may be particularly important for juveniles. In addition to potential bat range shifts, long-term increases in global temperatures are correlated with shifts in butterfly ranges¹³⁶ and similar responses are anticipated in moths and other insect

¹²⁸ Sherwin et al. 2013

¹²⁹ Mistry and Moreno-Valdez 2008; Lundy et al. 2010; Dixon 2011; Ancillotto et al. 2016; McCracken et al. 2018; Stepanian and Wainwright 2018

¹³⁰ Burles et al. 2009; Frick et al. 2010

¹³¹ Adams and Hayes 2008; Jones et al. 2009; Adams 2010; Hayes and Adams 2017

¹³² Geipel et al. 2019

¹³³ Webb and King 1984; Voigt et al. 2011

¹³⁴ Humphries et al. 2002

¹³⁵ Humphries et al. 2004

¹³⁶ Parmesan et al. 1999; Wilson et al. 2007; Breed et al. 2013

prey. Milder winters may result in range expansions of insects or pathogens with a distribution currently limited by cold temperatures (e.g., hemlock woolly adelgid, southern pine beetle). Climate change could impact (e.g., disease, range shifts, phenology) tree species commonly used as roost trees,¹³⁷ but it is not clear how maternity colonies will respond as a result of these impacts.

Climate change may influence WNS as temperature, humidity, phenology, and other factors affect the interactions between the fungus that causes WNS and hibernating bats.¹³⁸ Some sites, for example, may become more suitable for growth of the disease-causing fungus if hibernacula microclimates warm.¹³⁹

2.3.6 Nonnative and Invasive Species

Biological invasions by nonnative invasive species represent a significant threat to the maintenance of natural forest ecosystems.¹⁴⁰ Invasive forest insect pests, such as the emerald ash borer (*Agrilus planipennis*), Asian long-horned beetle (*Anoplophora glabripennis*), and the spongy moth (*Lymantria dispar*) can significantly impair the health, productivity, species richness, and overall biodiversity of eastern U.S. forests and could affect the bat communities dependent on them.¹⁴¹ Though specific effects to the Covered Species are not well reported, the impacts of nonnative invasive species to the habitats upon which the bats depend are well-documented, and the resulting effects to bats are presumed to be significant in portions of the species' range.¹⁴² For example, though IBATs can use many different tree species as primary roosts, in certain portions of the species range they may preferentially select for ash trees, which are currently being impacted by the emerald ash borer. This species-specific selection has the potential to generate short-term benefits to the IBAT as it provides additional dead and dying tree roost potential but can have long-term adverse effects because trees will eventually fall over and become unusable as roosting trees. Depending on the density of ash trees in a given area, there could be a significant loss of roost trees that may fragment maternity colonies and cause reduced reproductive success.¹⁴³

Other nonnative invasive species such as tree of heaven (*Ailanthus altissima*), garlic mustard (*Alliaria petiolata*), European and Japanese barberry (*Berberis* spp.), Oriental bittersweet (*Celastrus orbiculatus*), invasive shrub honeysuckles (*Lonicara* spp.), common buckthorn (*Rhamnus cathartica*), mile-a-minute vine (*Persicaria perfoliata*), kudzu (*Pueraria lobata*) and others can negatively impact the quality of bat habitat by outcompeting native vegetation and altering succession of native forest species. Nonnative plants may also affect the amount of insect biomass available to bats and other insectivores and disrupt terrestrial and aquatic food

¹³⁷ Service 2019; Service 2022a

¹³⁸ Hayman et al. 2016; McClure et al. 2020; Hoyt et al. 2021

¹³⁹ Service 2019

¹⁴⁰ Liebhold et al. 1995

¹⁴¹ Wallner 1997; Aukema et al. 2011

¹⁴² Service 2019; Service 2022a

¹⁴³ Kurta et al. 2002

webs.¹⁴⁴ Numerous other nonnative invasive species impact forest dynamics within the species' range, but few are well-studied or easily controlled at present.¹⁴⁵

2.3.7 White-Nose Syndrome

For over a decade, WNS has been the foremost stressor on the Covered Species. WNS is a disease affecting bats that is caused by the fungal pathogen *Pseudogymnoascus destructans* (*Pd*).¹⁴⁶ The disease and pathogen were first discovered in eastern NY in 2007 (with photographs showing presence since 2006), and since then has spread to at least 41 states and 7 provinces in North America (Figure 8).¹⁴⁷ *Pd* invades the skin of bats, initiating a cascade of physiological and behavioral processes that often lead to mortality.¹⁴⁸ Infection leads to increases in the frequency and duration of arousals during hibernation and raises energetic costs during torpor bouts, both of which cause premature depletion of critical fat reserves needed to survive winter.¹⁴⁹ Bats that do not succumb to starvation in hibernacula often seek riskier roosting locations near entrances to roosts or emerge from roosts altogether, where they face exposure to winter conditions and scarce prey resources on the landscape.¹⁵⁰ The weeks following emergence from hibernation also mark a critical period because prey availability is still limited, energetic costs of healing from WNS are high, and the potential for complications arising from reactivation of the immune system upon emergence from hibernation (immune reconstitution inflammatory syndrome) that can lead directly to mortality or impact reproductive success.¹⁵¹

¹⁴⁴ Tallamy 2004; Tallamy et al. 2010; McNeish et al. 2017

¹⁴⁵ Brack et al. 2013; Welch and Leppanen 2017

¹⁴⁶ Blehert et al. 2009; Turner and Reeder 2009; Lorch et al. 2011; Puechmaille et al. 2011; Willis et al. 2011; Coleman and Reichard 2014; Frick et al. 2016; Bernard et al. 2020; Hoyt et al. 2021

¹⁴⁷ Meteyer et al. 2009

¹⁴⁸ Warnecke et al. 2013; Verant et al. 2014

¹⁴⁹ Reeder et al. 2012; McGuire et al. 2017; Cheng et al. 2019

¹⁵⁰ Langwig et al. 2012

¹⁵¹ Reichard and Kunz 2009; Meteyer et al. 2012; Field et al. 2015; Fuller et al. 2020

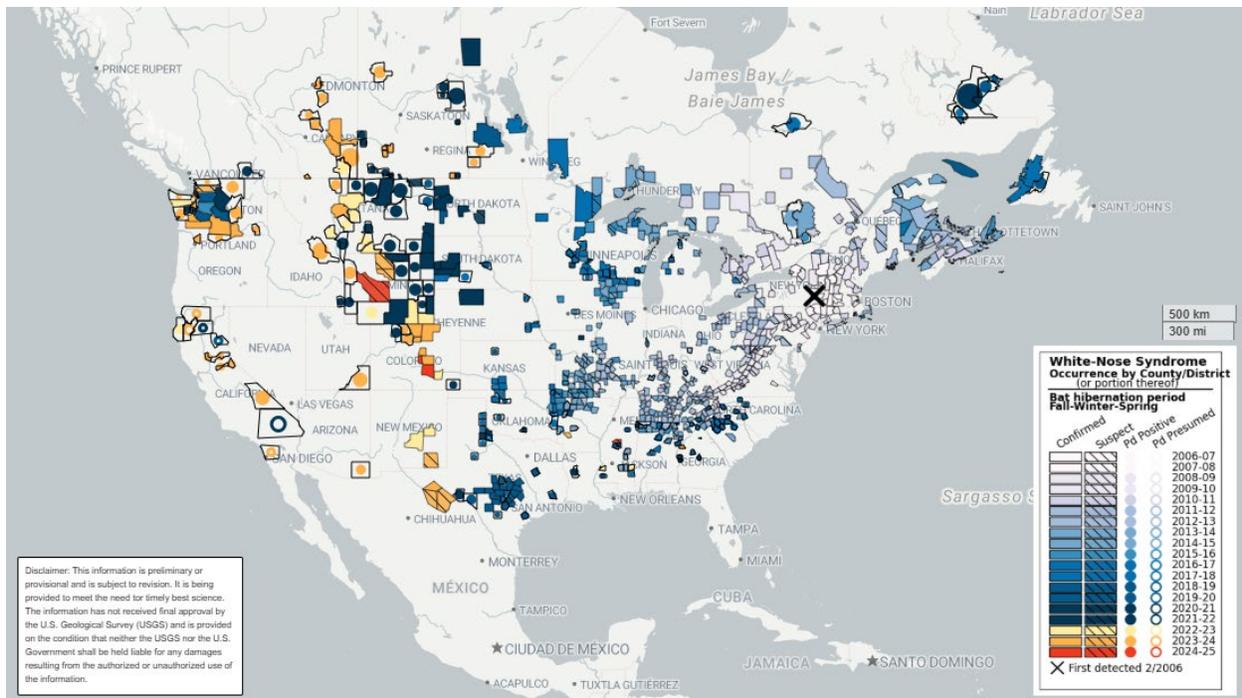


Figure 8. Occurrence of Pd and WNS in North America based on surveillance efforts in the U.S. and Canada: WNS disease confirmed (color-coded), WNS disease suspected (stripes), Pd positive (WNS disease not confirmed) (solid circles), and Pd presumed (open circles). Pd and WNS occurrence records generally reflect locations of winter roosts and are not representative of the summer distribution of affected bats (<https://www.whitenosesyndrome.org/> accessed June 23, 2025).

WNS-affected bats that survive overwintering emerge from hibernation with greatly depleted fat reserves compared to noninfected bats¹⁵² and suffer wing damage¹⁵³ that affects migration and foraging activities. WNS-affected females that survive migration to their summer habitat must partition energy resources among the demands of healing, foraging, keeping warm, successful pregnancy, and pup-rearing.

The disease has significantly reduced the species' redundancy and overall resiliency to withstand other cumulative threats. For example, a 2016 study modeled the interaction of WNS and wind turbine mortality and found that the combined effects resulted in larger population impacts than when considering the effects of either stressor alone.¹⁵⁴

IBAT, NLEB and TCB populations have experienced severe declines following the arrival of WNS. One recent meta-analysis of data from 27 states and 2 provinces concluded that WNS was estimated to have caused NLEB population declines of 97–100 percent across 79 percent of the species range.¹⁵⁵ Impacts to IBATs are most severe to date in areas with the longest exposure to WNS (e.g., 75-99 percent declines in NY, PA, and WV). Similarly, TCB populations have declined an estimated 90-100 percent across 59 percent of their range.¹⁵⁶

¹⁵² Reeder et al. 2012; Warnecke et al. 2012

¹⁵³ Meteyer et al. 2009; Reichard and Kunz 2009

¹⁵⁴ Erickson et al. 2016

¹⁵⁵ Service 2022a

¹⁵⁶ Cheng et al. 2021

3.0 Participating in the Conservation Program

This GCP streamlines project review and Permit issuance in part by relying on a uniform set of eligibility requirements and CMs. This approach allows for a landscape-level assessment of both the expected impacts from multiple project types and anticipated conservation benefits.

The following section describes how the Service will determine Applicant eligibility, the project types and activities covered by this GCP, and discusses the availability of the GCP and the duration of individually issued Permits.

To take advantage of the streamlining aspects of this GCP, a Project Proponent will coordinate with their local field office to verify that:

1. they are eligible to participate (section 3.1);
2. their projects are eligible (section 3.4);
3. they have all associated compliance documents (appendix C); and
4. that any other project-specific requirements are met (section 4.6).

A “GCP Eligibility Key,” found in appendix B, guides Project Proponents through questions on project-specific information to verify that a project is eligible to adopt this GCP as the conservation plan component of their application for a Permit. Project Proponents are encouraged to contact their local field office (see appendix A) as early in the initial planning process as possible to request technical assistance.

3.1 Project Proponents, Applicants, and Permittees

For the purposes of this plan, a Project Proponent is any person¹⁵⁷ planning to engage in activities within the GCP Plan Area that may result in take of Covered Species.

If a Project Proponent chooses to apply for a Permit through the GCP process and meets the eligibility requirements outlined in chapter 3, and they submit a complete application as determined by the Service, they are referred to as an “Applicant.” An Applicant must have the legal authority to execute their proposed project on lands within the Plan Area and sufficient legal control to implement the requirements of the GCP. Legal control may be in the form of ownership of property in fee simple, an easement, a lease agreement that grants authority for the proposed project, or a similar type of legal authority to conduct the proposed activities.¹⁵⁸ The Service’s standard application form through ePermits¹⁵⁹ requires that Applicants affirm their authority to conduct their proposed activities including, without limitation, any mitigation.

The Applicant must also certify that they have read and understand the regulations that apply to the Permit and that all information included in their application is true to the best of their knowledge. The Service’s general Permit regulations are codified at 50 CFR part 13, and ITP regulations for endangered and threatened wildlife are found at 50 CFR 17.22(b)(1), and 50 CFR

¹⁵⁷ See definition in ESA section 3(13).

¹⁵⁸ 50 CFR 402.02; 17.22(b)(2)(i)(F); 17.32(b)(2)(i)(F)

¹⁵⁹ https://fwsepermits.servicenowservices.com/nav_to.do?uri=%2Fhome_splash.do%3Fsysparm_direct%3Dtrue.

17.32(b)(1), respectively. Factors that disqualify a person from seeking or holding a Permit are found at 50 CFR 13.21.

Following issuance of a Permit as described below, an Applicant becomes a “Permittee.”

3.2 Incidental Take Permits Specific to this GCP

This GCP streamlines several steps typically completed during the standard HCP processes (appendix G). In this GCP, Project Proponents will coordinate with the local field office to determine whether take of the Covered Species is reasonably certain to occur and whether the project is eligible to use the GCP. If a Project Proponent concludes that incidental take is reasonably certain to occur and elects to pursue a Permit, and the Service determines the project is eligible to use the GCP, the GCP process will be complete upon the Applicant’s submission of their application package adopting this GCP. This GCP is a conservation plan as required by ESA section 10(a)(2)(A) for issuance of a Permit and submission of a complete package satisfies the Applicant’s obligation to provide such a plan. This GCP further streamlines the process by providing a single approved NEPA document, Findings Statement, and Biological Opinion for all actions covered under this GCP for the proposed 10-year duration of the plan (see section 1.4). The GCP Permit structure provides the Service with the opportunity to review and verify that each *individual project plan* (IPP) meets Permit issuance criteria and is within the NEPA evaluation conducted.

This GCP is available for adoption and use by eligible Applicants that demonstrate a commitment to implement the measures spelled out in this conservation plan. Once the GCP is finalized, the issuance of Permits is expected to become formulaic, eliminating the need for lengthy review of each application.

The decision to pursue an application for incidental take authorization is voluntary. However, once the Applicant makes this decision, it triggers specific requirements. A section 10(a)(1)(B) Permit may be issued upon a determination by the Service that all requirements for permit issuance have been met. To utilize this GCP and receive a Permit through this streamlined process, an Applicant must:

1. follow Permit issuance criteria found at 50 CFR 13 and 17;¹⁶⁰
2. document that their project meets eligible project types (see section 3.4);
3. implement CMs, as applicable, described in this GCP and describe additional measures to further reduce the impact of the taking of a Covered Species (see section 4.4);
4. implement mitigation and monitoring, and provide funding assurances described in this document (see sections 4.5, 4.6, 4.7 and 5.0);

¹⁶⁰ Permit issuance criteria are the following: 1) the taking will be incidental; 2) the Applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such takings; 3) the Applicant will ensure that adequate funding for the HCP and procedures to deal with unforeseen circumstances will be provided; 4) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; 5) the Applicant has met the measures, if any, required by the Director of the Service as being necessary or appropriate for the purposes of the plan; and 6) the Director of the Service has received such other assurances, as he or she may require, that the plan will be implemented.

5. meet the minimization and mitigation requirements as calculated by the methods described in this document (see section 4.6); and
6. comply with the terms and conditions in the resulting Permit.

This GCP analyzes and establishes minimization and mitigation requirements for Covered Activities whose impacts are permanent (e.g., removal of habitat) or temporary but nonrecurring (e.g., construction noise, vibrations). There are certain effects that are beyond the scope of this GCP; and therefore, are not analyzed by or eligible for this GCP (see section 4.5.2). Examples of projects precluded from participation through the GCP process include those that result in effects to:

- Other federally listed wildlife or adverse effects to federally listed plants
- Areas outside of the GCP Plan Area
- Covered Species hibernacula (at any time of year)
- Suitable documented roosts used by the Covered Species, and trees within 150 feet¹⁶¹ of those documented roosts (any time of year)
- Documented Covered Species summer *travel/commuting habitat* (between summer roosting/foraging habitat) unless there are alternative travel corridors available (at any time of year)
- More than 25 total acres of nonlinear suitable summer habitat if the habitat has not been surveyed using current Service protocols¹⁶²
- More than 200 acres of occupied habitat for the Covered Species for nonlinear projects
- IBATs, NLEBs or TCBs:
 - while in hibernation
 - during the fall swarming or spring staging periods around known or assumed occupied hibernacula
 - during the maternity period between April 1 and August 15 within documented or assumed occupied suitable habitat
- Known or assumed occupied habitat¹⁶³ for projects that raise any road/rail profile above the tree canopy within 1,000 feet of suitable habitat
- Covered Species from projects that only result in take from noise/vibration (i.e., noise/vibration that is not associated with tree removal)
- Covered Species from projects that result in ongoing or reoccurring take associated with post-construction operations¹⁶⁴

¹⁶¹ Service 2016

¹⁶² See: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

¹⁶³ Projects that raise the road/rail profile above the tree canopy within 1,000 feet of suitable habitat within known or assumed occupied habitat should use the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and Federal Transit Authority (FTA) Programmatic Consultation for Transportation Projects determination key in the Service's Information, Planning and Consultation (IPaC) program found here: <https://www.fws.gov/program/endangered-species/bat-consultation-conservation-strategy>.

¹⁶⁴ The Service defines postconstruction operation as the phase that occurs after a project has been fully constructed and is considered fully functioning. An example of ongoing/reoccurring take associated with operations is wind energy projects, which are not covered by this GCP. Furthermore, for the purposes of this GCP, the Service considers maintenance activities, which are covered in certain respects in this GCP, to be different from postconstruction operations.

Projects whose effects are beyond the scope of the GCP, as listed above, can apply for a separate ITP through ESA section 10(a)(1)(B).

3.3 Non-Covered Activities/Examples of Ineligible Project Types

Some project types, though they may include actions described in this plan as Covered Activities, are not eligible to adopt this GCP for various reasons such as the potential for unanalyzed project effects or complexities requiring additional NEPA analysis. Ultimately, the Service will determine if a project is eligible for participation in this GCP.

Ineligible project types include, but are not limited to:

- Dam-related projects
- New electric transmission line construction
- Pump storage projects
- Nuclear energy facilities
- Coal mining/abandoned mine land reclamation
- Coal or gas power plants
- Wind energy projects
- Concentrating solar power projects¹⁶⁵
- Communication towers
- New mines/quarries and associated facilities
- Oil and natural gas projects (e.g., wells, well pads, pipelines, high pressure gas mains conveying renewable natural gas, associated access roads, associated waterlines)
- Injection wells
- Landfills
- New road construction (except access roads for other projects covered by the GCP or private internal roads such as those associated with residential subdivisions)
- Emergency situations¹⁶⁶ such as spills and spill responses
- Forestry activities (e.g., prescribed fire, timber harvests, early successional habitat management)
- Aerial application or other broad-scale application of pesticides
- Airplane and helicopter surveys

Project types that are ineligible for this GCP can apply for a separate ITP through ESA section 10(a)(1)(B).

¹⁶⁵ Concentrating solar power systems generate solar power by using mirrors or lenses to concentrate a large area of sunlight onto a receiver.

¹⁶⁶ Emergency situations under 50 CFR 402.05 would require emergency consultation procedures if there is a federal nexus associated with the project.

3.3.1 Options for Projects Not Eligible to Participate

Not all projects are eligible under this GCP. Some examples of how a Project Proponent may be able to use all or parts of this GCP to achieve ESA compliance, as applicable, are provided below:

- 1) Project Proponents can use components of this GCP to develop a separate HCP and apply for an ITP for both covered and/or non-Covered Species, or
- 2) Project Proponents and/or Federal agencies (see appendix F) can use an existing incidental take statement (such as a programmatic Biological Opinion) for the non-Covered Species and can use the GCP in its entirety for the Covered Species, or
- 3) Project Proponents can use the GCP in its entirety if the project has the Covered Species, and can develop a separate HCP and apply for and obtain an ITP for the non-Covered Species.

Project Proponents are encouraged to coordinate with their local field office (appendix A) to determine how to meet conservation goals and ESA compliance requirements for projects with take of non-Covered Species listed or proposed under the ESA.

3.4 Covered Activities/Examples of Eligible Project Types

Project Proponents should refer to appendix B and discuss with the Service, as necessary, to determine if their project is eligible to adopt this GCP as part of an application for a Permit. All Covered Activities must be constructed, maintained, and operated in accordance with all relevant Federal, State, and local regulations.

This GCP provides for several different types of projects. Because the resulting effects of some projects are similar, some project types are grouped into general categories for the purposes of this plan. The following section provides a general description of categories and examples of Covered Activities that may be eligible to adopt this GCP in support of an application for a Permit. This list is not intended to be exhaustive; however, eligible activities under this GCP are only those for which the impacts have been analyzed and addressed in this Plan. This list provides current information from local field office experience on the most frequently encountered project types anticipated to seek coverage through the GCP.

Not every project in these categories will result in take of the Covered Species. Individual project details such as location, and time of year when certain activities are expected to take place, must be provided to determine if take of the Covered Species is reasonably certain to occur. Projects must meet the described eligibility requirements. Additionally, resulting project effects must be among those described, analyzed, and addressed in the Biological Opinion and the NEPA analysis that describes the effects of the Federal action of approving the GCP and issuing subsequent Permits.

Permits issued under this GCP only provide incidental take coverage for the IBAT, NLEB and TCB (Covered Species). If, during the processing of an application submitted under this GCP, the Service determines that a project is reasonably certain to result in take of any noncovered federally listed wildlife species or has adverse effects to federally listed plants or designated

critical habitat, the Service will notify the project proponent. The Service cannot issue an incidental take permit under this GCP if noncovered federally listed species would be taken or jeopardized, or if any critical habitat would be adversely modified. To address such a situation, the Project Proponent may modify the project to avoid these effects, or they could develop their own HCP with an expanded covered species section using all or parts of the GCP to address bats (see section 3.3.1 above and contact your local field office) plus information on the additional covered species, or obtain ESA coverage for the noncovered species through another mechanism.

The Service recommends that Project Proponents that choose to develop a separate permitted mechanism to address multiple species (section 3.3.1) should consider incorporating the measures contained within this GCP for the covered bat species to help ensure consistent species recovery-focused conservation outcomes, gain the benefits of the existing regional conservation strategy and mitigation framework, and dedicate time and resources to develop CMs for the other federally listed species.

The following general project types are eligible when entirely within the GCP Plan Area:

- **Residential/Commercial/Other Development.** This category includes new construction, modifications, and postconstruction operations and maintenance activities. This includes activities associated with:
 - Single- or multi-family residential construction or subdivisions;
 - Commercial facilities;
 - Community facilities (e.g., schools, libraries, and churches);
 - Public works projects (e.g., wastewater treatment plants); and
 - Recreational trails and facilities (e.g., campgrounds, fairgrounds, and playgrounds).
- **Transportation.**¹⁶⁷ This includes activities associated with:
 - Postconstruction operations and maintenance or expansion of existing roadways/railways where there is no Federal funding or oversight by the FHWA, FTA, or FRA;
 - Postconstruction operations and maintenance, replacement or removal of associated structures, bridges, or culverts where there is no Federal funding or oversight such as that of the FHWA, FTA, or FRA access road construction, postconstruction operations and maintenance, and use in conjunction with other project types covered by this GCP; and
 - Construction, postconstruction operations and maintenance of internal private roads such as those associated with residential subdivisions.
- **Utilities.** This includes activities associated with:
 - New construction, modifications, expansion, postconstruction operations and maintenance activities associated with:

¹⁶⁷ An existing rangewide consultation is available for FHWA, FRA, and FTA projects (see <http://www.fws.gov/sites/default/files/documents/programmatic-biological-opinion-for-transportation-projects-2018-02-05.pdf>). Applicants with other Federal agency (i.e., U.S. Army corps of Engineers [USACE] permitting) involvement may use the GCP to demonstrate compliance with the ESA. Please see GCP appendix F for the process for project sponsors with a federal nexus.

- Water lines;
- Sewer lines;
- Underground or overhead cable/internet; and
- Underground or overhead electrical distribution lines.¹⁶⁸
- Electrical substations; and
- Post-construction operations and maintenance or modification of existing electrical transmission lines¹⁶⁹ within existing footprints.

Because individual projects may include activities within several categories, potential Applicants should describe and discuss all aspects of their proposed projects with the local field office to ensure appropriate coverage.

3.4.1 Activities Common to Multiple Project Types

As discussed previously, certain effects may be caused by different project components. In this section, the Service provides a summary of project components that may result in similar or common effects to the Covered Species or their habitats. Effects to the Covered Species are anticipated to be similar in nature given their similar life history and habitat needs.

Activities that may be common to multiple project types, but which are expected to result in the same effects to the Covered Species include:

- Surveys and site preparation;
- Project staging areas;
- Vegetation clearing;
- Land preparation (e.g., grading, trenching, excavation);
- Stormwater and sedimentation control measures;
- Project lighting;
- Structure/infrastructure construction or replacement;
- Access roads;
- Wetland fill or waterbody crossing;
- Wetland or waterbody restoration or mitigation;

¹⁶⁸ New transmission lines are not included (section 3.3). Transmission lines carry electric energy from one point to another in an electric power system. They can carry alternating current or direct current or a system can be a combination of both. Also, electric current can be carried by either overhead or underground lines. The main characteristics that distinguish transmission lines from distribution lines are that they are operated at relatively high voltages, they transmit large quantities of power and they transmit the power over large distances. Distribution lines are low voltage lines that carry electricity from the substations to the end users for residential and commercial use. <https://www.osha.gov/etools/electric-power/illustrated-glossary/transmission-lines> (Accessed 7/21/2022).

¹⁶⁹ New transmission lines are not included (section 3.3). Transmission lines carry electric energy from one point to another in an electric power system. They can carry alternating current or direct current or a system can be a combination of both. Also, electric current can be carried by either overhead or underground lines. The main characteristics that distinguish transmission lines from distribution lines are that they are operated at relatively high voltages, they transmit large quantities of power and they transmit the power over large distances. Distribution lines are low voltage lines that carry electricity from the substations to the end users for residential and commercial use. <https://www.osha.gov/etools/electric-power/illustrated-glossary/transmission-lines> (Accessed 7/21/2022).

- Site restoration/planting; and
- Postconstruction operations and maintenance activities.

Surveys and Site Preparation

Site preparation activities include, but are not limited to geotechnical site investigations, surveys, and the marking of trees for removal or retention. Subsurface sampling and testing to determine soil characteristics are often an important step in the engineering design process. Subsurface sampling is typically accomplished by drilling test holes up to 300 feet deep or digging soil pits up to 8 feet deep. Drilling rigs can be mounted or transported by a variety of transportation vehicles including trucks, tractors, skids, and barges. When drilling is done off of roadways, impacts can be minimized through the selection of an appropriate sized and mounted drill rig, and limited vegetation removal. Subsurface sampling for hazardous materials may also be necessary. Durations will vary for these activities depending on number of bore holes and substrate composition. Typically, one to several bore holes can be drilled in a day and most sampling is accomplished within a week.

Geotechnical investigations may also use ground-penetrating radar and seismic refraction surveys. This involves generating seismic waves and measuring their reflectance through differing geologic features. These seismic waves may be initiated by detonating explosives or through a process known as “land vibroseis.” Seismic companies often design sound generation points to avoid sensitive habitats and hazards that are identified and still collect meaningful data. Thumper trucks, heavy equipment, subterranean explosives, and blasting may be used during seismic refraction surveys.

Surveys may include property boundary identification or may be needed to identify biological or cultural resources, specific site features or hazards. Surveys may be conducted on foot or with the use of vehicles or drones. Airplane and helicopter surveys are not Covered Activities. Cultural resource surveys may involve varying levels of ground disturbance including test digs with minor vegetation removal or blasting (see Land Preparation below). Work areas are generally demarcated (e.g., paint, flagging, fencing, stakes). Trees slated for removal versus remaining are demarcated as well.

Project Staging Areas

Some projects require the construction and use of staging areas or “contractor yards.” Staging area development can include cutting and/or removing vegetation, grading soils, graveling the workspace, and installing silt and/or safety fencing. Trailers at staging areas may require the use of portable generators, temporary drainage diversions, portable lighting equipment, and security fencing.

Vegetation Clearing

This may include removal of trees (including tree topping), limbing and trimming of trees, shrubs, or herbaceous vegetation. Methods may include hand tools (e.g., chainsaw) or heavy equipment (e.g., excavators and bulldozers).

Land Preparation

Vegetation or construction debris cleared from designated areas may be disposed of on or offsite in a manner compliant with local, State, and Federal rules and regulations. Chipping and mulching is the preferred means of onsite disposal of debris piles (see Summer CM 8 in GCP section 4.4.1.3).

Some projects may require the use of blasting and/or drilling to remove rock. The scale of blasting operations can vary from breaking up a single boulder or trimming an unstable overhang, to large-scale removal operations. The size and spacing of charges are largely dependent on the work objectives and the geologic structure of the rock. There are two general types of blasting: production and controlled. Production blasting uses widely spaced, large explosive charges that are designed to fragment a large amount of burden (the rock that lies between the existing slope face and blasthole). Controlled blasting uses more tightly spaced and smaller explosive charges to remove smaller amounts of burden. This technique can remove material along the final slope face, or it can be used prior to production blasting to create an artificial fracture along the final cut slope.

Holes are drilled into the rock to set explosives. Drilling may be done with hand equipment by workers suspended on ropes to crane-supported drill platforms. Blasting mats or anchored wire mesh may be required to contain flying rock, especially when blasting occurs adjacent to sensitive areas such as aquatic systems. Temporary earthen or rock berms are also commonly used to contain rolling debris or minimize movement of blasted material. These structures are typically placed at the toe of landslides and are located to avoid impacts to stream or wetlands and designed to keep debris out of sensitive areas.

Land preparation may also involve the demolition and removal of structures (e.g., barns) or other obstacles.

In order to perform some construction operations, surface and groundwater may need to be diverted from the work site. This can include:

1. Constructing, installing, and maintaining all necessary temporary water containment facilities, channels, and diversions
2. Furnishing, installing, and operating all necessary pumps, piping, and other facilities and equipment
3. Removing all such temporary works and equipment after their intended function is no longer required

Cofferdams are often installed to create an isolated work area that can be dewatered for various projects (e.g., bridge maintenance). Cofferdams may consist of large casings (hollow cylinders) or sheet piles. The majority of cofferdam installations are completed with vibratory hammers. In some cases, other construction methods are used, such as stacked Jersey barriers with an impermeable liner or sandbag/impermeable liner barriers. These are accomplished typically by using a crane or excavator (Jersey barrier) or placed by hand (sandbags).

In general, sites are graded using earth-moving machinery to achieve desired contours. During grading, topsoil may be stripped and stockpiled separately from the subsoil. The segregated topsoil is typically returned to any temporary work area locations or used in other locations at the

site. For example, for pipelines, topsoil would be restored immediately following installation of the pipe and backfill of the trench to reduce erosion and preserve native seed stock.

Following grading, areas may be stabilized by vegetating (e.g., seeding, sodding). Fertilizer, inoculant, lime, and other soil amendments may be applied; and anchoring mesh, mulch, and/or netting may be used in designated areas. Irrigation is sometimes used during this process. Water may also be needed for other preconstruction and construction operations, such as dust abatement, earthen-fill, and concrete mixing.

Additional materials may be needed to meet desired contours. This material is typically obtained from designated borrow areas.

Soils may need to be compacted in certain areas. Tamping, rolling, and vibration are types of techniques employed to compact soil layers.

Excavation work may be needed for structure foundation/basements or as part of trenching for utility/pipeline installation. Heavy equipment is used to remove, and side cast or dispose of excess soil. The type of machinery employed for excavation is based on the type of materials being excavated, the distance that material needs to be transported, soil site ability to carry load, and site accessibility. Excavation can occur in upland or wetland areas.

Stormwater and Sedimentation Control Measures

There may be Federal, State, or local requirements regarding the control of erosion and water pollution at a site. These practices can include silt fencing, hay bales, mulching, or the construction of runoff and sedimentation control structures (e.g., berms, drainage ditches, culverts, and/or stormwater management basins).

Permanent stormwater management systems (e.g., drainage swales, storm drainpipes and outfalls, detention and retention basins) are frequently required. Geotextiles (sometimes with riprap overlay) may be used for the purposes of slope protection, subsurface drains, and the stabilization of soils. Flexible membrane or geosynthetic clay liners may be used in liquid containment systems to control seepage.

Project Lighting

Lighting during construction activities is typically temporary and only needed until the construction activity concludes. Lighting may be required to ensure safe working conditions and/or allow for safe travel by vehicle operators. Lights are often mounted on mobile poles, towers or vehicles. New facilities (e.g., roads, sidewalks, residential or commercial development) often include permanent lighting. The light color, mounting methods, position, and styles vary significantly. Most land disturbance is small and associated with installation of individual poles.

Structure/Infrastructure Construction or Replacement

Structure foundations are typically laid using a combination of cementitious materials, aggregates, and metallic reinforcements. Pressure relief wells may be required in the foundations of some structures. Pile driving may be used in some projects. Piles are typically made from

steel, wood, precast concrete, or concrete poured into shells that are driven to the required bearing and left in place. Gravity hammers, steam or air hammers, or diesel hammers are all types of equipment typically used to drive piles.

Construction of the associated infrastructure (e.g., parking and curb structures) is also carried out during the main construction phase. Septic systems and utilities (e.g., power lines, subterranean wells, and in-ground pipes and cable) may also be installed. Riprap or other materials may be used to stabilize slopes.

Access Roads

If there are no existing access roads, temporary or permanent access roads are constructed. Access roads are generally nonpublic or otherwise nontraditional roads that are utilized and maintained for access to existing or proposed facilities. Access roads may be utilized under a lease/agreement with other landowners. They are typically 10- to 25-foot wide, and may be dirt, gravel, or paved. Access roads may need to cross wetlands or water bodies (see Wetland Fill or Water Body Crossing below). If a road is no longer needed, surface material is removed, and native vegetation is typically restored by seeding. Temporary roads may be restored with native vegetation following construction and do not require any operation and maintenance activities. Post-construction operation and maintenance of permanent access roads includes adding additional surface material (i.e., gravel, dirt) to the road and maintaining bar ditches. To minimize dust, water may be applied to roads. Additional details about road construction and maintenance can be found in GCP section 3.4.2.

Wetland Fill or Water Body Crossing

Whenever possible, project components should be located away from wetlands and water bodies to avoid filling or altering these features. However, avoidance is not always feasible and wetlands or other water bodies may be temporarily or permanently filled. Streams may be filled, piped, or relocated. Impacts to water bodies that are under the jurisdiction of the USACE or State permitting agency require separate permits and often include mitigation projects.

Culverts and Bridges

Avoiding impacts to wetlands and water bodies can be especially challenging with linear projects (e.g., roads, utilities). In some cases, these water features can be crossed using culverts or bridges. Culverts include small concrete and box girders that do not qualify as bridges due to their size. Typically bridges less than 20-foot wide are referred to as culverts. Conventional culverts include, but are not limited to, concrete, corrugated metal, timber, and PVC piping. A culvert may be installed or replaced as part of many Covered Activities in this GCP. Proper culvert sizing is determined by consulting hydraulics manuals and regional-specific Service fish passage guidance¹⁷⁰. Culvert replacements typically require less than one month to complete. Typical culvert replacements involve removing vegetation at the outlet and inlet area, removing existing pavement and roadbed to extract the existing culvert, placing the new culvert, backfilling, and replacing the pavement, installing armoring and headwalls, revegetating if necessary, and if flow is present, dewatering the work area and establishing a flow bypass prior

¹⁷⁰ Fish Passage Technical and Planning Assistance | U.S. Fish & Wildlife Service

to initiating work. In-water construction typically occurs during low-flow months or during dry periods. Bridges are generally associated with transportation projects and are discussed further below.

Trenchless Crossing

Conventional or directional boring, or horizontal directional drilling (HDD) can be used to help minimize impacts to water bodies (or other features such as roads, railroads). Conventional “road boring” requires excavation of a pit on either side of the feature, the placement of boring equipment in the pit, and boring under the feature. HDD is a trenchless crossing method that is typically carried out in three stages:

1. directional drilling of a small diameter pilot hole;
2. enlarging the pilot hole to a sufficient diameter to accommodate the pipeline; and
3. pulling the prefabricated pipeline into the enlarged bore hole.

Open Cut Crossing

Wetlands or water bodies may also be crossed using open cut methods such as:

- Flume construction method – diversion of streamflow through flume pipes and placement of dams to exclude water flow from trench area;
- Dam-and-pump construction method – diversion of stream flow using pumps and hoses and placement of dams to exclude water flow from the trench area; and
- Cofferdam method – installation of a temporary diversion structure from the bank of the waterbody to the approximate midpoint of the waterbody crossing to isolate that section of the stream from the remainder of the waterbody, creating discrete dry sections around which water flows unimpeded.

Wetland or Water Body Restoration or Mitigation

When wetlands or water bodies are impacted from temporary project components (e.g., temporary access roads), these water features are restored (fill removed) onsite. Any temporary fill such as access bridges are removed, and the wetland is graded to original contours and reseeded. Completed open-cut stream crossings are stabilized before returning flow to the channel. Original streambed and bank contours are reestablished, and mulch, jute thatching, or bonded fiber blankets are installed on the stream banks. Seeding of disturbed stream approaches is completed immediately after final grading. Where necessary, slope breakers are installed adjacent to stream banks to minimize the potential for erosion.

Mitigation may be required for temporary and permanent impacts to wetlands and water bodies through State or Federal permitting processes. Mitigation projects may include Permittee responsible wetland restoration, protection, or creation, and may be on or offsite or may include use of wetland banks or in-lieu fee (ILF) funds. Mitigation projects may also be designed to benefit Covered Species.

Site Restoration/Planting

Restoration and cleanup activities commence as soon as practicable following completion of backfilling and regrading. These activities include seeding, fertilizer and mulching to restore ground cover and minimize erosion and cleaning up/removing construction facilities and debris.

Postconstruction Operations and Maintenance Activities

A variety of postconstruction operations and maintenance activities are common to the Covered Activities. These may include human presence (e.g., walking, use of vehicles or equipment), lighting (see Project Lighting above), facility/equipment repair and replacement, and vegetation maintenance.

Repair of geotechnical slides (i.e., landslides known as “slips”) associated with existing infrastructure, construction activities, or weather events (e.g., flooding, storms, rainfall), typically commences as soon as practicable following report of an incident. Slip repair may include tree trimming or removal (to gain access to remote sites) and site stabilization (e.g., grading, contouring, filling, and revegetation) activities.

Vegetation maintenance may include mowing, brush cutting, tree trimming or removal, or herbicide application. Herbicides are generally applied to green or growing tissue and prior to seed production but may be applied during fall regrowth periods. Herbicides used for invasive plant species control at mitigation sites are often used in conjunction with mechanical and biological control. These control methods are also used near plantings to reduce competition from surrounding vegetation. The herbicide is typically applied directly to plant roots and foliage by wicking, spraying from a backpack sprayer, injecting, or by applying to cut stumps. Only application of herbicides occurring in accordance with the U.S. Environmental Protection Agency product label requirements are covered by this GCP. Aerial (e.g., aircraft or other broadcast spraying methods) herbicide application is not covered by this GCP.

3.4.2 Activities Common to Transportation Projects

Transportation projects¹⁷¹ eligible to adopt this GCP as part of the application for a Permit include:

- Postconstruction operations and maintenance or expansion of existing roadways/railways where there is no Federal funding or oversight by the FHWA, FTA, or FRA;
- Postconstruction operations and maintenance, replacement or removal of associated structures, bridges, or culverts where there is no Federal funding or oversight by the FHWA, FTA, or FRA;

¹⁷¹ An existing rangewide consultation is available for FHWA, FRA, and FTA projects (see <http://www.fws.gov/sites/default/files/documents/programmatic-biological-opinion-for-transportation-projects-2018-02-05.pdf>). Applicants with other Federal agency (i.e., USACE permitting) involvement may use the GCP to demonstrate compliance with the ESA. Please see GCP appendix F for the process for project sponsors with a federal nexus.

- Access road construction, postconstruction operations and maintenance, and use in conjunction with other project types covered by this GCP (discussed above); and
- Construction, postconstruction operations and maintenance of internal private roads such as those associated with residential subdivisions.

Recreational trails (e.g., bike trails) are not considered transportation projects for the purposes of this GCP and can be included without regard to their distance from existing roads/rails.

General land clearing, construction and restoration methods associated with transportation projects are described above (GCP section 3.4.1).

There are several project components unique to transportation projects discussed below.

Roadway and Associated Structure Construction

The scope and scale of projects that include Covered Activities can range from small projects such as reconstructing existing interchanges, minor realignments, and new sidewalks to those with large footprints such as new interchanges, new general-purpose lanes, realignments, new road corridors, and bypass routes. Public transportation projects include, but are not limited to, parking lots, transit centers, parking garages, and vehicle maintenance and/or storage facilities. Construction of private internal roads such as residential subdivisions is also included in the GCP. Unique features may include paving, guardrails, and noise walls.

Roadway Maintenance

Roads require periodic maintenance to correct washouts or other deterioration. Maintenance can broadly be described as drainage system repair and maintenance, pavement preservation, facilities preservation, slide abatement, and bank stabilization and flood damage repair.

Drainage System Repair and Maintenance

Drainage System Repair and Maintenance activities include all work necessary to maintain roadside ditches and channels, cross culverts and pipes, catch basins and inlets, and detention/retention basins. Where necessary, culverts and ditches may be installed to facilitate drainage away from the road. Drainage facilities are cleaned periodically to permit free flow and to avoid erosion and damage to roads and other infrastructure.

Drainage system repair and maintenance work may occur throughout the year depending on the weather and the specific project; however, most work is scheduled to occur during the summer, during low-water flow or dry conditions.

Pavement Preservation

Pavement preservation consists of patching, repairing, and replacing roadway surfaces and pavement. If the existing pavement is in good condition, it may be covered over with a new layer of asphalt. Repair of badly deteriorated pavement could require grinding of existing pavement or replacement of the road foundation material prior to repaving.

Most paving occurs during May through September. Activities may occur seven days a week and any time of day, depending on traffic volumes. Paving may result in a slightly higher road surface; therefore, manholes, inlets, and guardrails, etc. may need to be raised or replaced. Culverts may also require extension, repair, or installation as part of pavement preservation projects. For more information, see GCP section 3.4.1.

Installation of roadside signs, guideposts, and raised pavement markers; guardrail improvements, fence installation and repair; and paint striping may also be included in a paving project. For most projects, installation of road signs, guideposts, and fencing involves minor amounts of excavation and vegetation removal. Trenching may also be required to run utilities from existing sources to lighted signs.

Facilities Preservation

Facilities preservation is the preservation, maintenance, and expansion of weigh stations, rest areas, and road maintenance facilities. Activities at these facilities may include expansion of buildings and parking areas; septic system expansion or alteration; paving, painting, striping, and signage; vegetation alteration and removal; and erosion and sediment control practices. Improvements to existing roadway facilities occur year-round depending on the weather and rarely involve expanding the building footprint.

Slide Abatement, Bank Stabilization, and Flood Damage Repair

Sites may need to be restored after rockslides, flood damage, or other types of damage. Activities may include removal of debris, tree removal, recontouring of the bank, and stabilization. Streambank stabilization practices to protect banks of streams or constructed channels, and shorelines of lakes, reservoirs, or estuaries to reduce erosion and may include placement of rock or wood features and vegetation planting.

Bridge Construction and Removal

Bridge construction may be a component of a larger roadway project or a stand-alone project. There are multiple types of bridges including, but not limited to, concrete slab, concrete arch, concrete box girder, concrete T beam, steel beam, pretensioned concrete beam, posttensioned concrete beam, steel truss and timber trestle. Bridges can span wetlands, streams, and other water bodies as well as roadways and other transportation infrastructure. Some bridges span the stream systems they are crossing, while others have piers in the channel. Most new bridges are designed to span as much of the system as possible, and to provide the least amount of constriction that is practicable on the system.

Bridge replacements tend to be long-term projects requiring one or more years to complete. Installation of new bridges may require construction of a detour bridge. Occasionally, half of the new bridge is constructed adjacent to the old bridge and acts as the detour bridge while the original is removed and replaced. Most bridge replacements use the same alignment or are constructed near the old alignment. Temporary bridges may be built as construction platforms. Often, in-water work is generally timed to minimize impacts to sensitive aquatic species. Some sedimentation of the waterway may occur during pile driving and removal. Bridge removal can also result in sediment and small concrete chunks entering the water.

Bridge construction and removal projects include:

- excavation for new bridge abutments;
- construction of bridge columns/piers/abutments;
- pile installation and removal;
- bridge removal/replacement; and
- riprap placement.

Excavation, construction and use of riprap are described in Land Preparation and Structure/Infrastructure Construction or Replacement (GCP section 3.4.1).

Pile Installation and Removal

Piles are installed using several different methods. Pile driving involves the use of an impact pile driving hammer or vibratory hammer. To remove piles, the hammer is engaged and slowly lifted with the aid of a crane, extracting the piling from the sediment.

Bridge Removal/Replacement

Bridges can be removed using several methods, including:

1. dismantled over water from adjacent bridge deck or approach;
2. dismantled over the water and lowered onto a barge and barged out to a dismantling site;
3. dismantled over water and sections removed by crane; and
4. falsework (temporary structures) can be built under and around the bridge, and the bridge dismantled by sections.

Bridge removal methods are selected based on a number of factors, including the structure of the bridge, the size of the bridge and river, the location within the system, the topography, and the amount of access to the bridge and the banks. Since many older bridges have bridge piers in the system, these also need to be removed. Concrete piers can be removed by demolition using a hoe ram (as long as pieces do not enter the water) or removed by a vibratory hammer; they can be cut off two feet below the ground level, or a temporary cofferdam can be constructed, and the material can be hydraulically removed. The bridge demolition method will be determined by site and project-specific conditions.

Isolation of the work area and stream is often required on bridge replacement projects and may require the use of cofferdams, sandbag berms, temporary culverts or flumes depending on site conditions. Bridge replacement projects often require column construction within stream channels, which typically involves the isolation of the column location through the use of a large diameter steel sleeve that is driven into the stream substrate. All work, including excavation for the footing, placement of forms, and pouring of the concrete, would then be completed within the sleeve at each column location. This technique helps minimize construction impacts by isolating the work from the stream.

Bridge replacements may require more than one construction season, due to multiple factors such as project complexity or if the in-water work may be limited to certain periods to minimize

impacts to sensitive aquatic species. Often, work on the out-of-water portions or behind cofferdams will occur year-round.

Bridge Repair, Retrofit, and Maintenance

Bridge repair, retrofit, and maintenance activities are implemented to prolong the use and function of bridges, ensure motorist safety, and protect the environment. Whether a bridge is repaired, rehabilitated, or replaced depends on the age of a bridge and damage that may occur to a bridge (e.g., from a storm event, earthquake, or vehicle or boat collision). The length of stream and/or wetland potentially affected by bridge repair and maintenance depends upon the scale of the bridge project and the required actions.

Seismic retrofit activities are not temperature and/or time sensitive and may occur anytime throughout the year, while joint replacement and bridge deck replacement are temperature-dependent activities, limited to the warmer months. Bridge scour repair work tends to occur during low-water times of year, and bridge painting may only occur late spring through fall when temperatures are high enough to allow the paint to dry properly. Bridge maintenance projects can be long-term, lasting more than one construction season.

Bridge repair, retrofit and maintenance projects include:

- scour repair;
- seismic retrofit; and
- deck repair and replacement; and maintenance.

Scour Repair

Scour at bridge piers can become a major safety issue for some bridges. Repair of scoured bridge piers can include construction of temporary cofferdams around affected piers to isolate work areas; concrete or gabion repair to footing, columns or abutments; placement of riprap at scour locations; placement of concrete mattresses along bridge piers; or installation of concrete armor tetrapods (four-legged, interlocking concrete structures). A-JACKS are also used for direct bridge scour repair, especially where there is a low bridge with a limited hydraulic opening and when hauling rock is cost prohibitive.

Concrete mattresses consist of flat, continuous blocks of cured concrete (closed cell) or contain voids in which stream gravel can be placed (open cell). The concrete blocks are linked together with steel or synthetic cable. To install a concrete mattress, the streambed must be excavated at the leading and trailing edges to avoid undermining of the device. The mattress is placed on geotextile or filter fabric with an excavator, and earth anchors are often used to secure it. The A-JACKS system is composed of cured concrete pieces resembling “jacks” that are assembled into a continuous, interlocking, yet flexible matrix. This matrix provides protection against high-velocity flow. The use of A-JACKS is an alternative to riprap placement and may avoid the need for streambed excavation. A-JACKS are typically secured together with steel cable. Placement typically requires an excavator which is operated from the stream bank whenever possible. Concrete armor tetrapods are similar in function but differ in shape.

Construction of temporary access fills may be required to provide a working platform for machinery. Working platforms are usually constructed of light, loose riprap matched to the material necessary for the repair. The platform material is then repositioned as the machinery backs away from the work site. Installation methods vary on a site-specific basis. In navigable waters, access from a barge may be required. Whenever possible, equipment, such as excavators, will operate from stream banks, bridges, or temporary work platforms to avoid in-channel operation. If in-channel equipment operation is necessary, aquatic spider excavators are often used, especially if access to the site is difficult, as they are small, relatively light, and have rubber tires to minimize substrate disturbance. Aquatic spiders are typically used in small streams, because the size of rock they can pick up is limited. Sometimes materials can be placed directly on the streambed with little to no excavation; in other instances, excavation is necessary to key in materials. Often, stream flow and anticipated erosion will determine specific aspects of design such as anchoring.

Seismic Retrofit

Seismic retrofits can involve any of the following depending on the structure:

1. removing and replacing bolts and or rivets with high-strength connections;
2. installation of concrete catcher blocks at piers (not typically precast, but constructed using steel-reinforced forms filled with concrete poured on site);
3. installation of pier sleeves (collars) to the depth of the spread footing; and
4. installation of longitudinal restrainers, transverse girder restrainers, and/or transverse deck restrainers which are typically installed under the bridge as looped steel cables or bolts. No fill or pile driving is required for their installation. Longitudinal restrainers prevent abutting spans from being pulled apart during an earthquake. Transverse restrainers pin abutting spans together, preventing them from being sheared apart vertically or laterally during an earthquake.

Deck Repair and Replacement

Removal may involve traditional mechanical methods such as jackhammers, concrete saws, and cold-milling (grinding), or hydro-demolition (hydro-milling). Hydro-demolition uses a high-pressure water jet stream to remove unsound concrete. Concrete debris is contained and then removed with vacuum equipment. Deck repair can involve either partial-depth or full-depth patching. Partial-depth replacement repairs surficial damage to the travel surface by cleaning and filling voids with a suitable material (e.g., concrete, asphalt). In general, when full-depth patching occurs, a temporary form is held against the underside of the deck and material fills the void from above. Longer bridges have finger joints that must be repaired and replaced as needed.

Maintenance

Bridge maintenance activities may include washing, painting, debris removal from bridge piers, guardrail repairs, lighting and signage repairs, and structural rehabilitation. Such activities generally include work such as repairing damage or deterioration in various bridge components; cleaning out drains; repairing expansion joints; cleaning and repairing structural steel; sealing concrete surfaces; concrete patching; and sanding and painting. Bridge painting involves

washing the bridge with highly pressurized water, abrasive sand blasting to remove all corrosion, and then applying a minimum number of coats of paint. Steel bridges also require rivet replacement and crack stabilization. These activities are often completed during bridge painting operations. Debris removal can be accomplished in a variety of ways depending on the type and quantity of debris, and the size and configuration of the bridge. Hand removal is possible in some instances, although the use of mechanical aids, such as chainsaws, winches, and heavy equipment, are often necessary. Structural rehabilitation may include replacement or repair of degraded steel superstructure, repair to bridge approaches, or repair or replacement of bridge rail. Work is typically conducted in a stepwise fashion, moving from one section of the structure to the next, rather than on the entire structure at once.

3.4.3 Activities Common to Utility Projects

Utilities, as defined in this GCP, include:

- new construction, modifications, expansion, postconstruction operations and maintenance activities associated with:
 - water lines,
 - sewer lines,
 - Underground or overhead cable/internet,
 - Underground or overhead electrical distribution lines¹⁷²;
- electrical substations; and
- postconstruction operations and maintenance or modification of existing electrical transmission lines¹⁷³ within existing footprints.

Other project types included as Covered Activities (e.g., residential development) also may involve utilities. Most utility projects are linear in nature. These projects are typically narrow and placed in road rights-of-way (ROWs). While electrical substations are not linear, they generally occupy small parcels of land (less than 10 acres).

¹⁷² New transmission lines are not included (section 3.3). Transmission lines carry electric energy from one point to another in an electric power system. They can carry alternating current or direct current or a system can be a combination of both. Also, electric current can be carried by either overhead or underground lines. The main characteristics that distinguish transmission lines from distribution lines are that they are operated at relatively high voltages, they transmit large quantities of power and they transmit the power over large distances. Distribution lines are low voltage lines that carry electricity from the substations to the end users for residential and commercial use. <https://www.osha.gov/etools/electric-power/illustrated-glossary/transmission-lines> (Accessed 7/21/2022)

¹⁷³ New transmission lines are not included (section 3.3). Transmission lines carry electric energy from one point to another in an electric power system. They can carry alternating current or direct current or a system can be a combination of both. Also, electric current can be carried by either overhead or underground lines. The main characteristics that distinguish transmission lines from distribution lines are that they are operated at relatively high voltages, they transmit large quantities of power and they transmit the power over large distances. Distribution lines are low voltage lines that carry electricity from the substations to the end users for residential and commercial use. <https://www.osha.gov/etools/electric-power/illustrated-glossary/transmission-lines> (Accessed 7/21/2022).

Construction/Installation

Land clearing, construction, and restoration methods associated with utility projects are described above (GCP section 3.4.1). Utility projects frequently involve trenching and burial of a variety of pipes and lines. Most electrical distribution projects also involve the overhead lines and poles, similar in many ways to construction of lighting projects. Most disturbance is small for installation of poles and stringing of lines is done from vehicles in cleared ROWs or on roads. Utility projects may require the construction and maintenance of access roads. Substations are typically surrounded by fencing.

Postconstruction and Maintenance

Postconstruction operations and maintenance of utilities may include replacement of poles or other structures, grounding improvements, reconductoring/thermal upgrades, pole inspections and repairs, painting of poles and towers, and replacing/repairing lines. Substations may need maintenance, upgrades, or expansions.

Most individual replacement or repair locations require less than one acre of disturbance. Utility line ROWs are generally kept clear of trees to provide for line maintenance and prevent roots from impacting pipes or branches from hitting lines.

Decommissioning of above-ground electric distribution lines may involve removal of poles and distribution lines. Buried electric lines are typically left in place once disconnected from power sources.

4.0 Conservation Program

The GCP conservation program is based on the biological and ecological needs of the Covered Species and defines the conservation goals the plan is intended to accomplish. This section describes the goals and objectives of this GCP, CMs intended to avoid or minimize the amount of take, mitigation measures to offset unavoidable take, monitoring and *adaptive management* strategies to ensure that the plan's conservation goals are achieved, and procedures to address changed or unforeseen circumstances that may occur over the duration of the plan and the associated Permits.

Because life histories, habitat needs, and threats faced by the IBAT, NLEB and TCB are mostly similar (see chapter 2), this GCP provides a single conservation program with consistent measures intended to benefit all three species.

The conservation program outlined here is based on information and concepts described in several key documents, including rulemakings;¹⁷⁴ the IBAT draft recovery plan;¹⁷⁵ IBAT 5-Year Reviews;¹⁷⁶ the NLEB and TCB Species Status Assessments;^{177,178} and the Regional IBAT Conservation Strategy that steps down rangewide guidance to outline a consistent approach

¹⁷⁴ 80 FR 17974; 81 FR 1900

¹⁷⁵ Service 2007

¹⁷⁶ Service 2009; 2019

¹⁷⁷ Service 2022a

¹⁷⁸ Service 2021a

guiding conservation actions throughout the Service’s 13-State Northeast Region¹⁷⁹. This GCP further defines specific biological goals, objectives, and CMs for projects within the three-State Plan Area.

4.1 Conservation Strategy

Conserving the Covered Species will require maintaining remaining populations representing each species’ ecological, behavioral, and genetic characteristics; providing redundancy and resiliency by protecting remaining populations of each species across its’ current range; and managing threats acting upon the species. Four key conservation needs to improve the status of these species include:

1. managing the effects of WNS by reducing its impacts and conserving the survivors;
2. conserving and managing winter colonies, hibernacula, and surrounding *spring staging/fall swarming habitat*;
3. conserving and managing maternity colonies and their habitat; and
4. conserving migrating Covered Species.¹⁸⁰

All biological goals, objectives, and CMs described in this plan are intended to avoid and/or minimize impacts to bats, and to restore and/or protect populations affected by WNS. Measures to conserve and manage winter roosts (hibernacula) and maternity colonies are expected to aid in managing the effects of WNS. Protection of populations that appear to be more resilient to the effects of the disease (i.e., “the survivors”) is emphasized.

When suitable habitat for a listed species is present and the project may affect listed species, the Service recommends species surveys to either refute the assumption of presence and the need for additional technical assistance, or to enable accurate, fact-specific analyses of effects and adoption of appropriate CMs. In some situations, rather than conduct habitat and/or species surveys, a Project Proponent may choose to assume presence of the species. Assuming presence, however, usually makes the analysis of effects significantly more difficult and time consuming because the specific nature of the species’ presence (e.g., number of individuals and life stages present) is crucial to the analysis and must still be determined using the best available information. Also, assuming presence can lead to the need for conservation/mitigation measures that otherwise would not be needed if surveys were to be conducted and show that the species is either not present or take is not reasonably certain to occur as a result of the proposed action. Therefore, we have incorporated surveys as part of our conservation strategy in areas where current presence/probable absence (P/A) information is lacking. For example, Project Proponents proposing nonlinear projects with greater than 25 acres of tree removal (including trimming, topping, pruning, and/or limbing) must undertake P/A surveys to be considered eligible for this GCP. In addition, we have included the ability of the Applicant to identify, assess, protect, and enhance potential hibernacula and roosts as mitigation measures.

The specific biological goals and objectives of this GCP; therefore, focus on the Covered Species’ remaining conservation needs in NY, PA, and WV.

¹⁷⁹ Service 2018

¹⁸⁰ Service 2018

4.2 Biological Goals of this GCP

The biological goals for this GCP broadly describe the desired future conditions of the Covered Species or their habitat(s). Each goal is supported by one or more objectives that define how those future conditions will be achieved.

Because this conservation plan relies on habitat as a surrogate (see section 4.5 for more details on use of a surrogate) for populations of the Covered Species, the goals of the plan are also described in terms of habitat quantity and quality. The four key biological goals of this plan, in no order of priority, apply to all Covered Species and their respective habitats.

Biological Goal 1 – Hibernacula sites will be identified, protected, restored (as needed), and maintained to ensure that these essential overwinter sheltering habitat sites remain available for the Covered Species in the Plan Area.

Biological Goal 2 – *Spring staging areas* will be protected and enhanced (as needed) to ensure that these essential feeding and sheltering areas remain available for the Covered Species in the Plan Area.

Biological Goal 3 – Maternity colonies and summer habitat will be identified, protected, restored (as needed), and maintained to ensure that essential breeding, feeding, and sheltering areas are available for the Covered Species in the Plan Area.

Biological Goal 4 – Fall swarming areas will be protected and enhanced (as needed) to ensure that these essential breeding, feeding, and sheltering areas remain available for the Covered Species in the Plan Area.

4.3 Objectives

Objectives describe the incremental steps taken to achieve a goal. Objectives describe what will be achieved and contain measurable elements that can be monitored to determine success or failure. This GCP identifies nine specific biological objectives for the Covered Species in the three-State Plan Area.

Objective 1 – Hibernacula will be protected and managed to maintain the amount and quality of suitable overwintering habitat for the Covered Species within the Plan Area. Supports biological goal 1.

Objective 2 – Degraded hibernacula will be restored or enhanced to increase the amount and quality of suitable overwintering habitat for the Covered Species within the Plan Area. Supports biological goal 1.

Objective 3 – Surveys will be conducted to locate currently unknown hibernacula locations; and newly discovered hibernacula within the Plan Area will be restored (as needed) and protected. Supports biological goal 1.

Objective 4 – Spring staging/fall swarming areas will be protected and managed to maintain the amount and quality of these essential feeding, breeding and sheltering areas for the Covered Species within the Plan Area. Supports biological goals 2 and 4.

Objective 5 – Degraded spring staging/fall swarming areas will be restored or enhanced (as needed) to increase the amount and quality of these essential feeding, breeding and sheltering areas within the Plan Area. Supports biological goals 2 and 4.

Objective 6 – Maternity colonies and their summer habitat will be protected and managed to maintain the amount and quality of these essential breeding, feeding, and sheltering areas for the Covered Species within the Plan Area. Supports biological goal 3.

Objective 7 – Surveys will be conducted to locate currently unknown maternity colonies, and their summer habitat and sites within the Plan Area will be restored (as needed) and protected. Supports biological goal 3.

Objective 8 – Degraded summer habitat will be restored or enhanced (as needed) to increase the amount and quality of these essential breeding, feeding, and sheltering areas within the Plan Area. Supports biological goal 3.

Objective 9 – Maternity colonies utilizing artificial roost structures and the surrounding habitat will be protected and managed to maintain the amount and quality of these essential feeding and sheltering areas for the Covered Species within the Plan Area. Supports biological goal 3.

4.4 Avoidance, Minimization, and Mitigation

ESA section 10 requires that conservation plans “minimize and mitigate to the maximum extent practicable” the impacts of take authorized by a Permit, and that issuance of the Permit will not “appreciably reduce the likelihood of the survival and recovery of the species in the wild.” This GCP adopts best practices for conservation of the Covered Species; therefore, certain avoidance measures are required in order to obtain a Permit under this GCP. Including avoidance measures for participation in the GCP results in fewer impacts from project activities, reducing the Applicant’s need to implement other minimization and mitigation measures. In general, conservation plans should include mitigation programs that are based on sound biological rationale and are practicable and commensurate with the impacts of the project on species for which take authorization is requested. If the proposed project is expected to result in permanent habitat loss, then the mitigation strategy must include compensatory mitigation consisting of the permanent preservation of suitable habitat or similar measures. Applicants under this plan must provide mitigation for impacts to the IBAT, NLEB and/or TCB associated with removal of occupied or assumed occupied habitat (including impacts from noise and vibrations).

The conservation program of this GCP is intended to ensure that the impacts of Covered Activities on the IBAT, NLEB and TCB are fully minimized and mitigated. Required CMs (GCP section 4.4.1) and mitigation measures (GCP section 4.5) are provided below.

4.4.1 Conservation Measures that Avoid or Minimize Incidental Take

The CMs described below are designed to achieve plan objectives by further defining measurable elements, specifying end results, and indicating when they will be achieved. The CMs describe specific actions a Permittee will implement to achieve objectives that support conservation plan goals. The CMs are based on the biological and ecological needs of the Covered Species and are intended to be practicable and commensurate with project impacts to the species and their habitats.

Permittees must commit to implement all CMs that pertain to their project. The GCP also includes optional measures that may help further reduce impacts or contribute to our understanding of the biology or ecology of the Covered Species. Each CM and optional measure may support multiple GCP biological objectives.

An Applicant's IPP submitted as part of the GCP application process will identify which of the following CMs apply to the proposed project. Implementation of applicable avoidance and minimization CMs will be required in the terms and conditions of issued Permits. The Applicant is responsible for ensuring that operators, employees, and contractors are made aware of and follow the required CMs associated with this GCP.

4.4.1.1 Conservation Measures that Support All Biological Objectives

The following measures apply to all proposed projects and support all biological objectives of this GCP. In these CMs, tree removal includes whole tree removal, trimming, topping, pruning, and/or limbing.

GENERAL CM 1. All survey efforts must follow the most recent Service WNS decontamination protocols, which can be found at: <https://www.whitenosesyndrome.org/static-page/decontamination-information>

GENERAL MEASURE (OPTIONAL) CM 2. Develop and implement a restoration plan to plant and restore native trees on disturbed sites and temporary construction areas.

GENERAL MEASURE CM 3. Implement best management practices to ensure water quality by minimizing the introduction of sediment into waterways that provide foraging habitat for the Covered Species within the Permit Area.

4.4.1.2 Conservation Measures that Conserve and Manage Winter Colonies, Hibernacula, and Fall Swarming/Spring Staging Areas

The following CMs support GCP objectives 1 and 4.

For projects within 0.5 mile of known or assumed occupied hibernacula, implement HIB CM 1(A or B) and FALL/SPRING CM 1¹⁸¹

¹⁸¹ Areas within a 0.5-mile buffer around known or assumed hibernacula are excluded from the GCP Plan Area and no take of Covered Species will be authorized within those areas.

HIB CM 1A. Modify project activity locations to ensure they are more than 0.5 mile away from known or assumed hibernacula openings or underground features. Note: in some cases, mapping of underground passages may be required to achieve this measure.

OR

HIB CM 1B. Avoid all take from project activities within 0.5-mile of known or assumed occupied hibernacula openings or underground features. In order to avoid take, projects within 0.5 mile shall not cause any stressors that:

- disturb bats (during inactive season: noise, vibration, smoke, increased entry by humans; leading to shorter torpor bouts and more frequent arousals and starvation);
- kill bats (during inactive season: filling hibernacula openings, entrapment, crushing, flooding hibernacula, collapse of hibernacula from vibration, increased entry by humans);
- negatively impact water quality for bats that wake up and drink any water in a hibernaculum (during inactive season); and
- negatively alter, damage or destroy hibernacula (any time of year),
 - directly or unintentionally fill or otherwise alter hibernacula openings, thus altering air flow (via soil erosion, slumps, debris disposal, etc.)
 - create new hibernacula openings that alter air flow,
 - alter water levels,
 - alter humidity,
 - collapse hibernacula from vibration, digging, or other activities.

Activities associated with potential projects that would not cause take of the Covered Species at known or assumed hibernacula may occur within identified 0.5-mile buffers after coordination with the local field office (e.g., bridge/structure bat assessments, surveys, planning and technical studies, property inspections, property sales, painting, non-suitable habitat vegetation removal). Project Proponents shall provide project descriptions to the local field office (e.g., location, timing, duration, methods). The local field office project review will consider activities within 0.5-mile of openings or underground features associated with known or assumed hibernacula and assess impacts to determine if project activities are anticipated to cause any of the stressors listed above.

FALL/SPRING CM 1. Avoid destruction or alteration of suitable spring staging or fall swarming areas from project activities within 0.5-mile of known or assumed occupied hibernacula openings or underground features. In order to avoid take, project activities within 0.5-mile shall not cause any stressors that:

- disturb bats (during spring staging or fall swarming season such as noise, smoke, vibration); and
- kill or harm bats (e.g., cutting trees while bats are in torpor during spring staging or fall swarming season).

Many activities associated with potential projects will not be reasonably certain to cause take of the Covered Species and may; therefore, occur within 0.5-mile buffers after coordination with the local field office (e.g., bridge/structure bat assessments, surveys, planning and technical studies, property inspections, property sales, painting, removal of unsuitable vegetation). Project Proponents shall provide the project description (e.g., location, timing, duration, methods) to the local field office. This information shall highlight all activities within 0.5 mile of known or assumed occupied spring staging or fall swarming areas and include an assessment of impacts that demonstrates the relevant project activities will not cause any of the stressors listed above.

For projects more than 0.5 mile from hibernacula, but within known or assumed occupied spring staging/fall swarming areas (up to 20 miles depending on species and hibernacula population numbers¹⁸²), follow FALL/SPRING CMs 2-8.

FALL/SPRING CM 2. Site project activities to avoid damaging or removing documented roost trees for the Covered Species (unless no longer suitable for roosting) and trees within 150 feet of documented roosts any time of year.

FALL/SPRING CM 3. Reduce project footprints and arrange projects to minimize tree removal or impacts to streams and wetlands within fall swarming/spring staging areas.

FALL/SPRING CM 4. Conduct any tree removal (suitable habitat) within fall swarming/spring staging areas when bats are unlikely to be present.

- If summer presence is known or assumed, conduct tree removal while bats are in hibernation (contact local field office for tree cutting dates).
- If summer presence is unknown and Project Proponent is not assuming summer presence, conduct summer P/A surveys.
- If bats are unlikely to occur in summer per any prior information or summer P/A survey results, avoid tree removal during fall swarming and spring staging time periods.

FALL/SPRING CM 5. Use only pesticides that are approved for use in karst areas (e.g., sinkholes) or within/near aquatic features (e.g., streams, ponds, lakes, wetlands).

FALL/SPRING CM 6. Locate staging areas for equipment, fuel, materials, and personnel at least 100 feet (or greater if local or State rules require more) from wetlands, streams and waterbodies (including drainage ditches), and water supply wells, to reduce the potential for sediment and hazardous spills entering these areas. If sufficient space is not available, coordinate with the local field office to determine if alternate measures (i.e., spill plan) can avoid contamination of foraging habitat and drinking water.

¹⁸² See: <https://www.fws.gov/media/indiana-bat-section-7-and-section-10-guidance-wind-energy-projects>.

Applicants should coordinate with their local field office to determine if their proposed project is located within known occupied spring staging/fall swarming areas.

FALL/SPRING CM 7. Direct temporary lighting away from suitable habitat during the active season.

FALL/SPRING CM 8. When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, the goal is to be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable.

4.4.1.3 Conservation Measures that Conserve and Manage Maternity Colonies and their Habitat

All projects within known or assumed occupied suitable summer habitat follow SUMMER CM 1-15. The following CMs support GCP objectives 6 and 7.

SUMMER CM 1. Site project activities to avoid all damage to or removal of documented IBAT, NLEB or TCB roosts (unless no longer suitable for roosting) and trees within 150 feet of documented roosts any time of year.

SUMMER CM 2. Site project activities to minimize damaging, degrading or removing suitable roosts or foraging habitat in known or assumed occupied summer habitat any time of year.

SUMMER CM 3. Site project activities to avoid all removal of documented travel/commuting habitat any time of year.

SUMMER CM 4. Site project activities to minimize removing potential travel/commuting habitat in known or assumed occupied summer habitat.

SUMMER CM 5. Conduct P/A surveys for projects with more than 25 total acres of nonlinear suitable (but not documented) summer habitat removal.

SUMMER CM 6A. To avoid lethal impacts associated with tree removal, avoid removing any suitable habitat (including suitable roosts and surrounding trees that may fall on and damage suitable roosts) within the known or assumed occupied summer habitat, during the active season.

OR

SUMMER CM 6B. If avoidance of the entire active season is not possible (Summer CM 6A), avoid removing any suitable habitat (including suitable roosts) within known or assumed occupied summer habitat between April 1 and August 15.¹⁸³

SUMMER CM 7. Avoid all raising of any road/rail profile above the tree canopy within 1,000 feet of known or assumed occupied summer habitat.

¹⁸³ Unless fewer than 10 trees will be removed, and a visual emergence survey that did not record any presence has been completed.

SUMMER CM 8. During the active season, avoid all burning of debris piles (brush piles) for vegetation removal within known or assumed occupied summer habitat. Methods such as chipping and mulching are preferred.

SUMMER CM 9. Coordinate with the local field office for projects that increase noise above existing traffic/background levels and/or vibrations (e.g., blasting) within 0.25 mile of roosts, captures, or detections. Avoid conducting those activities during the active season or implement measures to dampen sound/vibration levels.

SUMMER CM 10. Direct temporary lighting away from known or assumed occupied summer habitat during the active season.

SUMMER CM 11. When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, the goal is to be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable.

SUMMER CM 12. Use only pesticides that are approved for use in and around waterbodies or wetlands.

SUMMER CM 13. Locate staging areas for equipment, fuel, materials, and personnel at least 100 feet (or greater if local or State rules require more) from wetlands, streams and waterbodies (including drainage ditches), and water supply wells, to reduce the potential for sediment and hazardous spills entering these areas. If sufficient space is not available, coordinate with the local field office to determine if alternate measures (i.e., spill plan) can avoid contamination of foraging habitat and drinking water.

SUMMER MEASURE (OPTIONAL) 14A. Minimize to the maximum extent practicable or consider alternatives to the number of stream crossings and acres of wetland fill within known or assumed occupied summer habitat.

SUMMER MEASURE (OPTIONAL) 14B. If stream or wetland mitigation is required as part of State, local or Federal permitting processes for the project, where practicable, site those efforts close to known Covered Species roosting or foraging habitat.

SUMMER CM 15A. To avoid lethal impacts, conduct any tree removal, topping, limb trimming, or pruning for postconstruction operations and maintenance activities within documented summer habitat during the inactive season.

OR

SUMMER CM 15B. If avoidance of the entire active season is not possible (Summer CM15A), avoid conducting any tree removal, topping, limb trimming, or pruning for post-construction

operations and maintenance activities within documented summer habitat between April 1 and August 15.¹⁸⁴

4.4.1.4 Conservation Measures that Conserve and Manage Artificial (Manmade) Roosting Habitat

All projects within known or assumed occupied structures follow STRUCTURE CM 1-2.

The following CMs support GCP objective 9.

STRUCTURE CM 1A. Perform any structure replacement and/or maintenance work during the winter hibernation period unless a hibernating colony of bats is present.¹⁸⁵ Note: Structure CM 1A is an avoidance measure for directly affecting roosting bats; the full implementation of which may not always be practicable. If structure replacement, and/or maintenance work must be performed when bats are present, then follow Structure CM 1B.

OR

STRUCTURE CM 1B. If work is conducted when bats are present, avoid all disturbance of bats. For example, the following types of bridge work can generally be conducted when bats are present:

- Above deck work where construction equipment or materials do not extend to the underside of deck where bats may be located (e.g., materials that may drip down to underside of deck) or does not include percussives (vibration) or noise levels above general traffic (e.g., road line painting, wing-wall work)
- Below deck work that is not conducted immediately below roosting bats and does not involve percussives or noise level above general traffic (e.g., wing-wall work, some abutment, beam end, scour, or pier repair)

STRUCTURE CM 2. Avoid removing or altering roosting potential of structures or bridges with signs of roosting bats (e.g., signs of stains, guano, or vocalizations).

4.5 Anticipated Type and Amount of Take

Service regulations provide that the amount or extent of anticipated take may be expressed using surrogate metrics, provided that the Biological Opinion or incidental take statement documenting the conclusion of required intra-Service consultation under ESA section 7:

1. Describes the causal link between the surrogate and take of the listed species;
2. Describes why it is not practical to express the amount of anticipated take or to monitor take-related impacts in terms of individuals of the listed species; and

¹⁸⁴ Unless fewer than 10 trees will be removed, and a visual emergence survey that did not record any presence has been completed.

¹⁸⁵ Coordinate with local field office to determine if overwintering bats are present.

3. Sets a clear standard for determining when the amount or extent of the taking has been exceeded.¹⁸⁶

The Service applies the same rationale for use of surrogates in Permits. For this GCP, acres of suitable habitat are used as a surrogate for take of individual IBATs, NLEBs, and TCBs. The ESA directs the Service to rely upon the best available scientific and commercial data to inform decisions. Therefore, in the absence of precise, empirical data, the Service must make science-based assumptions in its decision-making process.

It is not practical or possible to quantify the amount of anticipated incidental take in terms of individual bats for this GCP. While it may be possible to estimate a range of individuals that would be adversely affected by any individual project, it is not possible to predict the number of individuals affected for an unknown number of projects at unknown specific locations over the duration of the GCP.

Though overwintering bats can be counted when individuals congregating in mines and caves that serve as hibernacula sites are under a state of torpor, it is not feasible to count IBATs, NLEBs, or TCBs during the active season. When active, individual bats are highly mobile, utilize multiple trees that constitute a single colony's roost site, and typically redistribute among the colony's multiple roost trees every 2-3 days.

Though maternity colony sizes have been estimated, projections of the number of unknown colonies within the GCP Plan Area vary widely. Colonies could be located anywhere throughout the GCP Plan Area where suitable habitat is present. By some estimates, the locations of fewer than 10 percent of all IBAT maternity colonies¹⁸⁷ within the Plan Area are known.

It is also not practical to monitor take in terms of individual IBATs, NLEBs, or TCBs because:

1. all three species are small and inconspicuous in color, which makes locating dead or injured individuals unlikely;
2. any dead or injured bats of either species may be eaten or scavenged;
3. all three species typically occupy forested areas during the active season where they are difficult to observe;
4. all three species spend a substantial portion of their lifespan in a state of torpor in hibernacula where they are difficult to locate;
5. because bats are highly mobile, delayed mortality from project related injuries may occur some distance from the project site;
6. project-related starvation or failure to reproduce cannot be detected; and
7. project-caused losses may be masked by fluctuations in numbers associated with other stressors such as WNS.

Existing survey techniques are limited to determining the take of individual bats in a particular area. However, the Service is unaware of techniques that track the number of individual bats that are exposed to lethal or sublethal take from ongoing activities in real time. Therefore, it is not practical to monitor take-related impacts in terms of individuals because determining the impact

¹⁸⁶ 50 CFR 402.14(i)(1)(i)

¹⁸⁷ Service 2018

of the take solely as a function of directly impacted individuals may not adequately account for impacts to the colony or population that result from take of certain individuals (e.g., decrease in fecundity).

Tree clearing during the *inactive season* may result in effects that rise to the level of take when the bats return to the area in subsequent active seasons. For example, bats may need to expend additional energy to locate new suitable summer habitat. It is not possible to track or monitor such project-caused take in real time. Furthermore, there are challenges with being able to locate and monitor individuals. The use of acres of tree removal (i.e., primary activity that results in take authorized by this GCP) as a surrogate for take allows the Service to set a clear standard (i.e., the numbers of acres for determining when the level of anticipated take has been exceeded). In addition, because the location, timing, and acreage of habitat impacts can be readily identified, measured, and monitored, habitat is the most reasonable surrogate for expressing the amount of anticipated take, monitoring take, and detecting when the anticipated level of take has been exceeded. Therefore, this GCP relies on the acreage of affected habitat as a surrogate for expressing amount and extent of anticipated take.

All forms of take are not anticipated from each project given the CMs included, as well as the location of projects and scope/scale of tree removal. In addition to assessing impacts from the loss of roosts, the Service anticipates impacts from the loss or fragmentation of forested areas that serve as roosting, foraging, or commuting habitat (travel corridors between roosting and foraging habitat).

Similar to impacts associated with loss/fragmentation of summer habitat, the likelihood of take occurring within spring staging/fall swarming areas depends on the location and extent of tree removal, the landscape context (amount of remaining suitable habitat), and the fitness of the individual bat.

4.5.1 Anticipated Type of Take

An IPP submitted as part of a Permit application must describe the effects likely to result from the taking of the species.¹⁸⁸ This section addresses the effects of the Covered Activities on IBATs, NLEBs and TCBs.

In general, incidental take of the Covered Species from the Covered Activities is anticipated to be associated with:

- tree removal (including trimming, topping, pruning, and/or limbing); and
- noise/vibration associated with active season habitat modification.

Take from tree removal and noise/vibration will be estimated in acres of habitat. Projects that result in ongoing or recurring take are not covered by this GCP. Project Proponents should consult with the local field office for projects expected to generate ongoing or recurring effects.

¹⁸⁸ 50 CFR 17.22(b)(1) and 17.32(b)(1)

Not all forms of take are anticipated from each project given the conservation measures included in the GCP. The form of take will be dependent upon location of projects and scope/scale of the tree removal and/or noise/vibration.

Finally, no incidental take of the Covered Species is anticipated from mitigation projects such as gating of hibernacula, protecting summer habitat, etc. Intentional take resulting from capture and handling (e.g., netting, radio transmitter attachment) that may be part of mitigation or monitoring will be addressed separately through recovery permitting mechanisms (i.e., 10(a)(1)(A) permit).

4.5.1.1 Tree Removal

Tree removal can result in the loss of documented and unknown maternity colony roosts, foraging habitat, travel corridors, and spring staging/fall swarming areas. Given the CMs and eligibility requirements of this GCP, we do not anticipate that every individual project will result in each form of take described below.

Death or injury from trees felled while bats are present

As stated previously in GCP section 2.2.2, the Covered Species form colonies in the summer, and IBATs and NLEBs also exhibit fission-fusion behavior where members frequently coalesce to form a group (fusion), but composition of the group is in flux, with individuals frequently departing to be solitary or to form smaller groups (fission) before returning to the main unit.¹⁸⁹ As part of this behavior, these species show roost site/area fidelity, but switch roosts often, typically every 2–3 days.¹⁹⁰ Bats switch roosts for a variety of reasons, including for temperature regulation, precipitation, predation, parasitism, and to make use of ephemeral roost sites.¹⁹¹ The need to investigate new potential roost trees prior to their current roost tree becoming uninhabitable (e.g., tree falls over), may be the most likely scenario.¹⁹²

The exact number of roosts an IBAT, NLEB or TCB colony uses at any given time (or across the season) is not known, because:

1. not every bat in a colony can be tracked;
2. not all bats can be tracked simultaneously;
3. bats are generally tracked for a short period; and
4. the number of trees used by a bat is correlated with number of days it is radio-tracked.¹⁹³

Depending on the bat species, maternity colonies of the Covered Species can use a minimum of 1–33 different roost trees in one season.¹⁹⁴ Therefore, bats associated with a maternity colony are spread out across these multiple trees on any given day. A colony is often dispersed among

¹⁸⁹ Barclay and Kurta 2007; Garroway and Broders 2007.

¹⁹⁰ Foster and Kurta 1999; Owen et al. 2002; Kurta et al. 2002; Carter and Feldhamer 2005; Kurta 2005; Quinn and Broders 2007

¹⁹¹ Carter and Feldhamer 2005

¹⁹² Kurta et al. 2002; Carter and Feldhamer 2005; Timpone et al. 2010

¹⁹³ Gumbert et al. 2002; Kurta et al. 2002

¹⁹⁴ Callahan et al. 1997; Kurta et al. 2002; Perry and Thill 2007; Poissant 2009; Silvis et al. 2015

numerous trees, with IBATs and NLEBs, in particular, occupying one or more primary roosts, while individuals and small groups reside in different alternate roosts.¹⁹⁵ However, 1–3 primary roosts are used by the majority of IBATs for some or all of the summer.¹⁹⁶ NLEBs have a similar roost tree dynamic, though primary roosts for this species are referred to as central-nodes.¹⁹⁷ TCBs may also have a similar roost tree dynamic.

While some bats can flee during tree removal, removal of occupied roosts may result in injury or mortality to some percentage of bats, particularly nonvolant pups. If a bat is in the tree and a tree is cut down, the bat may either stay in the tree and potentially be crushed or fly out during the day. The Covered Species may also use up energy reserves searching for an alternate roost tree.

Individual NLEB home ranges have been minimally estimated at 148.8–173.7 acres,¹⁹⁸ with colony home ranges being larger. Average home range sizes of individual IBATs may be several hundred acres in size¹⁹⁹ (e.g., 357.5 acres²⁰⁰ and 205 acres,²⁰¹ and can be as much as 12,566 acres²⁰²). Limited home range research has been conducted on the TCB. However, one study found that two lactating TCB females in Wisconsin had a 170 ha (420 acres) and 260 ha (642 acres), respectively.²⁰³ For all species, core roosting areas are smaller than foraging areas, with roosts often clustered in space. Size of both foraging and core roosting areas likely vary depending on habitat quality. For example, larger home ranges may be necessary to meet a bat's needs in less suitable habitat.

In most cases, the Service does not have sufficient information to map core roosting and foraging areas or documented travel routes for known maternity colonies for each species. However, data from the Service's *Indiana Bat Section 7 and Section 10 Guidance for Wind Energy Projects*²⁰⁴ summarizes the home range of IBAT maternity colonies at a broad scale. Data for the home range of NLEBs and TCBs can be found in the Service's *Range-wide Indiana Bat and Northern Long-eared Bat Survey Guidelines*.²⁰⁵ The likelihood of projects intersecting with bat habitat such as roosting, foraging, or commuting areas increases with the size of each project or the density of projects in a specific area. This intersection can expose individuals to stressors related to these projects. Therefore, the Service assumes that linear projects along existing roadways/railways are less likely to intersect with multiple roosts.

Impacts to bats from tree removal is anticipated to vary depending on the location, extent, and timing of removal. The location with greatest likelihood of cutting a roost with bats present is a known maternity colony roost or suitable trees in close proximity to known maternity colony roosts. Permits issued under this GCP will not result in the removal of any known, documented

¹⁹⁵ Kurta 2005

¹⁹⁶ Callahan et al. 1997

¹⁹⁷ Silvis et al. 2015

¹⁹⁸ Owen et al. 2003; Lacki et al. 2009

¹⁹⁹ Menzel et al. 2005; Sparks et al. 2005; Watrous et al. 2006; Jachowski et al. 2014; Kniewski and Gehrt 2014; Divoll and O'Keefe 2018

²⁰⁰ Menzel et al. 2005

²⁰¹ Watrous et al. 2006

²⁰² Service 2011

²⁰³ Wisconsin DNR 2018

²⁰⁴ See: <https://www.fws.gov/media/indiana-bat-section-7-and-section-10-guidance-wind-energy-projects>.

²⁰⁵ See: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

roosts (that remain suitable for roosting) or trees within 150 feet of those roosts at any time. Therefore, projects will avoid the potential for this particular impact.

For IBATs and NLEBs, the next greatest likelihood of removing occupied roosts is within one mile of documented roosts.²⁰⁶ In addition, based on previous survey results and the presence of suitable habitat for all Covered Species, the Service anticipates that there are undocumented roosting and foraging areas present throughout the Plan Area. The larger the area of tree removal, the greater the likelihood of intersecting an occupied roost tree. In assumed occupied summer habitat, Project Proponents can choose to assume presence in certain situations (linear projects or nonlinear projects with less than 25 total acres of suitable habitat impacts) or conduct P/A summer surveys. Since the Service does not have sufficient survey information for most summer habitat, we assume an equal risk of this occupancy throughout all documented habitat (outside of 150 feet of roosts) and assumed occupied habitat. Therefore, the impacts discussed above may be applicable to tree clearing outside of 150 feet from roosts regardless of whether it is within known or assumed occupied habitat.

The likelihood of bats occupying potential roost trees is highest during pregnancy and lactation, with roost tree exit counts falling dramatically after this time as bats begin to migrate out of maternity habitat in late summer. For example, two studies found NLEBs use of suitable roost trees appears to be highest in spring, when females were pregnant, and the colony apparently splintered into smaller groups before parturition.²⁰⁷ IBAT colonies also break up over time with smaller exit counts later in the summer.²⁰⁸ For TCBs, as the maternity season progresses, colony sizes begin to fluctuate, females begin to disband soon after young became volant, and postlactating females roost singly for the remainder of the summer.²⁰⁹

The greatest risk of take is during the period when colonies are largest (most concentrated), and pups cannot fly. The risk is also greater to adults during cooler weather when bats periodically enter torpor and are unable to arouse quickly enough to respond. Neither of these situations is anticipated because the GCP limits the months of active season tree removal (see Table 1) within known occupied or assumed occupied summer maternity colony habitat as pups will be volant at this time and maternity colonies will be breaking up to migrate to fall swarming areas.

Once IBATs, NLEBs, and TCBs migrate back to their hibernacula, lethal impacts are not reasonably certain to occur from tree removal because the GCP does not authorize take of the bats during the active season within known or assumed occupied spring staging/fall swarming areas (up to 20 miles depending on species and hibernacula population numbers).

²⁰⁶ At a site with less abundant potential roosts, Kurta et al. (1996) observed bats moving an average of 686 m between roosts, ranging from 4 m to 5.8 km. On the Fort Drum Military Installation, NY, most roosts are found within approximately 2,200 acres (U.S. Army 2011). Two colonies in KY, with long-term tracking, have roosting areas of approximately 2,400 to 3,200 acres (M. Armstrong, Service, email to R. Niver, Service, April 4, 2019). These distances/acreages are similar to a 1-mile radius circle.

²⁰⁷ Sasse and Pekins 1996; Foster and Kurta 1999

²⁰⁸ Barclay and Kurta 2007

²⁰⁹ Veilluex and Veilluex 2004

Harm from loss of individual roosts

Because the Covered Species rely on previously established roosts (fidelity), roost tree loss, regardless of whether it occurs during the active or inactive (winter) seasons, may affect the fission-fusion dynamics of their maternity colonies through colony fragmentation.

As stated previously in GCP section 2.3.1.1, although loss of a roost is a natural phenomenon that bats must deal with regularly, the loss of multiple roosts simultaneously due to a variety of reasons likely stresses individual bats, as well as the social structure of the colony.²¹⁰ Maternity colonies are typically formed by bats coming from multiple hibernacula. These bats must be able to reassemble with each other in the spring when they return so that they can form colonies. If some established roosting and foraging areas no longer exist, it will be more difficult for bats to re-form colonies. Colonies may fragment (split into multiple colonies) temporarily with the loss of a primary roost or multiple alternate roosts.²¹¹ Although TCBs exhibit site fidelity to roosting areas, they are adapted to shifting and reforming maternity colonies because of the ephemeral nature of their roosting habitat (i.e., tree foliage), and the small size of their maternity colonies (i.e., range of 1–8 bats).²¹²

Because their colonial fission/fusion behavior contributes to reproductive success, colony fragmentation is expected to result in reduced thermoregulatory benefits and either increased energy expenditures or increased use of torpor resulting in: 1) reduced recruitment and/or 2) reduced adult survival. It is unknown for TCBs given that some maternity colonies only consist of a single female and her two pups.

Smaller colonies may be expected to provide less thermoregulatory benefits for adults and for nonvolant pups in cool spring temperatures. Female bats have tight energy budgets, and in the spring need to have sufficient energy to keep warm, forage, and sustain pregnancies. Increased flight distances or smaller colonies are expected to result in some percentage of bats having reduced pregnancy success, and/or reduced pup survival. Again, this is unknown for the TCB given their small colony size.

In areas with WNS, there are additional energetic demands for the Covered Species. For example, WNS-affected bats have less fat reserves than non-WNS-affected bats when they emerge from hibernation²¹³ and have wing damage²¹⁴ that makes migration and foraging more challenging. Females that survive the migration to their summer habitat must partition energy resources between foraging, keeping warm, successful pregnancy and pup-rearing, and healing.

As stated previously, impacts to bats from tree removal are anticipated to vary depending on the location, extent, and timing of removal, but is greatest within one mile of known maternity roost trees. Therefore, we assume the closer the tree removal activity is to a known maternity roost tree, the greater chance that a maternity colony could be negatively affected.

²¹⁰ Service 2007

²¹¹ Sparks 2003; Silvis et al. 2014a; Silvis et al. 2014b

²¹² Veilluex and Veilluex 2004

²¹³ Reeder et al. 2012; Warnecke et al. 2012

²¹⁴ Meteyer et al. 2009; Reichard and Kunz 2009

Permits issued under this GCP will not result in the removal of any known, documented roosts (that remain suitable for roosting) or trees within 150 feet of those roosts at any time. However, because there are more roosts on the landscape than the Service has identified to date, and effects from the loss of unknown roosts are reasonably certain to occur, the Service has addressed those associated effects in this GCP.

Harm from loss/fragmentation of roosting, foraging, and travel/commuting habitats

In addition to assessing impacts from the loss of roosts, the Service anticipates impacts from the loss or fragmentation of forested areas that serve as roosting, foraging, or travel/commuting habitat.

The IBAT requires forested areas for foraging, roosting and commuting; however, at a landscape level, IBAT maternity colonies occupy habitats ranging from completely forested to areas of highly fragmented forest.²¹⁵ The minimum size of a forest patch that will sustain IBAT, NLEB or TCB maternity colonies has not been established. However, it is assumed that the likelihood of these bats roosting in a particular forest patch increases with the size and connectivity of that forest patch.

It is difficult to determine space requirements for bats because they are highly mobile and show relatively patchy use of habitat (and use of linear landscape features), but connectivity of habitats has some clear advantages (e.g., aids orientation, attracts insects, provides shelter from wind and/or predators).²¹⁶ In addition, bats' energetic constraints may preclude the use of overly patchy habitats.²¹⁷ One study suggested longer, or more frequent commuting bouts will be required by IBATs in highly fragmented landscapes, with smaller, more distant suitable habitat patches, to obtain similar resources compared to landscapes with larger, more abundant habitat patches.²¹⁸ In Michigan, IBATs did not fly over open fields but traveled along wooded corridors, even though use of these corridors increased commuting distance by over 55 percent.²¹⁹

The impact of shifting flight patterns and foraging areas on individual bats varies. Recovery from the stress of hibernation and migration may be slower as a result of the added energy demands of searching for new roosting/foraging habitat especially in an already fragmented landscape where forested habitat is limited. Pregnant females displaced from preferred roosting/foraging areas will have to expend additional energy to search for alternative habitat,²²⁰ which would likely result in reduced reproductive success (failure to carry to full term or failure to raise pup to volancy) for some females. Females that do give birth may have pups with lower birth weights given the increased energy demands associated with longer flights, or their pups may experience delayed development.²²¹ These longer flights would also be experienced by pups once they become volant, which could affect the survival of these pups as they enter hibernation with potentially reduced fat reserves. Overall, the effect of the loss of roosting/foraging habitat on

²¹⁵ Service 2007

²¹⁶ Racey and Entwistle 2003

²¹⁷ Patterson et al. 2003

²¹⁸ Kniowski and Gehrt 2014

²¹⁹ Murray and Kurta 2004

²²⁰ Gardner and Cook 2002; Kurta and Murray 2002

²²¹ Humphrey 1975; Murray and Kurta 2004

individual bats from the maternity colonies may range from no effect to death of juveniles. The effect on the colonies could be reduced reproduction for that year. These effects are reasonably certain to occur but are anticipated to be relatively short-lived as IBATs and NLEBs are anticipated to acclimate to the altered landscape. To a lesser extent this applies to TCBs because they are adapted to shifting and reforming maternity colonies due to the ephemeral nature of their roosting habitat (i.e., continual loss of tree foliage).

To address harm from the loss/fragmentation of roosting, foraging, and commuting habitats, this GCP does not cover projects that impact more than 200 acres of known occupied habitat or projects that impact more than 25 acres of nonlinear assumed occupied habitat.

Harm from loss/fragmentation of spring staging/fall swarming habitat

Impacts to IBATs, NLEBs, and TCBs from loss or fragmentation of spring staging/fall swarming habitat are not well understood. It is assumed that exposure or risk of bats actually being harmed from loss of this habitat type is greater the closer the removal is to a hibernaculum, but this has not been well established. This habitat must support the foraging and roosting needs of large numbers of bats during the fall swarming period. After arriving at a given hibernaculum, bats build up fat reserves. In addition, bats congregate for breeding near hibernacula and may not hibernate in the same area they breed within. For example, at a cave in KY, over 2,000 TCBs were banded in two weeks during the swarming period, but far less were found hibernating in the cave.²²² Loss of roosting and foraging habitat around hibernacula may result in reduced weight gain prior to entry into hibernation. For some bats this may result in reduced overwintering survival. Similar to impacts associated with loss/fragmentation of summer habitat, the likelihood of take depends on the location and extent of tree removal within spring staging/fall swarming habitat, the landscape context (amount of remaining suitable habitat), and the fitness of the individual bat.

The GCP does not cover any impacts to bats within 0.5-mile of hibernacula. However, it does consider impacts associated with loss or fragmentation of habitat further than 0.5 mile from hibernacula.

4.5.1.2 Noise/Vibration Associated with Active Season Habitat Modification

In addition to actual loss of known or assumed occupied habitat, this GCP contemplates the reasonable certainty of take of the Covered Species due to harm from noise or vibration (excluding areas within 0.5 mile of known or assumed occupied hibernacula). Information regarding impacts from noise/vibration is limited for the Covered Species, but some information for the IBAT is available as described below.

Bats may be exposed to noise/vibration from activities near their roosting, foraging, or spring staging/fall swarming areas. Significant changes in noise levels in an area may result in temporary or permanent alteration of bat behaviors. For example, IBATs abandoned a primary roost when a bulldozer cleared brush adjacent to the tree.²²³ The novelty of these noises and their relative volume levels will likely dictate the range of responses from individuals or colonies of

²²² Barbour and Davis 1969; Mumford and Whitaker 1982

²²³ Callahan 1993

bats. At low noise levels (or farther distances), bats initially may be startled but are anticipated to habituate to the low background noise levels. For example, IBATs associated with a maternity colony along Interstate 81 in Jefferson County, NY did not appear to be affected by noise from travelling vehicles.²²⁴ Additionally, IBATs have been documented roosting within approximately 984 feet of a busy state route adjacent to Fort Drum and immediately adjacent to housing areas on Fort Drum.²²⁵ At closer range and louder noise levels, bats could be startled to the point of fleeing from their day-time roosts. For projects with noise or vibration levels greater than levels usually experienced by bats, and that continue for multiple days, the bats roosting within or close to these areas are likely to shift their focal roosting areas further away or may temporarily abandon these roosting areas.

It is not definitive that IBATs, NLEBs, or TCBs will shift or abandon their roosts as a result of any adjacent disturbances. While noise and disturbance can cause adjacent remaining forest habitat to be less suitable until the bats become accustomed or shift their home ranges, the primary stressor of concern is the actual loss of available habitat. Summer CMs minimize the likelihood that noise/vibration will result in take in most instances. Projects that only result in take from noise/vibration (i.e., noise/vibration that is not associated with tree removal) are not covered by this GCP.

4.5.2 Anticipated Amount of Take

When determining the impacts of the taking for this GCP, the Service considered the eligibility requirements, the conservation program, and the short-term nature of the impacts associated with this GCP.

For example, the GCP authorizes no impacts to hibernating bats or hibernacula, no removal of *suitable documented roosts* or trees within 150 feet of those roosts any time of year, minimizes exposure of bats to impacts during the active season as tree removal can only occur between August 16-March 31 in suitable summer habitat, and no active season tree removal between April 1 and November 15 within known or assumed occupied spring staging/fall swarming areas.

For linear projects (that are covered in this GCP), there are no caps on acreage of known or assumed occupied habitat removal for individual projects because the risk of removing a large portion of a Covered Species' home range and multiple roosts within it is lower with this project type.

For nonlinear projects with more than 25 acres of tree removal, the GCP will require surveys because assuming presence everywhere is not consistent with the conservation strategy for the Covered Species. The larger the potential impact, the greater the number of assumptions and more challenging the analyses will be. Furthermore, assuming impacts and working through the GCP process when the species are not present results in unnecessary expenditure of resources by both the Service and Applicants. The application of this approach will minimize the likelihood of impacting unknown maternity colonies, because projects with greater than 25 total acres of suitable summer habitat removal will incorporate P/A surveys. Following this approach, if bats

²²⁴ Service 2008

²²⁵ U.S. Army 2014

are successfully captured and tracked to roosts, any roosts located have the opportunity to be protected and projects can be designed to further minimize take.

For nonlinear projects within known occupied habitat (spring/fall or summer), the take of the Covered Species associated with up to 200 acres of habitat removal is covered under this GCP. Projects involving more than 200 acres of nonlinear known occupied habitat removal are not eligible to use this GCP. The 200-acre cap is intended to provide clear boundaries for our analysis and is not meant to imply that projects exceeding 200 acres of habitat removal are likely to jeopardize the continued existence of the Covered Species. The Service’s prior Biological Opinions for ESA section 7 projects with less than 200 acres of proposed tree clearing in the GCP Plan Area have concluded that these activities would not jeopardize the continued existence of the IBAT or NLEB. Therefore, the acreage cap adopted in this GCP is consistent with prior Service determinations.²²⁶

Based on the Service’s experiences with past projects (within the GCP Plan Area), and their associated forest loss, this GCP authorizes a maximum acreage of impact for IBAT, NLEB and TCB known or assumed occupied habitat/year within each State. In places where the species overlap, the Service will subtract acres for each species from the totals, just as in places where all species occur for mitigation, the Service will apply the benefits for each species (e.g., one mitigation project can benefit all three species). Over the 10-year life of this GCP, the maximum amount of take permitted will be up to 180,000 acres (with habitat as a surrogate for individual bats, as explained previously), depending on species overlap. This includes up to 2,000 acres for each state per year per Covered Species in NY, PA, and WV totaling 6,000 acres annually (Table 2).

Table 2. The maximum permitted acreage-impacts within the Permit Area for the Covered Species.

State	IBAT acres/year	NLEB acres/year	TCB acres/year	IBAT acres/duration of GCP (10 years)	NLEB acres/duration of GCP (10 years)	TCB acres/duration of GCP (10 years)
NY	2,000	2,000	2,000	20,000	20,000	20,000
PA	2,000	2,000	2,000	20,000	20,000	20,000
WV	2,000	2,000	2,000	20,000	20,000	20,000
Total	6,000	6,000	6,000	60,000	60,000	60,000

As discussed above, the Service can reasonably anticipate impacts to individual bats associated with this habitat removal. The Service can also reasonably anticipate impacts to populations

²²⁶ Service 2014; Service 2017; Service 2021b; and Service 2022b

(maternity colonies and associated hibernating colonies) through the reduction of a colony's reproduction in a given year. However, these impacts will be short term in duration as the Service does not anticipate any impacts to IBATs at the recovery unit level or species level, impacts to the NLEB at the species level or impacts to the TCB at the species level.²²⁷

Overall, the GCP will provide better conservation for the Covered Species than the current project-by-project review approach. Unlike the current approach, all projects using the GCP must comply with certain CMs, which in turn will result in expedited review procedures. The CMs include mitigation that will restore, enhance and/or permanently protect important IBAT, NLEB, and/or TCB habitat. The Service anticipates no losses of entire core roosting or foraging areas and no effects to hibernacula for the Covered Species. This is a short Permit duration, and the Service can apply an adaptive process and amend or terminate the GCP at any time, as described below in section 6.0.

4.6 Conservation Measures that Mitigate Unavoidable Incidental Take

ESA section 10(a)(2)(A)(ii) stipulates that Applicants seeking incidental take authorization must identify the steps they will take to minimize and mitigate impacts of the taking and identify the funding available to implement those measures. GCP mitigation measures are intended to offset impacts that remain after avoidance and minimization measures are implemented. Though no single project is expected to achieve recovery of the Covered Species, the coordinated and cumulative mitigation efforts of this GCP are intended to support the Service's recovery goals for the Covered Species.

This GCP provides multiple mitigation pathways intended to maintain or restore and enhance priority habitat locations for the listed species. Project mitigation requirements are calculated by considering the timing, location, and amount of habitat impacted.

An Applicant's IPP submitted as part of the GCP application process will identify which mitigation option they select to offset the impacts of their project(s). The Applicant will provide proof of mitigation to the Service prior to the onset of any activities that have the potential to result in take.

The mitigation measures in this GCP are based on the biological and ecological needs of the Covered Species and are intended to be practicable and commensurate with project impacts to the species and their habitats. Projects that result in permanent loss of occupied habitat, for example, will be offset with similarly permanent protection of occupied habitat. Implementation of mitigation measures selected by an Applicant and identified in their IPP application are required by the Permit terms and conditions.

4.6.1 Mitigation Pathways and Associated Funding Requirements

One of the purposes of this GCP is to promote strategic conservation efforts while streamlining the Permit issuance process for non-Federal projects. To that end, this GCP facilitates the use of

²²⁷ The Service does not have designated recovery units for the NLEB or TCB at this time.

uniform metrics for calculating mitigation needs across the range of eligible project types and facilitates the use of efficient pathways to secure required mitigation offsets.

GCP Applicants may select from several potential mitigation pathways, including purchasing credits from Service-approved conservation banks, participation through Service-approved ILF programs, creation of local conservation areas for which the Permittee remains responsible, or mitigation surveys that find new Covered Species maternity colonies or hibernacula. Mitigation options are prioritized to meet the conservation and recovery needs for the Covered Species as defined by the biological goals and objectives of this GCP.

4.6.1.1 Service-Approved Conservation Banks

Conservation banks protect and manage permanently conserved lands to provide ecological functions and services in accordance with legally binding conservation bank instruments. These conserved lands are established to restore, enhance, or create habitat to protect biological and ecological values for species and their habitats in perpetuity. Because conservation banks function to offset adverse impacts to species or their habitat that occur on other lands, they are sometimes referred to as an offsite mitigation option.

In exchange for providing permanent habitat protection and management, the Service defines the number of credits that conservation *bank sponsors* can sell to offset adverse impacts occurring elsewhere. Credits consist of defined units representing the accrual or attainment of ecological functions or services at a bank site. An acre of occupied high-quality habitat, for example, might be defined in a *conservation banking* instrument as one credit for the conserved species. Conservation bank credits are qualified by confirming that they meet Service-approved performance criteria described in the conservation banking instrument to ensure that they provide the expected ongoing ecological benefit for the species.

Applicants that need to offset unavoidable project impacts to Covered Species may purchase credits from Service-approved conservation banks to satisfy their mitigation needs. The GCP specifies a consistent method for determining the number of acres that a project will need to offset adverse impacts, described in section 4.6.4.

Because conservation banks can provide mitigation credits representing qualified conserved habitat before project impacts occur, this option streamlines Permit processing and is also most beneficial for the affected species. Conservation bank sponsors are obligated by the conditions of their banking instrument to provide ongoing management, monitoring, adaptive responses to changed circumstances, and reporting to ensure that the ecological values of conserved lands are maintained in perpetuity. Use of conservation banks as a mitigation tool can streamline and simplify the mitigation process for Project Proponents.

Applicants within a Service-approved conservation bank's service area may purchase credits for the Covered Species to meet their mitigation obligations either prior to Permit issuance or prior to the onset of any activities that have the potential to result in take of the Covered Species. There are Service-approved conservation banks with service areas within the Plan Area that

provide credits for IBATs, and others have been proposed.²²⁸ Currently, there are no approved conservation banks within the Plan Area that provide mitigation credits for NLEBs or TCBs. Applicants should contact their local field office or review information about available conservation banks on the Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS) website (<https://ribits.ops.usace.army.mil/>).

Landowners interested in establishing conservation banks on their lands should contact their local field office for more information.

4.6.1.2 In Lieu Fee Programs

ILF programs collect funds to support conservation efforts (e.g., preserve, restore, enhance, or establish habitat, or conduct surveys that promote the recovery of the species) for a particular species, and remain responsible for the completion and success of the compensatory mitigation associated with Permits that provide funds to the program. ILF Program Sponsors may be governmental or nonprofit natural resource management entities authorized to collect and disburse funds to purchase land or perform specific habitat management or enhancement activities prescribed in a legally binding ILF instrument that governs the program operation. Under this approach, a Service-approved ILF Program Sponsor collects funds from Project Proponents that need to provide compensatory mitigation to offset the impacts of their project(s). The sponsor aggregates and directs funds to projects authorized by the ILF instrument to satisfy the Permittees' mitigation obligations. A failure of the sponsor to carry out the Permittee's mitigation obligations is attributed to the Permittee.

Service-approved ILF Programs can be used to satisfy mitigation requirements for impacts to specified species or habitat. The ILF approach alleviates time constraints associated with traditional mitigation approaches such as the development and approval of mitigation proposals on a project-by-project basis and can accrue funds from multiple projects to acquire or support mitigation efforts of greater conservation value on behalf of ILF mitigation participants.

Applicants may mitigate through Service-approved rangewide, regional, or local ILF Programs for the IBAT, NLEB, and/or TCB. Currently there is one rangewide Service-approved ILF mitigation program available for IBATs and NLEBs.²²⁹ ILF funds for GCP mitigation will only be expended within the state where the funds originated unless the local field office agrees to the use of funds for out-of-state mitigation projects. This ensures that ILF Program actions most directly support the bat populations impacted by projects funding the offsets.

Applicants choosing to mitigate through ILF Programs may contribute fees prior to Permit issuance or prior to the onset of any activities that have the potential to result in take of the Covered Species. Ongoing effectiveness monitoring, adaptive management, and responses to changed circumstances are implemented by the ILF Program Sponsor.

²²⁸ Applicants are encouraged to confirm with the Service prior to credit purchase that their intended conservation bank is approved for use as mitigation under this GCP.

²²⁹ See: <https://www.fws.gov/program/endangered-species/bat-consultation-conservation-strategy>.

Applicants interested in pursuing ILF mitigation options should contact their local field office (see appendix A) or review information about ILF Program availability on the RIBITS website at <https://ribits.ops.usace.army.mil>.

4.6.1.3 Permittee-Responsible Mitigation

Permittee-responsible mitigation (PRM) is a common mitigation approach to offset the impacts of the taking from certain project activities. Under PRM approaches, Project Proponents typically identify, protect, and retain ongoing responsibility for ensuring that required mitigation actions are successfully completed. Alternatively, Project Proponents may provide funding to a Service-approved conservation entity (e.g., land trust or other nongovernmental organization) to conduct these activities on their behalf. In either case, Permittees remain responsible for ongoing monitoring and management, adaptive responses to changed circumstances, and reporting to ensure that expected benefits are achieved and maintained. PRM projects may occur on a proposed project site or offsite, but within the Permit Area of the GCP.

By establishing PRM standards, consistent priority project locations, and priority conservation actions, this GCP articulates requirements to help facilitate approval of mitigation for Applicants that cannot access conservation banks or ILF Programs.

Through this GCP, permanent impacts, including removal of trees or other permanent adverse effects to habitat, are required to be offset with similarly permanent mitigation. Project Proponents pursuing permanent conservation of spring staging, maternity roost and summer habitat, fall swarming, or overwintering habitat shall purchase or otherwise acquire fee title interest in one or more land parcels that meet the intents and priorities spelled out in this GCP conservation program and secure the land(s) through dedication of a perpetual conservation easement and land management agreement on the parcel(s). Alternately, Project Proponents may secure perpetual conservation easements and associated land management agreements on one or more parcels that meet the intents and priorities spelled out in this GCP conservation program that they do not own by entering into a legally binding agreement with the landowner to ensure ongoing management to the mitigation standards required in this GCP.

Habitat Protection

Conservation easements that secure PRM lands must be held by a Service-approved third-party. Acceptable conservation easement holders must meet applicable State requirements and, generally, may be nongovernmental entities dedicated to the protection of natural resources, land trusts, or other entities acceptable to the Service. The Service may require that third party easement holders responsible for managing mitigation in connection with a Permit meet certain financial transparency and accountability standards as established in Departmental regulations or policies.

Conservation easement terms must stipulate that any subsequent holder(s) of the instrument must meet all financial transparency and accountability standards and be bound to manage the property to achieve the ecological benefits for which the easement was established. Lands that are proposed to meet mitigation requirements as part of this GCP are subject to review and approval by the Service.

For hibernacula gating projects, with agreement of the landowner, gates may be installed on hibernacula owned by private entities, township, county, State, or Tribal governments, provided such gating is not already planned for by the entity, or the ownership terms do not already provide equivalent protection to the overwintering site. Mitigation must provide a measurable conservation benefit to the Covered Species that exceeds current site conditions (benefits that are planned or otherwise already exist) to meet GCP biological goals and objectives.

Lands conserved as PRM, whether acquired in fee title or through conservation easement, shall secure unencumbered surface, air, and subsurface (e.g., mineral) rights to the property where possible, and conflicting interests that cannot otherwise be cleared should be subordinated. Permittees that cannot acquire, clear, or subordinate potentially-conflicting property interests may be required to provide additional assurances (financial or otherwise) to ensure that if such rights are exercised the biological and ecological values for which the mitigation was established will be maintained or replaced in a manner suitable to the Service. The Service retains the right to reject a PRM site for which conflicting rights cannot be acceptably resolved. Project Proponents are responsible for all fees and/or other costs associated with title work, recording, transferring, surveying, and/or acquiring of properties and easements, and other requirements to secure the mitigation land and ensure that the biological and ecological values are managed and maintained. Third parties often require funding commitments that may include an endowment or irrevocable trust to provide for the perpetual management of the habitat and associated ecological values. Third parties may seek funding commitments for overhead costs (e.g., invasive species management, fencing, trash removal, monitoring and reporting costs) as a condition to accept title or easement management responsibilities for a mitigation property. Project Proponents pursuing PRM are responsible for fully vetting the financial commitments and other requirements of third parties to ensure that they meet all applicable requirements.

Habitat Restoration and Enhancement

Habitat restoration and enhancement activities can also occur as part of PRM. See Priority Actions in GCP section 4.6.3 below for examples. Project proponents are responsible for developing habitat restoration and enhancement projects, which must be approved by the Service, and for all fees associated with the projects. To be considered toward GCP recovery-focused conservation goals, restoration and enhancement mitigation must provide a measurable conservation benefit to the Covered Species that exceeds current site conditions (benefits that are planned or otherwise already exist).

Applicants that seek to develop their own PRM options should contact their local field office to determine the steps necessary to secure mitigation commitments that meet the GCP requirements.

4.6.2 Priority Project Locations

Each State within the Plan Area includes Conservation Focus Areas (CFA), also known as priority areas, for the Covered Species. The CFAs represent the best scientific and commercial distribution information currently available for the species. The goal of the CFAs is to focus conservation efforts where the species are documented to occur to provide greater ecological benefits for the Covered Species.

Each ILF Program or conservation bank has a defined service area where they are authorized to sell credits, or the owner may collect fees. The Service determines service areas based on physical and ecological attributes such as watersheds, soil types, species recovery units, and/or species and population distributions. Service area maps are available for each approved conservation bank or ILF Program. For example, the currently available rangewide IBAT and NLEB FHWA ILF Program has a state-by-state service area.²³⁰ PRM projects can occur in any CFA within the state of impact. Project Proponents will coordinate with the local field office to determine what mitigation options are available and what service areas may apply.

Examples of CFAs in the Plan Area include hibernacula, areas within spring staging/fall swarming habitat, maternity roosts and maternity colony home ranges. In particular, areas within maternity colony home ranges, that are associated with documented captures/detections, roosts, and/or foraging locations for the Covered Species, are being prioritized for protection.

4.6.3 Priority Mitigation Projects

This GCP prioritizes mitigation and conservation actions based on the anticipated effects of the Covered Activities on the Covered Species and their conservation needs, and on actions that best support regional recovery-focused goals. Protecting remaining WNS survivors is generally prioritized below, though the Service may prioritize measures that provide a higher conservation value for IBATs, NLEBs, or TCBs in a particular circumstance.

Priority 1 Actions

Action: Permanently protect maternity roosts and associated summer habitat via a Service-approved mitigation mechanism (conservation bank, ILF Program, or PRM) (addresses objectives 6 and 9).

- Protect habitat used for roosting and foraging, and/or travel/commuting corridors.
- Maternity roost and associated summer habitat protection should prioritize larger blocks of occupied habitat, associated buffer areas, and connecting corridors. Small parcels may be prioritized if they are adjacent to or will expand on existing areas protected and managed for the benefit of the Covered Species. Key parcels of high ecological importance that may serve as core conservation areas may be appropriate mitigation sites in some instances.
- Summer habitat protection should prioritize lands where IBAT, NLEB, and/or TCB occupancy has been documented post-WNS.²³¹
- Mitigation for IBAT impacts requires protection of IBAT habitat. Mitigation for NLEB impacts requires protection of NLEB habitat. Mitigation for TCB impacts requires protection of TCB habitat. Lands occupied by all three Covered Species can provide mitigation for all three Covered Species.

²³⁰ See: *Consultation and Conservation Strategy for Listed Bats* | U.S. Fish & Wildlife Service.

²³¹ Coordinate with your local field office (appendix A) to determine what post-WNS date to use.

- Maternity roost and summer habitat protection prioritizes forest within and/or adjacent to lands with recent documented captures, roosts, telemetry, or acoustic detections.
- Maternity roost and summer habitat protection actions should prioritize lands most threatened by development.

Action: Restore and/or enhance permanently protected maternity roosts and associated summer habitat (addresses objective 8).

- Restoration of maternity roosts and associated summer habitat may be considered when the local field office determines it is important (e.g., the forest cover within the maternity colony's anticipated home range is less than 50 percent).
- Restoration efforts can include enhancement or expansion of protected travel corridors between forest patches.
- Restoration of forested habitat prioritizes enhancing (e.g., girdling trees, erecting artificial roost structures) and expanding (i.e., planting) forest patches within maternity colony home ranges verified with recent documented captures, roosts, telemetry and/or acoustic detections.
 - Restoration or enhancement of roosting and/or foraging habitat should prioritize planting native tree species with characteristics expected to provide future bat roosting opportunities (e.g., shagbark hickory [*Carya ovata*] for IBAT, oak species for TCBs).
 - To benefit IBATs and NLEBs, artificial roosting structures (e.g., bat houses, rocket boxes) may be installed to enhance bat roosting opportunities until newly planted trees are mature enough to provide roosting habitat.

Priority 2 Actions

Action: Permanently protect hibernacula and associated spring staging and fall swarming areas (addresses objectives 1 and 4).

- Conservation actions may include protection of hibernacula (e.g., cave, mines, portals) and their associated underground features, roosting habitat, foraging habitat and/or travel/commuting corridors via Service-approved mechanism and/or gating projects.
- Protection should prioritize land with recent confirmed IBAT, NLEB, and/or TCB presence based on Service or State agency information or Applicant-conducted surveys. The probability of continued presence, and benefits from protecting land, is higher if demonstrated records of presence post-WNS declines were documented in that region.
- Conservation actions can occur at any occupied hibernaculum within the state of impact subject to a known, existing threat (contact local field office). A known, existing threat is defined as the occurrence of one or more ungated entrances, an entrance which is unstable and in danger of collapse, or other threats (e.g., contaminants, commercialization, vandalism) that can be successfully alleviated.

- Gating projects shall be conducted by experienced qualified contractors subject to review and approval by the Service.
- Spring staging and fall swarming area protection should focus on larger blocks of occupied habitat, associated buffer areas, and/or connecting corridors.
- Protection of suitable forested habitat should prioritize areas within 5 miles of hibernacula openings.
- The conservation value of a particular hibernaculum proposed for protection depends on circumstances applicable to that particular parcel of land; therefore, standard multipliers are not provided and must be determined on a case-by-case basis. Factors that influence the value of a particular protection land include but are not limited to:
 1. the relative significance of the land to the conservation and recovery of the Covered Species;
 2. the quality of the habitat;
 3. the level of protection afforded; and
 4. the degree of risk to the land without the proposed mitigation measure.
- The Service and/or local State agency shall have future access for bat monitoring.

Action: Restore and/or enhance permanently protected roosting and/or foraging habitat within known fall swarming or spring staging areas (addresses objective 5).

- Restoration or enhancement of fall swarming or spring staging area habitat may contribute to mitigation when prioritized by the local field office (e.g., the forest cover within 5.0- miles of hibernacula is less than 50 percent).
- Restoration should include travel/commuting corridors between forest patches, where appropriate.
- Restoration should focus on enhancing (e.g., girdling trees, installing artificial roost structures) and/or expanding (i.e., planting) forest patches within fall swarming or spring staging areas.
 - Restore or enhance currently unsuitable roosting and/or foraging habitat by planting native tree species (e.g., shagbark hickory for IBAT, oak species for TCBs) expected to provide future bat roosting opportunities.
 - To benefit IBATs and NLEBs, install artificial roosting structures (e.g., bat houses, rocket boxes) to enhance roosting habitat opportunities while planted trees are too young to provide roosting habitat.

Priority 3 Actions

Action: Restore hibernacula (addresses objective 2).

- Restore air flow, water quality, microclimate, and/or structural integrity of known or potentially suitable hibernacula that the Service identifies as benefiting from this work (e.g., historical evidence of hibernating bats).

- Monitoring that documents occupancy by the Covered Species after restoration is required as a condition of credit generation for restored hibernacula sites.

Action: Search for and identify previously undocumented IBAT, NLEB, and/or TCB hibernacula (addresses objective 3).²³²

- Conduct late summer/fall telemetry surveys (including aerial support) at maternity colonies to identify new hibernacula.
- Conduct fall or spring acoustic and/or netting/trapping surveys in targeted areas identified by local field offices to identify new hibernacula. Follow Service/State guidance for portal/cave surveys.²³³

Action: Search for and identify previously undocumented IBAT, NLEB, and/or TCB maternity colony roosts or identify roosts in prior colonies where only acoustics or netting previously occurred (addresses objective 7).²³⁴

- Conduct spring telemetry surveys (including aerial support) at hibernacula to help track bats as they move into their summer habitats and identify new colonies.
- Conduct summer P/A surveys in targeted areas identified by local field offices to help identify new maternity colonies. Acoustic surveys can be used to identify areas with high bat activity; however, follow-up netting and radio telemetry must be conducted in order to find new roost trees.

4.6.4 Calculating Mitigation Offsets

Mitigation ratios to offset tree clearing impacts are calculated based on location, percent forest cover within the county of impact, and timing of proposed clearing activities (Table 3). These ratios are considered fixed and will be applied consistently throughout the Plan Area. Actions that result in greater impacts to the Covered Species and their important habitats are associated with similarly greater mitigation requirements. The ratios in Table 3 consider the quality and quantity of summer or spring staging/fall swarming habitat being impacted and mitigate the associated incidental take accordingly. The upper and lower mitigation ratios in Table 3 were calculated first and considered the following: (1) distance from documented and undocumented suitable summer and spring staging/fall swarming habitats and project proximity to active road/rail edge;²³⁵(2) the timing of the habitat removal (i.e., active season vs. inactive season); and (3) percent forest cover/habitat availability (i.e., less habitat equals increase risk to fitness of a maternity colony). Multipliers were then adjusted by rounding to the nearest quarter to account

²³² Newly identified hibernacula within the proposed project Permit Area will be subject to the avoidance measures described in HIB CM 1. If the Applicant cannot implement HIB CM 1 the project is not eligible to be covered by this GCP.

²³³ See: <https://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>.

²³⁴ Newly identified maternity roosts within the proposed Permit Area will be subject to SUMMER CM 1. If the Applicant cannot implement SUMMER CM 1 the project is not eligible to be covered by this GCP.

²³⁵ The Service chose to base mitigation using distance from active road/rail edges as the majority of routine development projects that may be covered by the GCP will be in proximity to these transportation features and is consistent with other programmatic mitigation approaches.

for the increase/decrease in impacts on the species. These upper and lower mitigation ratios were chosen based upon the nature of the covered activities and general quality of habitat within 0-100 feet of active road/rail edge. Although maternity roosts may be present with 0-100 feet of active road/rail, this habitat is often modified/disturbed by frequent stressors such as maintenance mowing, noise, lighting, and vibrations, and is less likely to provide suitable roosting habitat for the Covered Species. Moreover, these multipliers are consistent with other Service approved mitigation approaches across the range of the Covered Species.²³⁶

Mitigation does not have to be “in-kind” (e.g., impacts resulting from removal of summer habitat does not require offsets of summer habitat) because this GCP prioritizes the recovery-focused conservation needs for each of the Covered Species. Table 4 below describes how to calculate total mitigation offsets.

²³⁶ An example of an existing programmatic effort where a similar mitigation approach is used can be found here: <http://www.fws.gov/sites/default/files/documents/programmatic-biological-opinion-for-transportation-projects-2018-02-05.pdf>.

Table 3. Mitigation ratios for tree removal (regardless of whether one or all Covered Species are impacted).

Location of Proposed Tree Clearing (For <u>linear</u> and <u>nonlinear</u> Covered Activities)	County-Wide Forest Cover < 50%		County Wide Forest Cover ≥ 50%	
	What time of year will clearing occur?		What time of year will clearing occur?	
	Active season*	Inactive season*	Active season*	Inactive*
Entirely within 0-100 feet edge of active road/rail, <i>Project site has not been surveyed but contains suitable summer or spring staging/fall swarming habitat around unsurveyed portals</i>	1.5	0**	1.25	0**
Entirely within 0-100 feet edge of active road/rail, <i>within known home range >1 mile from documented roosts</i>	1.75	1.25	1.5	1
Entirely within 0-100 feet edge of active road/rail, <i><1 mile from documented roosts</i>	2	1.5	1.75	1.25
>100 feet edge of active road/rail, <i>Within known home range >1 mile from documented roosts²³⁷ OR summer habitat (unsurveyed suitable habitat or anywhere in buffers of captures/detection)</i>	2	1.5	1.75	1.25
>100 feet edge of active road/rail, <i><1 mile from documented roosts</i>	2.25	1.75	2	1.5
>100 feet edge of active road/rail, <i>documented spring staging/fall swarming habitat</i>	NA***	1.5	NA	1.25

* Coordinate with the local field office for active/inactive season tree removal dates.

** Incidental take is not reasonably certain to occur; therefore, no take is authorized and no mitigation is needed.

***NA means that the time of year category for projects >100 feet from the edge of active roads/rails are not covered by the GCP and additional coordination with the local FO will be needed.

²³⁷ Coordinate with local field office to determine extent of known home range.

Table 4. Mitigation, monitoring, and adaptive management requirements.

Mitigation Measure	Mitigation Amount	Monitoring/Adaptive Management (Section 4.7)
<u>Conservation Bank credit purchase or In Lieu Fee Program</u>	(acres of impact) (ratio from Table 3) = Total offset in acres* Credit costs are determined by the third-party Conservation Bank Sponsor or ILF Program Sponsor and are the responsibility of the Permittee	Monitoring and adaptive management are implemented by the approved conservation bank entity or ILF Program Sponsor in accordance with the terms of those agreements. ²³⁸
<u>Permittee-Responsible Mitigation</u> for spring, summer, fall habitat protection (or restoration and protection)	(acres of impact) (ratio from Table 3) = Total offset in acres* Costs are responsibility of Permittee	Monitoring and adaptive management remain the responsibility of the Permittee.

*To calculate the total offset needed in acres to complete mitigation, multiply the number of acres of impact by the mitigation ratio from Table 3.

Ratios for alternative mitigation strategies are not prescribed in this GCP, nor are they intended to be applied uniformly. Some examples of alternative mitigation strategies may include but are not limited to installation of cave gates; restoration, enhancement, or protection of hibernacula; or surveys that result in the identification of new hibernacula or roost trees for the species that are identified as Covered Species in the IPP. For instance, depending on the amount of tree removal within spring staging/fall swarming habitat, impacts could be offset with mitigation other than traditional habitat preservation, such as gating of hibernacula. Applicants wishing to pursue those activities should coordinate with the local field office to determine if these CMs are appropriate for their project type and location, and what monitoring and adaptive management requirements may apply.

Timing and Additional Considerations for PRM Post Permit Conservation Actions

Mitigation that does not secure complete biological and ecological offsets for the impacts of the taking prior to project impacts may require additional Service review and approval of a site-specific mitigation and restoration plan and additional funding assurances. Tables 5-8 outline considerations related to timing and other requirements that apply to PRM proposals that are expected to increase or accrue ecological or habitat values after Permit issuance to meet GCP mitigation standards. Refer to GCP section 4.6.3 above for specific details on Service priority mitigation projects.

²³⁸ The Service must confirm the use of a particular Conservation Bank or ILF Program is applicable to the mitigation obligation of a given project. Consult with the Service prior to purchasing credits from either type of third-party mitigation provider.

Table 5. Timing and considerations for PRM for habitat protection, restoration, and enhancement.

Timing	Actions
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	The property intended to provide mitigation through habitat protection/restoration must be identified and approved by the Service as an acceptable mitigation site for the project.
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	If not owned or controlled by the Applicant, the Applicant will provide the Service with a legally binding and enforceable written agreement to purchase, or an option to purchase, the fee title to or a permanent conservation easement on the property to demonstrate the Applicant's right and ability to implement the mitigation.
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	Funding assurances are in place for any restoration, management, and monitoring.
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	If ownership of the approved site will differ during or after the term of the permit, circumstances must be discussed with the Service in advance.
<u>Prior to or concurrent with</u> issuance of the Permit	An approved third-party easement holder shall be agreed upon.
<u>Prior to or concurrent with</u> issuance of the Permit	The terms of the proposed easement shall be settled and approved.
<u>Prior to or concurrent with</u> issuance of the Permit	Any applicable restoration/long-term management and monitoring plans shall be finalized and approved.
<u>Within 90 days of Permit issuance</u> and prior to any take of the Covered Species	Completion of the property transaction and/or recording the easement shall be completed within 90 days of Permit issuance. ²³⁹ This allows for various State and local requirements and timeframes associated with the purchase and protection of land. In all cases, however, finalization of the transaction and recording must occur prior to any take of the Covered Species.
<u>After</u> Permit issuance	Any restoration/long-term management and monitoring activities shall occur according to the Service-approved plan.

Note: The authorization of incidental take shall be automatically suspended by operation of the Permit conditions until the transaction and recording have been completed, and at any time required activities (e.g., restoration or long-term management and monitoring) or other obligations (e.g., financial assurances) are not undertaken or provided in accordance with the Service-approved plan.

²³⁹ Unless an extension has been previously agreed to by the Service. Additional assurances may be required where extensions are requested.

Table 6. Timing and considerations for PRM for restoration/enhancement of known or potentially suitable hibernacula.

Timing	Actions
<u>Prior to or concurrent with Permit issuance</u>	Service-approved restoration/enhancement plans, and contractors/contracts shall be in place.
<u>Prior to or concurrent with Permit issuance</u>	Funding assurances are in place for initial restoration, ongoing monitoring and adaptive management.
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	Hibernacula restoration/enhancement activities shall be implemented no later than the first bat active season after Permit issuance. This allows for Permit issuance during winter when projects cannot be conducted without disturbing bats.
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	Monitoring that documents occupancy by the Covered Species identified in the IPP after restoration is required as a condition of credit generation for restored hibernacula sites. If the Covered Species identified in the IPP are not documented during monitoring, conservation banks, ILF or another PRM mitigation option must be designated in the IPP as a follow-on measure and will need to occur prior to any activities that have the potential to result in take.
<u>After</u> Permit issuance	Additional monitoring and adaptive management activities shall occur according to the Service-approved plan.

Note: Only one Permittee will be credited mitigation for a hibernacula restoration/enhancement project. This will only count as mitigation for impacts associated with one permitted project. For example, under this PRM mitigation option, a Permittee may not use a single hibernaculum restoration project to compensate for take associated with the permitted project and additional future projects that have yet to be permitted.

Table 7. Timing and considerations for PRM for hibernacula gating.

Timing	Actions
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	Service-approved plans and contractors/contracts shall be in place.
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	Generally, additional funding assurances for the gating activity are not required as the contracts will be in place prior to Permit issuance. However, funding assurances are required for monitoring and adaptive management and may be needed with respect to the gating in limited circumstances.
<u>Prior to or after</u> Permit issuance	Gates shall be installed no later than the first bat active season after Permit issuance. This allows for Permit issuance during winter when gating projects cannot be conducted without disturbing bats.
<u>After</u> Permit issuance	Monitoring and adaptive management activities shall occur according to the Service-approved plan.

Note: Only one Permittee will be credited mitigation for a hibernaculum gating project. This will only count as mitigation for impacts associated with one permitted project. For example, under this PRM mitigation option, a Permittee may not use a single hibernaculum gating project to compensate for take associated with the permitted project and additional future projects that have yet to be permitted.

Table 8. Timing and considerations for PRM surveys²⁴⁰ to find new hibernacula or roosts.

Timing	Actions
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	All surveys shall be conducted prior to any take occurring and (e.g., summer P/A, hibernacula surveys) in accordance with the most recent Service-issued survey guidance. ²⁴¹
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	No funding assurances are needed given the timing of the action.
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	Surveys can be conducted within the broader Plan Area as well as directly within the Permit Area.
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	Results of any surveys conducted within the Permit Area will inform final project design. Results must be shared with the Service.
<u>Prior</u> to the onset of any activities that have the potential to result in take of the Covered Species	Surveys can only be credited as mitigation if new, occupied hibernacula/roosts for the Covered Species are identified. These areas could then be targeted for priority protection in the future. If the Covered Species identified in the IPP are not captured/detected during surveys, conservation banks, ILF or other PRM mitigation option must be designated in the IPP as a follow-on measure and will need to occur prior to any impacts.
<u>After</u> Permit issuance	No additional monitoring or adaptive management is needed.

4.7 Monitoring and Adaptive Management

4.7.1 Monitoring

Regulation requires monitoring as a component of the Permit process and serves to document project effects on the Covered Species, Permittee compliance with Permit terms and conditions, and the effectiveness of CMs in achieving GCP goals. Monitoring results will be included in an annual report(s) submitted to the Service.

4.7.1.1 Effects Monitoring

Effects monitoring documents the project’s effects on the Covered Species, including the amount of take that occurred during that monitoring period and cumulatively from project initiation.

²⁴⁰ Species surveys are a first step in identifying, assessing, protecting and enhancing potential hibernacula or maternity colonies.

²⁴¹ See section 4.6.3, Priority Action 3. Approval of survey plans by the Service is required.

4.7.1.2 Compliance Monitoring

Compliance monitoring documents implementation of the terms and conditions for each individually issued Permit. Compliance monitoring also documents that all minimization and mitigation measures, and other Permittee commitments, are completed as planned. All Permittees will document compliance monitoring results as required in the terms and conditions of their Permits.

4.7.1.3 Effectiveness Monitoring

Effectiveness monitoring documents whether the results of the GCP conservation program are consistent with the assumptions and predictions made when the GCP was developed and approved. Effectiveness monitoring provides the data needed for the Service to evaluate whether the biological goals and objectives of the GCP are being achieved.

Effectiveness monitoring assesses the ecological success of the Permit. Specifically, it evaluates progress towards meeting biological goals and objectives, assessing whether the conservation strategy is effective at minimizing and mitigating effects, and the need to modify or adjust the conservation strategy to achieve the GCP goals.

Effectiveness monitoring and reporting for conservation banks and ILF Programs are implemented by the conservation bank entity or ILF sponsor as outlined in the Service-approved and legally binding agreements that establish and authorize these mitigation sites. Permittees that choose to mitigate by purchasing credits from an approved conservation bank or paying into an approved ILF Program²⁴² are relieved of individual effectiveness monitoring and reporting requirements because these obligations are assumed by the relevant bank and program sponsors; however, a Permittee remains responsible for meeting the goals and objectives of the Permit.

Permittees that choose PRM programs retain responsibility for effectiveness monitoring and reporting. The specific effectiveness monitoring and annual reporting requirements for individual PRM programs will be described in the Applicant's IPP and implementation will be a condition of issued Permits that choose this mitigation pathway. Financial assurances to ensure implementation of monitoring and reporting may also be necessary. PRM monitoring programs will be designed to collect data and articulate thresholds that trigger specified adaptive management actions intended to improve management of the species and their habitat. Permittees agree to allow Service staff, or other persons designated by the Service, to access the Permit Area and any mitigation properties for the purpose of monitoring plan implementation for the Covered Species.²⁴³

4.7.2 Adaptive Management

Service policy defines adaptive management as a formal, structured approach for addressing the uncertainty inherent in all natural systems. It involves examining alternative strategies for meeting measurable biological goals and objectives, and then, if necessary, adjusting future

²⁴² The Service must confirm with the Applicant in advance that the selected bank or ILF program may be used to mitigate the project.

²⁴³ 50 CFR 13.47

conservation, management, monitoring, or mitigation actions based upon what is learned. Adaptive management plans are required for conservation plans where there is substantial uncertainty regarding the effects of the action on the Covered Species or the efficacy of minimization and mitigation measures.

Adaptive management strategies identify the range of possible operating conservation program adjustments that could be implemented as new information or data are obtained. This range defines the limits of what resource commitments may be required of the Permittee. The adaptive management strategy should also identify specific thresholds that trigger implementation of a particular adaptive management strategy or open reassessment of an adopted strategy. The application should identify specific actions that must be taken, not merely provide a general review of strategies. Prior to Permit issuance, there must be a clear understanding and agreement between the Service and the Applicant as to the range of adjustments to the management actions that might be required as a result of any adaptive management provisions. This process will enable the Applicant to assess the potential economic impacts of adjustments before agreeing to the GCP.

Adaptive management for this GCP is focused on the uncertainty of ongoing management of Covered Species threatened by several factors, most notably the fungus that causes WNS, and on the management of mitigation sites.

4.7.2.1 In Lieu Fee or Conservation Banks

Conservation banks and ILF Program Sponsors are responsible for monitoring and implementing adaptive management programs as outlined in the Service-approved and legally binding agreements that establish and authorize these mitigation sites. Permittees that choose to mitigate by purchasing credits from an approved conservation bank or paying into an approved ILF Program²⁴⁴ are relieved of individual adaptive management requirements because monitoring and management of these mitigation sites are an ongoing obligation of the bank and ILF Program sponsors, but the Permittee is still responsible for meeting the goals and objectives of the ITP.

4.7.2.2 Permittee Responsible Mitigation

Management of PRM sites requires monitoring to test whether systems are responding to management actions and implementing adaptive management procedures to maintain or improve the ecological values that the mitigation sites are intended to protect. Adaptive management triggers and responses will be developed by Applicants in cooperation with the Service and documented in a monitoring and adaptive management plan for each PRM site.

Tables 9-11 provide recommended mitigation monitoring and adaptive management responses and may be modified to best address specific mitigation site needs, recorded as part of an Applicant's IPP, and approved by the Service prior to Permit issuance. This list is not intended to be exhaustive and serves to demonstrate the type of mitigation-focused management triggers and

²⁴⁴ The Service must confirm with the Applicant in advance that the selected bank or ILF program may be used to mitigate the project.

responses that should be developed by an Applicant with the technical assistance of the Service as part of any PRM proposal.

Table 9. Recommended PRM for hibernacula gating monitoring, adaptive management triggers, and responses.

Monitoring	Trigger	Response
<p>Monitor gate during first fall season after installation to ensure bats can fly freely through the gate.</p> <p>Monitor for at least two nights (bat activity must be observed at the gate) to ensure bat flight is not impeded and bats are entering and exiting hibernacula freely.</p>	<p>Bats do not fly freely through gate.</p>	<p>Permittee modifies gate design immediately and follows up with monitoring again during the first fall season after modification. If bats do not fly freely through gate after the modification, subsequent monitoring shall occur during the following fall season. Monitoring may need to continue in subsequent spring/fall seasons until bats are flying freely.</p>
<p>Monitor gate periodically (i.e., biennially) to ensure it is functioning properly.</p>	<p>Gate is no longer functioning properly (e.g., damaged or destroyed, or blocked by debris).</p>	<p>Permittee repairs/restores gate, removes debris. Follow-up with monitoring to determine if bats are flying freely through gate. Monitoring may need to continue in subsequent spring/fall seasons until bats are flying freely.</p>

Note: Gates require long term maintenance (i.e., in perpetuity) to ensure the gate is functioning properly and bats are able to fly freely through the opening and to ensure the gates are not damaged or destroyed by vandalism or blocked by debris.

Table 10. Recommended PRM for hibernacula restoration adaptive management triggers and responses.

Trigger	Response
<p>Unanticipated change in hibernacula microclimate after initially achieving desired results.</p>	<p>Identify source of change and implement restoration techniques (e.g., manipulate openings to achieve desired air flow).</p>

Table 11. Recommended PRM for summer and/or spring staging/fall swarming habitat restoration adaptive management triggers and responses.

Likely Trigger	Response
Poor tree planting success (i.e., less than 80 percent of desired tree plantings survive after 10 years).	Replant vegetation, with different native tree species and/or planting techniques, if appropriate.
Targeted invasive plant species exceed identified maximum extent of permissible areal coverage.	Manage invasive plant species to reduce percent areal cover of undesirable vegetation below maximum permissible extent, including use of different management methods, if appropriate.
Artificial roost is no longer usable (e.g., fell over, vandalized, insect damage).	Repair/restore roost, remove insect hives/nests.

Note: Details of adaptive management and monitoring will be built into a site-specific management plan. The Service has identified likely triggers and responses; however, actual percentages/triggers will be developed within the site-specific plan.

4.7.3 Reporting

Permittees will submit an annual report through their individual secure ePermits portal. The report will include all information specified in GCP appendix H. The due date of an annual report is automatically defined by the ePermits system and will be listed on each Permit.

4.8 Changed and Unforeseen Circumstances

The “*No Surprises Rule*”²⁴⁵ provides assurances to Permittees that, as long as the Permittee is properly implementing the GCP, no additional commitment of resources including financial compensation will be required with respect to the Covered Species, and no restrictions on the use of resources will be imposed beyond those specified in the GCP without the consent of the Permittee. Generally, the “No Surprises” provisions are addressed through two components, changed circumstances and unforeseen circumstances.

4.8.1 Changed Circumstances

Changed circumstances are defined in the No Surprises Rule as “changes in circumstances affecting a species or geographic area covered by [an HCP] that can reasonably be anticipated by [plan] developers and the Service and that can be planned for (e.g., the listing of new species, or a fire or other natural catastrophic event in areas prone to such events).”²⁴⁶ If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances, and such measures were provided for in the GCP, the Permittee will be required to implement such measures.²⁴⁷

²⁴⁵ 63 FR 8859; codified at 50 CFR 17.3, 17.22(b)(5), 17.32(b)(5)

²⁴⁶ 50 CFR 17.3

²⁴⁷ 50 CFR 17.22(b)(5)(i), 17.32(b)(5)(i)

The GCP identifies three potential changed circumstances and responses that will apply to all projects permitted under this GCP. In doing so, reasonably anticipated potential changes have been identified and specific strategies or protocols for dealing with them have been incorporated, thus facilitating adjustments to the conservation program without requiring amendment of the GCP. If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances, and such measures were not provided for in the IPP, the Service will not require any additional measures beyond those provided for in the IPP without the consent of the Permittee, provided the IPP is being properly implemented.²⁴⁸

4.8.1.1 GCP Changed Circumstances

Given the Permit term associated with this GCP, the Service has identified the following reasonably foreseeable changed circumstances that warrant funding and planning considerations for participating projects in tables 12-14:

Table 12. Change in active season, hibernation, or migration dates within the Plan Area.

Trigger	Response
<p>The Service notifies a Permittee that we have determined that the Covered Species phenology (e.g., Covered Species emerge in spring earlier in the year) has changed resulting in altering the timing of CMs (e.g., tree clearing time of year restrictions).</p>	<p>Following such notification, the Permittee will implement the revised CMs if they are given at least 6 months prior notification to the start of the next permissible tree clearing window. For example, if tree clearing was originally proposed to start August 16 or after and the core maternity season window has changed, the Service must give notification by February 15 for this to be considered a changed circumstance for which the Permittee must implement the response action.</p>

²⁴⁸ 50 CFR 17.22(b)(5)(ii), 17.32(b)(5)(ii)

Table 13. New species listings within the Plan Area.

Trigger	Response
The Service notifies a Permittee that a non-Covered Species that is reasonably certain to be subjected to take resulting from their permitted activities, has been proposed for listing, or is listed as threatened or endangered under the ESA.	Following such notification, the Permittee will implement CMs to avoid take of that species due to project impacts. Applicants that cannot avoid incidental take of a newly proposed or listed species should contact their local field office (see appendix A) to seek technical assistance and consider whether incidental take coverage is needed.

Table 14. New mitigation strategies within the Plan Area.

Trigger	Response
The Service notifies a Permittee that a new mitigation method has been developed, particularly specific to addressing threats from WNS (research/vaccines) that could further the recovery of the Covered Species.	Following such notification, the Permittee can consider this mitigation option which can be used to offset the impacts of the taking.

4.8.2 Unforeseen Circumstances

Unforeseen circumstances are defined as changes in circumstances affecting a Covered Species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and the Service at the time of the negotiation and development of the plan and that result in a substantial and adverse change in the status of the Covered Species.²⁴⁹

The Service bears the burden of demonstrating that unforeseen circumstances exist using the best available scientific and commercial data available while considering certain factors.²⁵⁰ In deciding whether unforeseen circumstances exist, the Service shall consider, but not be limited to, the following factors:

1. the size of the current range of the affected species;
2. the percentage of the range adversely affected by the Covered Activities;
3. the percentage of the range that has been conserved by the conservation plan;
4. the ecological significance of that portion of the range affected by the conservation plan;
5. the level of knowledge about the affected species and the degree of specificity of the conservation program for that species under the conservation plan; and

²⁴⁹ 50 CFR 17.3

²⁵⁰ 50 CFR 17.22(b)(5)(iii)(C)

6. whether failure to adopt additional CMs would appreciably reduce the likelihood of survival and recovery of the species in the wild.

If unforeseen circumstances arise, the Service will not require the commitment of additional land, water or financial compensation or additional restrictions on the use of land, water or other natural resources otherwise available for development or use under the original terms of the conservation plan and beyond the level otherwise agreed upon for the species covered by the conservation plan without the consent of the Permittee.²⁵¹ If additional conservation and mitigation measures are deemed necessary to respond to unforeseen circumstances, the Service may require additional measures of the Permittee where the conservation plan is being properly implemented only if such measures are limited to modifications within conserved habitat areas, if any, or to the operating conservation program for the affected Covered Species and maintain the original terms of the plan to the maximum extent possible.²⁵² Additional conservation and mitigation measures will not involve the commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources otherwise available for development or use under the original terms of the conservation plan without the consent of the Permittee.

Notwithstanding these assurances, nothing in the No Surprises Rule will be construed to limit or constrain the Service, any Federal agency, or a private entity, from taking additional actions, at its own expense, to protect or conserve a species included in a conservation plan.²⁵³

5.0 Funding

ESA section 10(a)(2)(A)(ii) requires that funding will be available to implement actions that will be enacted to minimize and mitigate the specified impacts of the taking. The ESA also requires that the Service must find that “the Applicant will ensure that adequate funding for the plan will be provided” (section 10(a)(2)(B)(iii)).

Therefore, Applicants must demonstrate adequate funding sources to fully implement the actions described in this GCP and their IPP. Expenses related to these activities are the sole responsibility of the Permittee. Failure to commit appropriate funding prior to approval are grounds for denial. If funding obligations are not met after the Permit is issued, the Service may revoke or suspend an existing Permit, and this action will weigh in any decision to issue a Permit to the Permittee for any future project. Permittees unable to meet the financial requirements described here may not meet qualifications for approval of IPPs and should contact the local field office for additional guidance or potential approval of alternative funding mechanisms.

Applicants must ensure that adequate funding sources for implementing minimization and mitigation measures, monitoring and adaptive management, actions to be taken for changed circumstances and unforeseen events, alternatives to the proposed project, and other measures are included in their IPP (chapter 4). Funding for mitigation obligations is directly related to the mitigation option(s) selected by the Applicant. If an Applicant chooses to fulfill mitigation requirements through the purchase of credits from a Service-approved conservation bank, the

²⁵¹ 50 CFR 17.22(b)(5)(iii)(A)

²⁵² 50 CFR 17.22(b)(5)(iii)(B)

²⁵³ 50 CFR 17.22(b)(6)

conservation bank will be responsible for the management of the mitigation lands secured through the purchase of bank credits and the credit purchase agreement will govern the Permittee's mitigation-related funding obligations. For mitigation associated with conservation banks, documentation of credit purchase must be provided to the Service prior to initiation of impacts. If an Applicant chooses to fulfill mitigation requirements from a Service-approved ILF program, the ILF Program Sponsor will be responsible for the management of the mitigation lands secured. If PRM mitigation lands are the selected mitigation method, these lands must be acquired, have completed management plans and perpetual protection (e.g., a conservation easement), and be approved by the Service prior to the initiation of impacts. Applicants must submit their plans for mitigation (i.e., type, location, and status) in their IPP.

Any mitigation which will occur after Permit issuance requires appropriate financial assurances be in place prior to or concurrent with Permit issuance. Details regarding the required timing of mitigation are described in chapter 4.

6.0 GCP Administration

It may be necessary during the duration of the GCP for the Service or Permittees to clarify specific provisions or to address issues that may arise with respect to administration of the processes or the precise meaning or intent of the language within the GCP and the associated documents. This section describes processes to address administrative changes, amendments, renewal of the GCP or individual Permits, steps for transferring Permits, and issues related to Permit suspension, revocation, termination, abandonment, or relinquishment.

6.1 Administrative Changes to Individual Project Plans and/or the GCP

Administrative changes consist of revisions of a minor or technical nature such that the net impacts on the Covered Species and resulting levels of take are not increased over those analyzed and described in the GCP and the Service's associated decision documents. Administrative changes generally consist of clarifications, interpretations, corrections, or provision of missing details. Such administrative changes do not change the substantive provisions of any of the documents; rather, they explain and make more precise the intent of existing provisions. Examples include, but are not limited to:

- corrections of typographical, grammatical, or similar editing errors that do not change the intended meaning;
- corrections to maps or exhibits to correct errors in mapping;
- minor revisions to monitoring or reporting procedures; and
- minor modifications to Covered Activities in response to evolving technologies (provided that impacts associated with such activities will not exceed the authorized level of take and are compliant with other local and State laws and regulations).

Permittees may propose an administrative change or clarification to their IPP by providing written notice to the local field office. Such notice should include a statement of the reason for the proposed change and an analysis of environmental effects, if any, including any effects of the Covered Activities, effects to the Covered Species, and any other information required by law.

The Service cannot approve administrative changes or clarifications that result in take not analyzed in the GCP and associated compliance documents or that would result in adverse effects on the environment. Administrative changes will be memorialized in writing and archived in the GCP project files. Administrative changes and clarifications do not require additional public review and comment.

6.2 Amendments to Individual Project Plans and/or the GCP

Any GCP changes that result in impacts to the Covered Species not previously analyzed, adding a newly listed species as a Covered Species to the GCP, expansion of the Plan Area to cover additional states, or the addition of Covered Activities, will be processed as an amendment in accordance with the provisions of the ESA and regulations at 50 CFR Parts 13 and 17. These types of substantive amendments will be subject to appropriate environmental review under the provisions of the NEPA, including public comment. GCP amendments may be implemented by the Service following publication of the approved, amended GCP. Following completion of an amendment, all future Permits would contain the modifications contained within the amendment. Previously issued Permits will not be required to incorporate any changes caused by an amendment, unless a Permittee voluntarily chooses to modify their Permit.

6.2.1 Amendments to Individual Project Plans and/or Permits

To propose an amendment to an IPP without amending a Permit, Permittees must submit to the local field office, in writing, a description of:

1. the proposed amendment;
2. an explanation of why the amendment is necessary or desirable; and
3. an explanation of why the Permittee believes the effects of the proposal are not different from those described in the original IPP and authorized by the Permit.

If the Service concurs with the proposed amendment, then it will authorize the amendment in writing, and the amendment will be considered effective upon the date of the written authorization from the Service.

Amendments to individual Permits may be required in some circumstances. For example, an amendment would be required for any modification of the Covered Activities that is expected to cause take of the Covered Species not analyzed or authorized in the original Permit or if the authorized amount of take is insufficient for the Permittee's need. To propose an amendment to an IPP and amend their Permit, Permittees must submit to the Service, in writing, a description of the proposed amendment and an explanation of why the amendment is necessary or desirable. These amendments must be completed prior to the activities causing take.

If a Permittee needs to expand the Permit Area for new projects, or unanticipated phasing of a project, that results in take of the Covered Species not considered by this GCP, the project no longer meets the GCP framework of eligibility requirements. Therefore, the Service recommends that Permittees apply for a separate Permit and develop a separate HCP in those circumstances (see appendix G).

6.3 GCP Renewal

Upon approval, this GCP will be available for adoption and use by eligible Project Proponents for a period of 10 years, unless amended or renewed. If the Service chooses to renew the GCP, the plan will be updated as needed to ensure that all applicable statutory and regulatory requirements in force at the time of the renewal are addressed. Analyses, including those in the GCP, the NEPA document, and the intra-Service section 7 consultation will be revised as needed to incorporate any new information. Renewal will require public notification, review, and comment period prior to approval.

6.4 Permit Renewal

Permits issued through the streamlined GCP process may be authorized for up to 5 years. Therefore, Project Proponents will have up to 5 years to complete their projects, even if the Permit is issued in the final year (i.e., year 10) of the GCP.

If a Project Proponent is unable to complete their Covered Activities during the duration of their Permit, they can request a Permit renewal (for up to 5 additional years) from the Service as long as the GCP remains in effect. Permit renewals require the Permittee and the Service to satisfy all the requirements pertaining to Permit renewals and applications.²⁵⁴

To renew a Permit issued under this plan, the Permittee will submit to the local field office, in writing:

- a request to renew the Permit with reference to the original Permit number;
- certification that all statements and information provided in the original IPP, together with any approved amendments, are still true and correct, and inclusion of a list of changes;
- a description of any take that has occurred under the existing Permit; and
- a description of any portions of the project still to be completed, if applicable, or what activities under the original Permit the renewal is intended to cover.

If the Service concurs with the information provided in the request, it will renew the Permit consistent with required regulatory procedures.²⁵⁵ If the Service receives a renewal request at least 30 days prior to the original Permit expiration date, the Permit will remain valid while the renewal is being processed. However, the Applicant may not take listed species beyond the quantity authorized by the original Permit. If the Applicant fails to file a renewal request within 30 days prior to the Permit expiration date, the Permit will become invalid upon expiration. The Applicant must have complied with all Permit terms and conditions including annual reporting requirements to qualify for a Permit renewal.

6.5 Permit Transfer

Permit transfers are usually the result of an exchange in ownership of the land covered by a Permit. A new owner that wishes to receive the benefits of the Permit will assume the

²⁵⁴ 50 CFR 13.12(a)(5); 50 CFR 13.21

²⁵⁵ 50 CFR 13.22

responsibilities associated with implementing the terms and conditions of the Permit. An assumption agreement that outlines the roles and responsibilities of all the parties including the Service is a key component of a Permit transfer. An assumption agreement should address any outstanding obligations and specify how they will be completed. An assumption agreement, at its simplest, is a joint submittal by the transferor and transferee. The Service's Permit transfer regulations are found at 50 CFR 13.25.

A Permit transfer is a distinct action compared to an amendment or renewal. Nevertheless, the administrative process to transfer a Permit is effectively the same as for an amendment, but it does not require *Federal Register* notice until finalized. This is true even for partial transfers where a new Permit is issued to the new partial owner of the original project. In a complete transfer, an amended Permit is issued to the new owner. In a partial transfer, an amended Permit is issued to the original Permittee and a new Permit is issued to the new owner.

Any Permit issued as a result of a partial or full transfer will retain the expiration date of the original Permit. The transferee may request renewal to alter the expiration date.

To request a Permit transfer, the transferee establishes an account through the Service's online ePermits²⁵⁶ portal, submits an application requesting a transfer of a specific Permit, and submits copies of the executed assumption agreement. Transferees must meet all the qualifications required to receive a Permit, demonstrate the legal ability to perform the authorized project and the capacity to implement the Permit or the portion for which they are assuming responsibility, and provide funding assurances. There is no application fee for Permit transfer actions that rely on the application package submitted for the original Permit.

Service regulations authorize certain successors of an original Permittee to carry out a permitted activity for the remainder of the Permit term in cases of foreclosure, bankruptcy, inheritance by family members, etc.²⁵⁷ To obtain authorization, the successor must notify the Service within 90 days of the date the successor begins to carry out the permitted activity and obtain written endorsement from the Service. To authorize continuance of the Permit, the Service is required to determine that the successor meets the qualifications to hold the Permit, can implement the Permit, including all outstanding minimization and mitigation measures, has provided adequate assurances of funding, and has provided any other relevant information requested. Transfer of a Permit in accordance with 50 CFR 13.25 satisfies the "endorsement" requirement. There is no application fee for Permit transfer actions due to succession that rely on the application package submitted for the original Permit.

6.6 Permit Suspension, Revocation, or Termination

Permittees receive No Surprise Rule assurances if they implement the Permit and the GCP in accordance with their terms. Each Permit issued under the GCP will establish that any action inconsistent with the terms of the Permit and IPP and/or failure to carry out required obligations will result in automatic suspension of authorized incidental take by operation of its terms until such time as the deficiency is resolved. If a Permittee becomes aware of a deficiency in its performance, the Permittee shall notify the Service immediately and work diligently to remedy

²⁵⁶ https://fwsepermits.servicenowservices.com/nav_to.do?uri=%2Fhome_splash.do%3Fsysparm_direct%3Dtrue.

²⁵⁷ 50 CFR 13.24

the deficiency. If the Service becomes aware of a deficiency in implementation, either of the project or the mitigation, of activities not covered by the Permit, or of take in excess of that authorized, the Service will notify the Permittee and the parties shall discuss potential avenues to resolve the concern.

If issues are not corrected, the Service will follow its standard protocols for escalating notice, administrative measures, law enforcement investigations, suspension, revocation, and civil or criminal processes, as appropriate.

A Permit may be suspended or revoked for noncompliance with Permit conditions or with any applicable laws or regulations governing the conduct of the permitted activity.²⁵⁸ Revocation can further disqualify an Applicant from receiving or exercising the privileges of a similar Permit for a period of 5 years from date of agency decision on the revocation.²⁵⁹

In addition to terms that are automatically operative as a Permit condition, criteria and processes for Permit suspension and revocation are found in general Permit regulations at 50 CFR 13.27 and 13.28, respectively. Specific criteria for revocation appear at 50 CFR 17.22(b)(8) and 17.32(b)(8).

6.7 Permit Abandonment or Relinquishment

Should a Permittee choose to terminate their Covered Activities and relinquish their Permit, the Service must meet with the Permittee to determine the appropriate courses of action. The Permittee must ensure that the mitigation required under the GCP for all the incidental take that has occurred is carried out, including any ongoing conservation funding and implementation assurances. The Service will only cancel a Permit upon determining that all outstanding minimization and mitigation measures for past take have been implemented.²⁶⁰

²⁵⁸ 50 CFR 13.27, 13.28

²⁵⁹ 50 CFR 13.21(c)(2)

²⁶⁰ 50 CFR 17.22(b)(7) and 17.32(b)(7)

7.0 References

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Appendix A. Contact Information for Local Field Offices

New York Ecological Services Field Office

3817 Luker Road

Cortland, New York 13045-9385

<https://www.fws.gov/office/new-york-ecological-services-field>
607-753-9334

Send project submissions to: fw5es_nyfo@fws.gov

Pennsylvania Ecological Services Field Office

110 Radnor Road, Suite 101

State College, Pennsylvania 16801-7987

<https://www.fws.gov/office/pennsylvania-ecological-services>
814-234-4090

Send project submissions to: IR1_ESPenn@fws.gov

West Virginia Ecological Services Field Office

6263 Appalachian Highway

Davis, West Virginia 26260-8061

<https://www.fws.gov/office/west-virginia-ecological-services>
304-866-3858

Send project submissions to: fw5_wvfo@fws.gov

Appendix B. GCP Eligibility Key

The following decision tool (hereafter eligibility key) is provided to assist Project Proponents²⁶¹ in determining if their project is eligible to participate through the streamlined Multi-Bat Species General Conservation Plan (GCP) for Routine Development Projects process for the states of New York (NY), Pennsylvania (PA), and West Virginia (WV). This GCP and the associated eligibility key only includes the Covered Species in the Plan Area. The Covered Species are the federally listed Indiana bat (*Myotis sodalis*; Endangered; IBAT) and the northern long-eared bat (*Myotis septentrionalis*; Endangered; NLEB), as well as the tricolored bat (*Perimyotis subflavus*; Proposed Endangered; TCB).

This eligibility key does not supersede the need to coordinate with Federal, state, and local resource agencies that have authority or jurisdiction over a project. This eligibility key is provided to identify eligible proposed projects and identify those that may need further coordination with U.S. Fish and Wildlife Service (Service) local field offices²⁶² in the aforementioned states to determine how best to address a Project Proponent's conservation and environmental compliance needs.

Please contact your local field office if there are questions about the application process or if you are unsure how to address the questions in this eligibility key.

Project Proponents whose selections under this eligibility key result in the conclusion that their project is not eligible to participate through the GCP should contact their local field office for technical assistance and direction on next steps. Some projects may be able to incorporate minor modifications that will allow participation, and others may require additional information or alternative approaches.

Common terminology used in this eligibility key is defined in the glossary at the beginning of the GCP.

Minor administrative changes may occur to this section and will be reflected on our GCP website.²⁶³

²⁶¹ The GCP defines a Project Proponent as a potential Applicant. For the purposes of this plan, a Project Proponent is any person planning to engage in activities within the GCP Plan Area that may result in take of a Covered Species. A Project Proponent is referred to as an Applicant at the time they submit a complete application.

"Person" is further defined in section 3(13) of the Endangered Species Act.

²⁶² See: Appendix A for contact information.

²⁶³ See: <https://www.fws.gov/project/routine-development-gcp>.

GCP Eligibility Key

- 1.0 Does the proposed project occur entirely within NY, PA, and/or WV (i.e., within the Plan Area)?

Y= Go to 1.1.

N= This GCP provides incidental take coverage for projects entirely within the Plan Area consisting of NY, PA, and WV (except for Federal lands). Project is not eligible to participate through the GCP. Please contact the local field office to request additional technical assistance for projects that extend beyond the Plan Area.

- 1.1 Is the proposed project one of the following: a residential/commercial/recreational development project, a transportation project, or a utility project described as an eligible project type in GCP section 3.4? (GCP section 3.4 provides a list of eligible project types and section 3.3 provides a list of ineligible project types)

Y= Go to 1.2.

N= This GCP provides incidental take coverage for specific project types. Other project types are **not** eligible to participate through this GCP. Please contact the local field office to request additional technical assistance.

- 1.2 Are the Covered Species the only federally listed species for which take is reasonably certain to occur as a result of the proposed project?

Y = Go to 1.3a.

N = This GCP only provides incidental take coverage for the Covered Species. Proposed projects that will result in take of other species federally listed as threatened or endangered will require additional authorization under the ESA.²⁶⁴ Please contact the local field office to request additional technical assistance.

- 1.3a Has the proposed project used the NLEB and TCB rangewide determination key (dkey) in IPaC?

Y = Go to 1.3b

N = Input your project into the NLEB and TCB rangewide dkey before returning to this eligibility key.

²⁶⁴ Refer to your Information, Planning and Consultation (IPaC) Official Species List from the Service or Pennsylvania Conservation Explorer (PACE) Tool/Pennsylvania Natural Diversity Inventory (PNDI) receipt to determine what other species may be present within your project area and coordinate with your local field office to ensure that take of those non-covered listed species is not reasonably certain to occur.

1.3b Did you receive a NLAA determination for the NLEB and/or TCB using the NLEB and/or TCB rangewide dkey?

Y = Take is not reasonably certain to occur for the NLEB and/or TCB. Go to 1.4a (resume eligibility key for applicable covered species).

N = Contact your local field office for additional technical assistance. If take of the NLEB and/or TCB is reasonably certain to occur, go to 1.4a and resume eligibility key for applicable covered species.

1.4a Is the proposed project located within 0.5-mile of a hibernaculum known to be used by IBATs, NLEBs and/or TCBs?²⁶⁵

Y = Go to 1.4b.

N = Go to 1.5a.

1.4b Are impacts to known occupied hibernacula or take of Covered Species within 0.5-mile of known occupied hibernacula reasonably certain to occur? (GCP section 4.4.1.2 provides a list of potential stressors)

Y = This GCP does **not** cover impacts to hibernacula, hibernating bats, or to suitable spring staging/fall swarming habitat within 0.5-mile of hibernacula used by the Covered Species. Project is **not** eligible to participate through the GCP. Please contact the local field office to request additional technical assistance.

N = Go to 1.5a.

1.5a Does your project area contain any caves and/or mine portals that are not currently documented as hibernacula for the Covered Species?

Y = Go to 2.

N = Go to 1.5b.

1.5b Is your project within known occupied Covered Species habitat? (spring staging/fall swarming **and/or** summer maternity)

Y = Go to 1.6b.

N = Go to 1.5c.

²⁶⁵ Please contact your local field office to determine if your proposed project is located within 0.5-mile of a known occupied hibernaculum.

1.5c Were summer presence/probable absence (P/A) surveys (using the most recent version of the Range-wide Indiana Bat and Northern Long-eared Bat Survey Guidelines²⁶⁶) conducted within the project area?

Y = Go to 3.0.

N = Go to 1.5d.

1.5d Is your project linear?²⁶⁷

Y = Go to 1.7.

N = Go to 1.6a.

1.6a Does your project require the removal of more than 25 total acres of nonlinear²⁶⁸ (e.g., residential development project, wastewater treatment plant, commercial development project) suitable summer bat habitat that has not been surveyed for bat presence?

Y = This GCP does **not** cover projects that will remove more than 25 total acres of suitable summer habitat if the habitat has not been surveyed using current Service protocols.²⁶⁹ Project is **not** eligible to participate through the GCP. Please contact the local field office to request additional technical assistance.

N = Go to 1.7.

1.6b Does your project require the removal of more than 200 acres of nonlinear occupied Covered Species habitat? (spring staging/fall swarming **and/or** summer maternity)

Y = This GCP does **not** cover projects that will remove more than 200 acres of occupied habitat for the Covered Species for nonlinear projects. Project is **not** eligible to participate through the GCP. Please contact the local field office to request additional technical assistance.

N = Go to 1.7.

²⁶⁶ See: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

²⁶⁷ The Service defines projects as linear if they are greater than 1 km in length (e.g., pipelines, roadways).

²⁶⁸ Non-linear projects can also include projects that are less than 1 km in length.

²⁶⁹ See: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

1.7 Will your project **avoid** raising any road/rail profile above the tree canopy within 1,000 feet of suitable habitat within known or assumed occupied habitat?²⁷⁰

Y = Go to 1.8.

N = This GCP does **not** cover projects that raise road or rail profiles above tree canopy height within 1,000 feet of suitable habitat. Project is **not** eligible to participate through the GCP. Please use the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and Federal Transit Authority (FTA) Programmatic Consultation for Transportation Projects determination key in IPaC²⁷¹ or contact the local field office to request additional technical assistance.

1.8 Will any known/documented foraging habitats (e.g., based on radio telemetry or acoustic surveys beyond presence/absence) or known/documented commuting/travel corridors (e.g., hedgerows, riparian buffers within summer foraging and roosting habitat) be removed or altered?

Y = Project is **not** eligible to participate through the GCP. Please contact the local field office to request additional technical assistance.

N = Go to 1.9.

1.9 Will your project **avoid** all burning of debris piles (brush piles) for vegetation removal during the active season within known or assumed occupied habitat? [Active season: Apr. 1 to Nov. 14 (PA/WV), Mar. 1 to Nov. 31 (Long Island, NY) and Apr. 1 to Sept. 30 or Apr. 1 to Oct. 31 (rest of NY)]

Y = Go to 4.0.

N = This GCP does **not** cover projects that include burning of debris or brush for vegetation removal within habitat known or assumed to be occupied during the bats' active seasons. Project is **not** eligible to participate through the GCP. Please contact the local field office to request additional technical assistance.

²⁷⁰ See: <http://www.fws.gov/sites/default/files/documents/programmatic-biological-opinion-for-transportation-projects-2018-02-05.pdf>.

²⁷¹ See: <https://ipac.ecosphere.fws.gov/>.

Hibernacula Survey Questions

2.0 Does the hibernaculum meet the criteria designating a hibernaculum as suitable for use by the Covered Species in the Service's Potential Hibernaculum Survey Guidance?²⁷²

Y = Go to 2.1a.

N = Go to 1.5b.

2.1a Were hibernacula or fall trapping²⁷³ surveys completed?

Y = Go to 2.2a.

N = Go to 2.1b.

2.1b Are project activities located within 0.5-mile of any hibernacula that were not surveyed resulting in an assumed occupied hibernaculum?

Y = Go to 2.1c.

N = Go to 1.5b.

2.1c Are impacts to assumed occupied hibernaculum or take of the Covered Species reasonably certain to occur within 0.5-mile of an assumed occupied hibernaculum?

Y = This GCP does **not** cover impacts to hibernacula, hibernating bats, or to suitable spring staging/fall swarming habitat within 0.5-mile of an assumed occupied hibernaculum. Project is **not** eligible to participate through the GCP. Please contact the local field office to request additional technical assistance.

N = Go to 1.5b.

2.2a Were the Covered Species captured/detected?

Y = Go to 2.2b.

N = Go to 1.5b.

²⁷² See: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines> (appendix H).

²⁷³ See: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines> (appendix H).

2.2b Are project activities located within 0.5-mile of the caves or portals where Covered Species were captured/detected indicating the presence of an occupied hibernaculum?

Y = Go to 2.2c.

N = Go to 1.5b.

2.2c Are impacts to the occupied hibernaculum or take of the Covered Species reasonably certain to occur?

Y = This GCP does **not** cover impacts to hibernacula or to the Covered Species within 0.5-mile of a hibernaculum. Project is **not** eligible to participate through the GCP. Please contact the local field office to request additional technical assistance.

N = Go to 1.5b.

Presence/Probable Absence Survey Questions

3.0 Were any of the Covered Species detected/captured during surveys?

Y = Go to 1.6b.

N = Take is not reasonably certain to occur; GCP is not applicable.

Occupied/Assumed Occupied Habitat Removal Questions (Active Season)

4.0 Does the project involve any active season tree clearing, trimming, topping, pruning, and/or limbing of occupied or assumed occupied **spring staging/fall swarming habitat**? [Active season: Apr. 1 to Nov. 14 (PA/WV), Mar. 1 to Nov. 31 (Long Island, NY), and Apr. 1 to Sept. 30 or Apr. 1 to Oct 31 (rest of NY)]

Y = Project is **not** eligible to participate through the GCP. Please contact the local field office to request additional technical assistance.

N = Go to 4.1.

4.1 Does the project involve any active season tree removal, trimming, topping, pruning, and/or limbing of occupied or assumed occupied **summer habitat**? [Active season: Apr. 1 to Nov. 14 (PA/WV), Mar. 1 to Nov. 31 (Long Island, NY) and Apr. 1 to Sept. 30 or Apr. 1 to Oct. 31 (rest of NY)]

Y = Go to 4.2.

N = Go to 5.0.

4.2 Does the project propose to remove suitable documented roosts or trees within 150-feet of documented roosts?

Y = Project is **not** eligible to participate through the GCP. Please contact the local field office to request additional technical assistance.

N = Go to 4.3.

4.3 Will active season tree removal of occupied or assumed occupied summer habitat occur before August 16?

Y = Project is **not** eligible to participate through the GCP. Please contact the local field office to request additional technical assistance.

N = Go to 4.4.

4.4 Will the project remove 10 or fewer trees?

Y = Go to 4.5.

N = Coordinate with local field office, determine if take is reasonably certain to occur. If yes, project is eligible for use of the GCP.

4.5 Were emergence surveys²⁷⁴ conducted?

Y = Go to 4.6.

N = Coordinate with local field office, determine if take is reasonably certain to occur. If yes, project is eligible for use of the GCP.

4.6 Were any bats observed using the tree(s) proposed for removal?

Y = Project is **not** eligible to participate through the GCP.²⁷⁵ Please contact the local field office to request additional technical assistance.

N = Take is not reasonably certain to occur; GCP is not applicable.

²⁷⁴ See: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines> (appendix E).

²⁷⁵ Project sponsor may become eligible for the GCP if additional surveys confirm that the observed bats were not the Covered Species. Coordinate with your local field office to determine the appropriate type of survey (e.g., acoustic, mist-netting, telemetry studies) and level of effort for your particular project.

Occupied or Assumed Occupied Habitat Removal Questions (Inactive Season)

- 5.0 Is inactive season tree removal proposed within 1.0-mile of a known roost(s)? [Inactive season: Nov. 15 to Mar. 31 (PA/WV), Dec. 1 to Feb. 28 (Long Island, NY) and Oct. 1 to Mar. 31 or Nov. 1 to Mar. 31 (rest of NY)²⁷⁶]

Y = Go to 5.1.

N = Coordinate with local field office, determine if take is reasonably certain to occur. If yes, project is eligible for use of the GCP.

- 5.1 Does the project propose to clear suitable documented roosts or trees within 150-feet of documented roosts?

Y = Project is **not** eligible to participate through the GCP. Please contact the local field office to request additional technical assistance.

N = Coordinate with local field office, determine if take is reasonably certain to occur. If yes, project is eligible for use of the GCP.

²⁷⁶ Time frames as stated in the Service's New York Field Office's Indiana Bat Project Review Fact Sheet (March 2018): 1) when > 10 miles from a Priority 3 (P3) or Priority 4 (P4) hibernaculum or > 20 miles from a Priority 1 (P1) or Priority 2 (P2) hibernaculum, but within the summer range of the IBAT, the removal of potential roost trees, generally ≥ 4 inches DBH should occur from October 1 through March 31; and 2) when < 10 miles from a P3 or P4 hibernaculum or < 20 miles from a P1 or P2 hibernaculum, removal should be conducted from November 1 to March 31. Tree removal on Long Island should be conducted from December 1 to February 28.

Appendix C. Individual Project Plan Application

To apply for a Permit²⁷⁷ under the Multi-Bat Species General Conservation Plan (GCP) for Routine Development Projects for the states of New York (NY), Pennsylvania (PA) and West Virginia (WV) for the Covered Species that includes the federally listed Indiana bat (*Myotis sodalis*; Endangered; IBAT) and northern long-eared bat (*Myotis septentrionalis*; Endangered; NLEB), as well as the tricolored bat (*Perimyotis subflavus*; Proposed Endangered; TCB), Project Proponents²⁷⁸ must submit a complete individual project plan (IPP) that includes all phases of a project. This document describes the IPP process and provides information on the development and submission of the application package. All components listed below must be completed, reviewed, and processed by a U.S. Fish and Wildlife Service (Service) local field office (see How to Submit below for contact information), in the appropriate aforementioned state, before a permit can be issued. The local field office can be contacted at any point during this process if you need assistance.

Applicant/Federal Agency Information

1. Enter your IPaC Project Code²⁷⁹ here: _____ (e.g., 202X-XXXXXXX). **Include a copy of your Official Species List.**
2. ___ By checking this box, I confirm that I have reviewed the GCP²⁸⁰, and all its appendices (A-H), and determined that my project is eligible to use this GCP. **Include a copy of your GCP Eligibility Key (appendix B) results as part of the final IPP submittal to verify eligibility.**
3. If IBAT and/or NLEB is identified on your IPaC Official Species List, **include the following IPaC-generated letters or PNDI receipts as part of the IPP submittal:**
 - A. If the IBAT is identified on your Official Species List:
 - a. For NY and WV only - the IPaC Northeast Endangered Species Determination Key²⁸¹ is applicable, **OR**

²⁷⁷ A Permit refers to an incidental take permit under Section 10(a)(1)(B) of the Endangered Species Act (ESA).

²⁷⁸ The GCP defines a Project Proponent as “a potential Applicant. For the purposes of this plan, a Project Proponent is any person planning to engage in activities within the GCP Plan Area that may result in take of a Covered Species. A Project Proponent is referred to as an Applicant at the time they submit a complete application.” “Person” is further defined in ESA section 3(13).

²⁷⁹ An Official Species List can be obtained from the Service’s Information for Planning and Consultation (IPaC) program website at: <https://ipac.ecosphere.fws.gov>.

²⁸⁰ The GCP and associated documents can be found here: <https://www.fws.gov/project/routine-development-gcp>

²⁸¹ This key is intended to streamline review of projects for potential effects to federally listed threatened and endangered species and designated critical habitat. This key covers many species in the Northeast Region.

- b. For PA only - a Pennsylvania Natural Diversity Inventory (PNDI) receipt from the Pennsylvania Conservation Explorer (PACE) Tool²⁸² if applicable

B. If the NLEB and/or TCB is identified on your Official Species List:

- For NY, PA, and WV - the IPaC NLEB and TCB Rangewide Determination Key²⁸³ is applicable.

4. Is the action authorized, permitted, funded, or being carried out by a Federal agency in whole or in part? (e.g., USACE, HUD, USDA) (see GCP appendix F)?

____ Yes [which agency(ies)]: _____

____ No

5. Applicant's contact information:

Name (first and last name): _____

Company: _____

Phone: _____

Email address: _____

6. Project Name: _____

7. County/State: _____

Individual Project Plan Checklist

The following information is necessary for the Service to understand the Applicant's project and determine if all the GCP requirements are being fulfilled. Please provide as much detail as possible to assist the Service in this review. Failure to provide sufficient information may result in increased review times or the need for resubmission.

8. Provide a detailed description of the proposed Covered Activities, including any and all related construction activities, staging areas, temporary workspaces, access roads, etc. Specify the total amount of acreage or linear miles within the project area and the total number of acres of ground disturbance that will result from the project.

²⁸² The PACE tool is a one stop shop for conservation planning and environmental review. This tool provides conservation information on biological diversity, protected lands, streams and other natural resources for planning purposes and allows users to screen a project for potential impacts to state and federally listed threatened endangered and special concern species. The PACE tool may send you to IPaC, as appropriate.

²⁸³ This key is intended to be applied to the entire range of the NLEB and TCB to streamline review of projects for potential effects to these species.

9. Provide a topographic or aerial map of the project location: include a large-scale map with context of the project within the surrounding area, a small-scale map specific to the project area, and outline the action area²⁸⁴ OR provide a shapefile that identifies the action area. Maps/shapefiles should include boundaries for all limits of disturbance.
10. Submit color digital images of the site taken prior to project impacts, the date the photograph was taken, and a map showing the location of established photograph points (latitude and longitude recorded in NAD83). There is no limit to the number of photographs that can be submitted, but at minimum, photographs must be taken in the four cardinal directions (North, South, East, and West) at the established photograph points (applicants can include photos that are historical and/or depict current conditions onsite, representative photos of vegetation onsite and habitat for Covered Species, etc.).
11. Provide an estimated project construction timeline. Also, include the proposed dates of tree removal/trimming/limbing/pruning/topping.
12. Provide any applicable results based on the most recent Service bat survey guidance²⁸⁵ or notification that the presence of the Covered Species will be assumed based on the presence of suitable habitat.²⁸⁶
13. Provide a list of conservation measures²⁸⁷ being applied to the project (see GCP section 4.4.1.1).
14. Provide an estimate of take using acres of suitable habitat as a surrogate, or number of individual trees removed. This estimate should include acreage of tree removal/trimming/limbing/pruning/topping (see GCP section 4.5).
15. Indicate the type, amount, and timing of mitigation, including associated costs and calculations (see GCP section 4.6 and Table 3).

²⁸⁴ The action area should include all areas to be affected directly or indirectly by the proposed action and not merely the immediate area involved in action.

²⁸⁵ <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>. In accordance with the survey guidance, it is recommended that surveys be approved by the Service prior to their start.

²⁸⁶ As a reminder, Project Proponents proposing non-linear projects with greater than 25 acres of suitable habitat removal (including tree removal, trimming, topping, pruning, and/or limbing) must undertake P/A surveys to be considered eligible for this GCP.

²⁸⁷ Indicated as CMs in the GCP.

16. Indicate the type of mitigation funding assurances that will be implemented by checking one of the boxes below (see GCP section 4.8.1.1 and 5.0).

_____ Conservation Bank. *Note:* Documentation of credit purchase must be provided to the Service prior to the onset of any activities that have the potential to result in take of the Covered Species.

_____ In-Lieu Fee (ILF). *Note:* The Applicant must provide documentation of the contribution of fees into the ILF prior to the onset of any activities that have the potential to result in take of the Covered Species.

_____ Permittee-Responsible Mitigation (PRM). *Note:* Lands must be acquired, permanent conservation easement established, endowments established, and management plan completed and be approved by the Service prior to the onset of any activities that have the potential to result in take of the Covered Species.

_____ PRM Surveys. *Note:* All surveys shall be conducted prior to the onset of any activities that have the potential to result in take of the Covered Species. If surveys are negative for the presence of new Covered Species maternity colonies and/or hibernacula, another mitigation method must be chosen, and funding assurances secured. Please indicate the secondary mitigation option (see GCP Table 8):

_____ Other PRM Option. *Note:* Approval by the Service must be received prior to moving forward with this option. Please indicate the alternative mitigation being considered and submit available details in a separate document:

17. Provide a copy of the Regional Cultural Resources Consultation form or documentation of the State Historic Preservation Office concurrence to confirm that the National Historic Preservation Act section 106 requirements have been fulfilled (see GCP appendix E).
18. Provide a copy of the IPaC technical assistance/concurrence verification letters, local field office technical assistance/concurrence letters, and/or PNDI receipts, as applicable (see #4 above).
19. If ESA take coverage is obtained for the noncovered species through another mechanism, provide documentation.
20. Provide a copy of correspondence with state agencies indicating that all required environmental review has been completed, if applicable.

How to Submit

Please email IPP submittals to the appropriate local field office email address below, as electronic submissions are preferred. Please do not email project information directly to individual staff biologists. If you are unable to submit the project electronically, the IPP application can also be submitted by U.S. mail (addresses below). Please do not submit the same project through both email and U.S. mail. Include the following in the email subject line for each IPP application: **GCP IPP Application Review Requested: [Project title] [IPaC Project Code] [State – NY, PA, or WV]**.

Service Field Office Contacts:

New York Ecological Services Field Office

3817 Luker Rd.
Cortland, New York 13045-9385
607-753-9334
Email project submissions to: *fw5es_nyfo@fws.gov*

Pennsylvania Ecological Services Field Office

110 Radnor Rd., Suite 101
State College, Pennsylvania 16801-7987
814-234-4090
Email project submissions to: *IR1_ESPenn@fws.gov*

West Virginia Ecological Services Field Office

6263 Appalachian Highway
Davis, West Virginia 26260-8061
304-866-3858
Email project submissions to: *fw5_wvfo@fws.gov*

Next Steps

Following the receipt of a complete IPP, the Service will review the package for potential approval. The Service will notify Applicants via email if and when their IPP is approved. The Service will also correspond via email if the IPP is incomplete or has been denied for any reason. The Service will provide the Applicant/Federal agency with an explanation of why the IPP was deemed incomplete or not approved.

When the Applicant has been notified by the Service that the IPP is complete, they should go to the Service's ePermits website at <https://fwsepermits.servicenowservices.com/fws/> and begin filling out the Permit application.

Reporting

An annual report of Covered Activities undertaken under the terms of this GCP will be prepared by Permittees and submitted electronically through ePermits at: <https://fwsepermits.servicenowservices.com/fws/>.

The total amount of take approved annually by the Service covered under individual incidental take permits (ITPs) using this GCP will be posted at <https://www.fws.gov/project/routine-development-gcp>. The amount of take will be updated on the website following each approval of an ITP or as Service end-of-year reports are made publicly available.

If the total take approved for ITPs reaches the total annual take analyzed under this GCP, no additional IPPs will be approved by the Service and notice will be provided on the GCP website.

Appendix D. Threatened and Endangered Species within the GCP Plan Area

As of, June 2025, there are currently 57 federally listed or proposed species in the Multi- Bat Species General Conservation Plan (GCP) for Routine Development Projects for states of New York (NY), Pennsylvania (PA) and West Virginia (WV). Changes to the listing status of these species may occur over time.

Species	Listing Status	Critical Habitat	Presence by State
Ferns and Allies			
American hart's-tongue fern (<i>Asplenium scolopendrium</i> var. <i>americanum</i>)	T	-	NY
Flowering Plants			
Harperella (<i>Ptilimnium nodosum</i>)	E	-	WV
Houghton's goldenrod (<i>Solidago houghtonii</i>)	T	-	NY
Leedy's roseroot (<i>Rhodiola integrifolia</i> ssp. <i>leedyi</i>)	T	-	NY
Northeastern bulrush (<i>Scirpus ancistrochaetus</i>)	PDL	-	NY, PA, WV
Northern wild monkshood (<i>Aconitum noveboracense</i>)	T	-	NY
Sandplain gerardia (<i>Agalinus acuta</i>)	E	-	NY
Seabeach amaranth (<i>Amarantus pumilus</i>)	T	-	NY
Shale barren rockcress (<i>Boechera serotina</i>)	E	-	WV
Small whorled pogonia (<i>Isotria medeoloides</i>)	T	-	NY, PA, WV
Virginia spiraea (<i>Spiraea virginiana</i>)	T	-	WV
Mollusks			
Chittenango ovate amber snail (<i>Novisuccinea</i>)	T	-	NY
Mussel, Clubshell (<i>Pleurobema clava</i>)	E	-	NY, PA, WV
Mussel, Dwarf wedgemussel (<i>Alasmidonta heterodon</i>)	E	-	NY, PA
Mussel, Green floater (<i>Lasmigona subviridis</i>)	PT	P+	NY, PA, WV
Mussel, Fanshell (<i>Cyprogenia stegaria</i>)	E	-	PA, WV
Mussel, James spiny (<i>Pleuobema collina</i>)	E	-	WV
Mussel, Longsolid (<i>Fusconaia subrotunda</i>)	T	+	NY, PA, WV
Mussel, Northern riffleshell (<i>Epioblasma torulosa rangiana</i>)	E	-	NY, PA, WV

Mussel, Pink mucket (<i>Lampsilis abrupta</i>)	E	-	WV
Mussel, Rabbitsfoot (<i>Quadrula cylindrica cylindrica</i>)	T	+	PA
Mussel, Rayed bean (<i>Villosa fabalis</i>)	E	-	NY, PA, WV
Mussel, Round hickorynut (<i>Obovaria subrotunda</i>)	T	+	PA, WV
Mussel, Salamander (<i>Simpsonaias ambigua</i>)	PE	P+	NY, PA, WV
Mussel, Sheepnose (<i>Plethobasus cyphus</i>)	E	-	PA, WV
Mussel, Spectaclecase (<i>Cumberlandia monodonta</i>)	E	-	WV
Mussel, Snuffbox (<i>Epioblasma triquetra</i>)	E	-	PA, WV
Mussel, Tan riffleshell (<i>Epioblasma florentina walkeri</i>)	E	-	WV
Purple cat's paw (<i>Epioblasma obliquata obliquata</i>)	E	-	WV
Snail, Flat-spined three-toothed land (<i>Triodopsis</i>)	T	-	WV
Crustaceans			
Big Sandy crayfish (<i>Cambarus callainus</i>)	T	+	WV
Guyandotte River crayfish (<i>Cambarus veteranus</i>)	E	+	WV
Madison Cave isopod (<i>Antrolana lira</i>)	T	-	WV
Insects			
Bog buck moth (<i>Hemileuca maia menyanthevora</i>)	E	-	NY
Karner blue butterfly (<i>Lycaeides melissa samuelis</i>)	E	-	NY
Monarch butterfly (<i>Danaus plexippus</i>)	PT	-	NY, PA, WV
Regal Fritillary Butterfly, Eastern Subspecies (<i>Argynnis idalia idalia</i>)	PE	-	PA
Rusty-patched bumble bee (<i>Bombus affinis</i>)	E	-	PA, WV
Fishes			
Atlantic sturgeon (<i>Acipenser oxyrinchus</i>)	E	+	NY, PA
Candy darter (<i>Etheostoma osburni</i>)	E	+	WV
Diamond darter (<i>Crystallaria cincotta</i>)	E	+	WV
Shortnose sturgeon (<i>Acipenser brevirostrum</i>)	E	-	NY, PA

Amphibians			
Cheat Mountain salamander (<i>Plethodon nettingi</i>)	T	-	WV
Eastern Hellbender (<i>Cryptobranchus alleganiensis alleganiensis</i>)	PE	-	NY, PA, WV
West Virginia spring salamander (<i>Gyrinophilus subterraneus</i>)	PE	+	WV
Reptiles			
Bog turtle (<i>Glyptemys muhlenbergii</i>)	T	-	NY, PA
Eastern massasauga rattlesnake (<i>Sistrurus catenatus</i>)	T	-	NY, PA
Birds			
Eastern black rail (<i>Laterallus jamaicensis jamaicensis</i>)	T	-	NY, PA, WV
Piping plover (<i>Charadrius melodus</i>) (Atlantic Coast)	T	-	NY
Piping plover (<i>Charadrius melodus</i>) (Great Lakes)	E	+	NY, PA
Roseate tern (<i>Sterna dougallii dougallii</i>)	E	-	NY
Rufa red knot (<i>Calidris canutus rufa</i>)	T	P+	NY, PA, WV
Mammals			
Gray bat (<i>Myotis grisescens</i>)	E	-	WV
Indiana bat (<i>Myotis sodalis</i>)	E	+	NY, PA, WV
Northern long-eared bat (<i>Myotis septentrionalis</i>)	E	-	NY, PA, WV
Virginia big-eared bat (<i>Corynorhinus townsendii virginianus</i>)	E	+	WV
Tricolored bat (<i>Perimyotis subflavus</i>)	PE	-	NY, PA, WV

Listing status: (T) threatened
(E) endangered
(PE) proposed endangered
(PT) proposed threatened
(PDL) proposed for delisting
(C) candidate for listing

Critical habitat: (-) critical habitat has not been designated for this species
(+) critical habitat has been proposed or designated for this species
(P) critical habitat has been proposed for this species

Appendix E. National Historic Preservation Act Section 106 Compliance

Glossary

Adverse Effect/Impact: Anything that will alter, damage, or destroy the integrity of a historic property's characteristics, either directly or indirectly; thus, impact the historic property's qualification for listing in the National Register. Adverse effects may include: demolition; physical destruction of or damage to all or part of the property; alteration, restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, provision of handicapped access; removal of a property from its historic location; change of character; neglect which causes deterioration; introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features; transfer, lease, or sale of a property out of federal ownership without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

Applicant: Refers to any person, as defined in ESA section 3(13), who requires formal approval or authorization from a Federal agency as a prerequisite to conducting an action. For the purposes of this GCP, an eligible Applicant is one that has the legal authority to execute their proposed project on the lands that are proposed for coverage under the GCP and sufficient legal control to implement the conservation plan, such as ownership of property in fee simple, a lease agreement that grants authority for the proposed project, or similar type of legal authority to conduct the proposed activities (50 CFR²⁸⁸ 402.02, 50 CFR 17.22(b)(2)(F), 50 CFR 17.32(b)(2)(F), HCP and ITP Processing Handbook).

Area of Potential Effect (APE): The geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.

Concurrence: An agreement in judgment of consulting parties.

Consulting Parties: Individuals and organizations with a demonstrated interest in the undertaking or the affected historic properties. Consulting Parties can include "State Historic Preservation Officers; Tribal Historic Preservation Officers; Indian Tribes; Native Hawaiian organizations; representatives of local government; Applicants for Federal assistance, permits, licenses, and other approvals; the Advisory Council on Historic Preservation; and others with an interest in the property.

Cultural Resources Professional: A Cultural Resources Management (CRM) Qualified Professional is defined as an individual who meets the established professional standards as found in the Secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation.²⁸⁹

²⁸⁸ CFR stands for Code of Federal Regulations.

²⁸⁹ NPS 1983

Cultural Site: Includes archaeological sites, traditional cultural property, and especially any identified or suspected religious/sacred site such as a platted or unplatted cemetery (including prehistoric earthen burial mounds).

Eligible for Listing on the National Register of Historic Places (NRHP): An action through which the property is determined to meet the National Register criteria even if the property does not actually become listed.

Ground Disturbing Activities: Any activity that involves disturbing the soil in any way.

Historic Property: Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and material remains related to and located within such properties. This term includes properties of traditional religious and cultural importance Indian tribe or Native Hawaiian organization and that meet the National Historic criteria” (sometimes referred to as traditional cultural properties or TCPs).

Ineligible for Listing on the National Register of Historic Places (NRHP): An action through which the property is found to NOT meet the National Register criteria for inclusion on the list of Historic Places.

Material Remains: The physical evidence of human habitation, occupation, use, or activity, including the site, location, or context in which such evidence is situated, or items of material culture from those locations. Only material remains that are of archaeological interest are considered to be archaeological resources.

Minimally Invasive Techniques: Any activity that does not disturb the environment, ground, or any historical properties within an APE.

National Historic Preservation Act of 1966 (NHPA): This law is the federal preservation authority for the preservation of cultural, historical, and archaeological resources on Federal land. Of particular interest is section 106, which requires Federal agencies to consider the effects, whether direct or indirect, of their undertakings on historic properties. Implementation is regulated by the Advisory Council on Historic Preservation (ACHP).

National Register of Historic Places (NRHP): The official list of our country's historic buildings, districts, sites, structures, and objects worthy of preservation.

Nonground Disturbing Activities: Activities that do not disturb the soil in any way.

Previously Disturbed Lands: Lands that the soil has previously been disturbed on, such as agricultural fields, construction sites, etc. If the project will surpass the soil depths that were previously disturbed than section 106 will still be required.

Regional Historic Preservation Officer (RHPO): The head U.S. Fish and Wildlife Service archaeologist for the region that the project is located in.

Secretary of Interior’s Professional Qualifications Standards: The Secretary of the Interior establishes professional standards for the preservation and protection of all cultural resources listed in or eligible to be listed in the National Register of Historic Places. These standards promote responsible preservation practices to protect our cultural resources and are used by Federal agencies for their “historic preservation responsibilities.”

Section 106: NHPA section 106 requires Federal agencies to consider the effects, whether direct or indirect, of their undertakings on historic properties by consulting with interested parties. This review process requires time and must be completed before any kind of approval or funding is granted.

State Historic Preservation Officer (SHPO): The head archaeologist for the state that the project is located in.

Traditional Cultural Properties (TCP): A property that is associated with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community.

Tribal Historic Preservation Officer (THPO): The Tribal preservation officer who reviews section 106 correspondences and ensures that the interests of their Tribe are being considered.

Tribe: A federally recognized Tribal Nation.

Undertaking: A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval.

Section 106 Compliance Protocol

1.0 Introduction

This protocol applies to Applicants adopting the Multi-Bat Species General Conservation Plan (GCP) for Routine Development Projects in New York (NY), Pennsylvania (PA), and West Virginia (WV), in their applications to the U.S. Fish and Wildlife Service (Service) for Incidental Take Permits (ITPs) under ESA section 10. It should only be used for those activities and lands specified in the GCP.²⁹⁰ Following this protocol is necessary for compliance with the NHPA section 106 in the context of Service’s decision to grant a Permit under the GCP.

²⁹⁰ It is the intention of the Service to make the GCP available to Applicants for a 10-year period. However, subsequent procedures may be developed that supersede the approach described herein. If a new procedure is adopted, the Service will engage appropriate Applicants to discuss any superseding protocol. However, the Service recommends that all permittees regularly contact the local field office (see GCP appendix A) or the Service’s Regional Habitat Conservation Plan (HCP) Coordinator to ensure that they are adhering to the most current protocol.

Activities authorized under a Permit, including those issued through the GCP, are considered an “undertaking” under the NHPA. An “undertaking” is defined in the NHPA regulations as follows:

“[A] project, activity, or program funding in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval.”²⁹¹

As such, compliance with section 106 is required when an ITP is issued pursuant to the GCP. For the purposes of this protocol, activities considered an undertaking in connection with the GCP, fall within two categories:

- 1) they do not have the potential to affect Historic Property; or
- 2) there is potential to affect Historic Property and an Applicant is required to consult with the SHPO, THPO, or Service RHPO.

The regulations promulgated pursuant to the NHPA define “Historic Property” as follows:

“[A]ny prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and material remains related to and located within such properties. This term includes properties of traditional religious and cultural importance Indian tribe or Native Hawaiian organization and that meet the National Historic criteria” (sometimes referred to as traditional cultural properties or TCPs).²⁹²

For the purposes of this protocol, Historic Property includes sites considered as TCPs. Notably, most activities authorized by the GCP, do not have the potential to affect Historic Property. Nevertheless, an Applicant must take the following steps to ensure compliance with section 106. This protocol assumes that the Service will be the lead agency for the purposes of compliance.²⁹³

2.0 Determining Section 106 Applicability (see Flow Chart at the end of this appendix to help with applicability determination)

Step 1. Are the activities considered to have no potential to impact Historic Property?

Activities authorized by the GCP that have no potential to affect Historic Property do not require further section 106 review.

²⁹¹ 36 CFR 800.16(y).

²⁹² 36 CFR 800.16(1)(1)

²⁹³ 36 CFR 800.2(a)

The Service considers the activities listed below as having no potential to disturb any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the NRHP (aka “Historic Property”); therefore, do not require further section 106 review.²⁹⁴

Accordingly, if the proposed activity fits within one or more of the categories listed below, the Service’s section 106 compliance for this activity will be considered concluded. An Applicant shall maintain documentation of those conclusions for their records and make them available to the Service upon request.

Activities considered to have no potential to impact Historic Property:²⁹⁵

A. Nonground disturbing exemptions

- 1) **Surveys and Inspections** – Field observations, site inspections, data collection, investigations, driving along previously established paths or roads, and report writing that do not involve disturbance of the ground or buildings/structures.
- 2) **Public Education and Outreach** – Classroom and outdoor education activities that do not involve ground or building/structure disturbance.
- 3) **Hand Removal or Introduction of Plants and Animals** – The removal from or introduction of plants or animals to the natural environment without ground or building/structure disturbance.
- 4) **Proposals, Plans or Protocols** – The writing or implementation of research or management activities that take place entirely within extant offices and laboratories.
- 5) **Other Nonconstruction Activities** – Activities which do not involve or lead directly to construction, such as planning and research activities; grants for training; engineering to define the elements of a proposed action or alternatives so that social, economic, and environmental effects can be assessed.

B. General Habitat and Vegetation Management

- 1) **Seeding and Planting** – Active planting of an area to promote preferred vegetation. Seeding and planting may use minimally invasive techniques such as broadcast seeding or no-till drill without disturbance of soil below the lowest level of previous disturbance.
- 2) **Herbicide Application** – Use of equipment and vehicles to apply herbicides via foliar applications and other techniques to control invasive plants, noxious weeds, and incompatible vegetation.
- 3) **Controlled Grazing** – Use of controlled grazing (i.e., using cows, goats) to sustain early successional habitats.

²⁹⁴ 36 CFR 800.3(a)(1)

²⁹⁵ 36 CFR 800.3(a)(1)

- 4) **Brush Removal** – Removal of dense brush using forestry mowing, chainsaws, or other mechanical methods to promote more open grassland habitat types.
- 5) **Mowing or Haying** – Mechanical mowing or clipping of vegetative material to sustain early successional habitats.
- 6) **Noxious/Invasive Weed/Woody Species Control** – The control of surface vegetation (weeds and woody species) by prescribed burning, hand and mechanical mowing, cutting, and clipping, or chemical control practices without disturbance of soil below the lowest level of previous disturbance.

C. Maintenance and Modernization Construction

- 1) **General Improvement and Maintenance** – Improvement and maintenance of existing infrastructure where lands have been previously disturbed and where activity will not disturb the soil beyond the area of previous disturbance.
- 2) **Building/Infrastructure Maintenance** – For utility infrastructure projects this includes, but is not limited to, guyed wire replacement, culvert replacement, pole wrapping or painting, above and below ground structural replacements, and woodpecker assessments and patching. On transportation lands this includes, but is not limited to, pavement repair, mill and overlays, shoulder repairs, painting and striping, guardrail installation or replacement, lighting installation or replacement, manhole/inlet cleaning, installation and maintenance of curb and gutter, culvert installation and maintenance, bridges and piers, scour aprons, cattle grates, and similar structures. These activities will not disturb the soil beyond the area of previous disturbance.
- 3) **Building/Structure Removal** - The removal of buildings and structures younger than 50 years from the date of the proposed activity or that have been determined to be ineligible for listing in the NRHP with SHPO concurrence.
- 4) **Temporary Staging and Storage** - Temporary staging and material storage areas for construction using construction matting or other access pads in wetlands, waterway crossings or other environmentally sensitive areas. Temporary staging and storage areas are removed, and vegetation is typically restored following construction.
- 5) **Construction within Previously Disturbed Lands** – Activities that do not cause disturbance beyond the extent or depth of previously disturbed land (i.e., largely within the impacted footprint of the existing infrastructure and previous ground disturbance). On utility infrastructure lands this includes, but is not limited to, construction of structures and pipe segments, reconductoring, burying lines (conductors, fiber optic, or other), adding or modifying overhead lines or pole attachments, demolition and removal of existing structures and pipe segments, construction of substations, and installation of new structures or pipe within existing rights-of-way. On transportation lands this includes, but is not limited to, pavement replacement, roadway construction or repair, bridge and culvert widening, extensions or replacement, lane and shoulder widening or

extension. Construction of pathways (bike lanes, sidewalks, trails, or other paths), rail replacement, construction of noise walls or retaining walls, burying lines (conductors, fiber optic, or other), adding or modifying overhead pole attachments, bank stabilization activities that are hard armoring through rip rap, concrete, sheet piling, or similar methods that are unlikely to allow vegetation establishment, and, construction within the existing rights-of-way including rest areas, roundabouts, interchanges, truck escape ramps, weigh stations, spoils disposal or waste management areas, and similar facilities.

- a. For both utility infrastructure and transportation lands, this includes facility construction and building maintenance, including small buildings, lighting, storage areas, and stormwater facilities maintenance; grading and excavation; installation and maintenance of erosion control best management practices, site clean-up and restoration, including grading and reseeding on existing rights-of ways.

D. Areas Previously Reviewed

- 1) **APE Previously Surveyed with Negative Results** – The APE of the proposed activity has been previously subjected to a rigorous scientifically-conducted archaeological and/or architectural identification survey by professionals meeting the Secretary of the Interior’s qualifications and no sites/buildings/structures were found (with documented evidence that the survey[s] was conducted and concurrence was achieved from all consulting parties, especially SHPO).²⁹⁶

If the activity does not fit within any of the above categories, further review is warranted, proceed to Step 2.

Step 2. Are Known Historic Properties in the Permit Area²⁹⁷?

Due to their sensitivity to interested parties, any activity located within any previously known Historic Property and cultural site, including an archaeological site, traditional cultural property, and especially any identified or suspected religious/sacred site such as a platted or unplatted cemetery (includes prehistoric earthen burial mounds), requires further review.²⁹⁸

Applicants shall determine whether the activity would occur in a known Historic Property.

A known Historic Property can be identified through prior consultations, or through verbal or written communications with Federal, Tribal, or State historic preservation offices. Through contacting the SHPO, Applicants may also cross-reference the project site to State and Federal cultural resource databases to determine if the site is a known Historic Property.

²⁹⁶ 36 CFR 61

²⁹⁷ The GCP defines the Permit Area as “the geographic area where a Permit applies (HCP and ITP Processing Handbook). The Permit Area for ITPs issued in association with this GCP will be defined for each individual project and must be completely within the Plan Area consisting of the states of NY, PA, and WV, excluding Federal lands.”

²⁹⁸ 36 CFR 800.5(a)

If the activity has the potential to adversely impact Historic Properties but does not occur within an APE with known Historic Properties, the Applicant must conduct an inventory of the APE (in accordance with state guidelines) to confirm that there are no Historic Properties within the APE.

The Applicant shall maintain documentation of these conclusions for their records and make them available to the Service upon request.²⁹⁹ No further consultation is required if the inventory finds no Historic Properties, and the activity can proceed.

If the activity occurs within a known Historic Property, and scope of activity cannot be modified to avoid the boundaries of the Historic Property, further review is required and the Applicant should proceed to Step 3.

Step 3. An Activity that has the Potential to Affect Historic Property: Formal Section 106 Consultation

Where an activity has the potential to affect Historic Property, an Applicant is required to assist the Service in the section 106 compliance obligations by completing consultation. For each project area, the Applicant shall initiate procedures outlined in regulations working directly with the other consulting parties (e.g., SHPO, THPO).³⁰⁰

At this stage, it is **strongly recommended** that an Applicant work with a cultural resources professional that meets the Secretary of Interior's CRM Professional Qualifications Standards to review the activity, guide the Applicant through the consultation process and identify ways to avoid impacts to known Historic Property through a change in the scope of activities.³⁰¹ The full protocol for consulting on an activity that has the potential to affect Historic Property includes the following:

- 1.) Define the project site and parameters (APE and timing of activities).
- 2.) Cross-reference the project site to State and Federal historic and cultural resource databases within the SHPO and/or the THPO, if applicable, to see if any potential impacts to known Historic Property can be identified (if not done already).
- 3.) Project information resulting from the review and consultation above will be submitted to the relevant SHPO and any other consulting parties identified as having an interest in the APE (e.g., THPOs/tribes). The Applicant should clearly state to the consulting parties that this is a Service undertaking for purposes of section 106. A specific SHPO's review form can be used, or correspondence containing equivalent information, with the supporting documentation including maps and database searches to be sent to the appropriate SHPO/THPO for review.

²⁹⁹ 36 CFR 800.4(d)

³⁰⁰ 36 CFR 800 *et seq.*

³⁰¹ 36 CFR 61

- 4.) The SHPO and the other consulting parties should review the project within 30 calendar days (a THPO or Tribe may need a longer timeframe) and may request a field visit or “survey”.³⁰² If no response is given or no survey is requested, activities can begin as planned and the Applicant shall document this for their records, to provide to the Service on request. If this occurs, the Service will consider its section 106 compliance satisfied in connection with this activity.
- 5.) If a field survey is mutually agreed to by the consulting parties, a cultural resource professional, meeting the above referenced standards in the appropriate academic discipline, must conduct it, and one of the following outcomes is possible as a result of the survey:
 - a. If a Historic Property is not found, the Applicant must notify the consulting parties, receive concurrence, document this for their records, and be prepared to provide this information to the Service upon request. Completion of these steps by the Applicant will be considered to have satisfied the Service’s section 106 compliance for this activity.
 - b. If a Historic Property is is found, the Applicant, in consultation with the consulting parties, will develop a plan, if necessary (most times it is not necessary if the site(s) can be avoided), to evaluate whether or not the site is eligible for inclusion on the NRHP and what effect the project, if any, will have on the site. Except for the stipulation below, while working with the consulting parties, the Applicant will independently follow the section 106 process to the end and shall maintain documentation for their records, which must be made available to the Service upon request.³⁰³

*Completion of these steps by the Applicants will be considered to satisfy the Service’s section 106 compliance for this activity.*³⁰⁴

³⁰² 36 CFR 800.4(d)(i)

³⁰³ The Service RHPO may become directly involved in the section 106 review (through the Applicant staff) if the process reaches “resolution of adverse effects” before the conclusion of the section 106 process (36 CFR 800.6). At that time, the Service will enter the process as a signatory to a Memorandum of Agreement to resolve the adverse effects to the Historic Property. The Service will only enter into the section 106 process earlier if any consulting party disagrees with the Applicant’s description of the undertaking or the Applicant’s determination, at which time, notification from the Applicant will be sent in writing to the Service if the disagreement cannot be resolved in a timely manner by the Applicant.

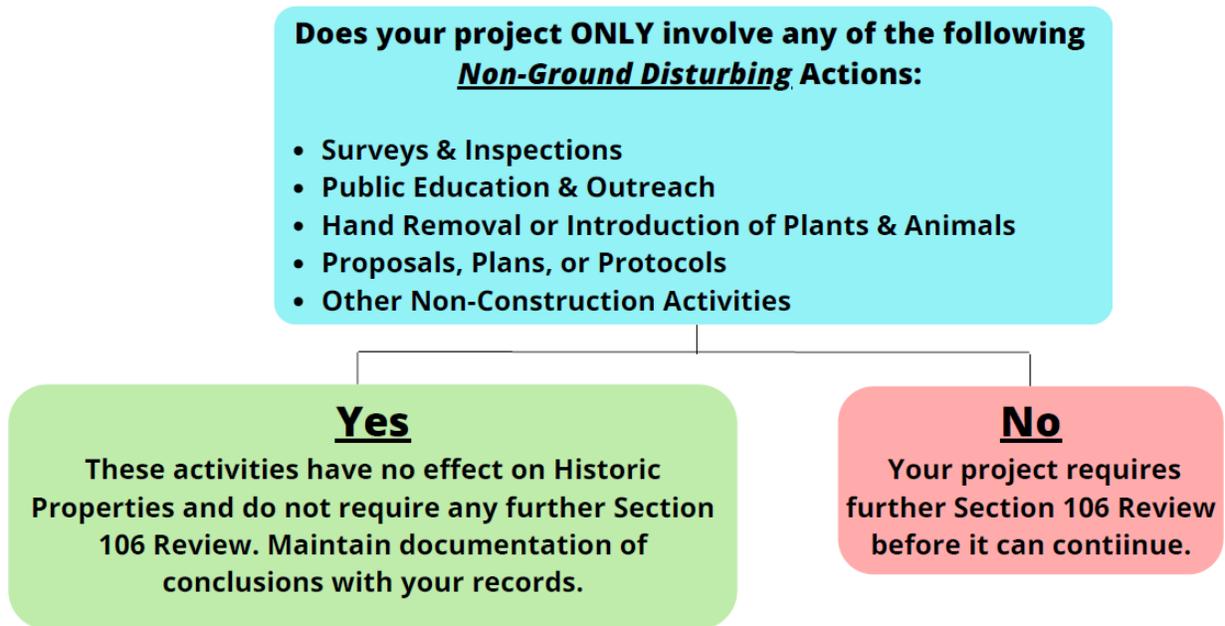
³⁰⁴ 36 CFR 800.4(d)(2)

Reference:

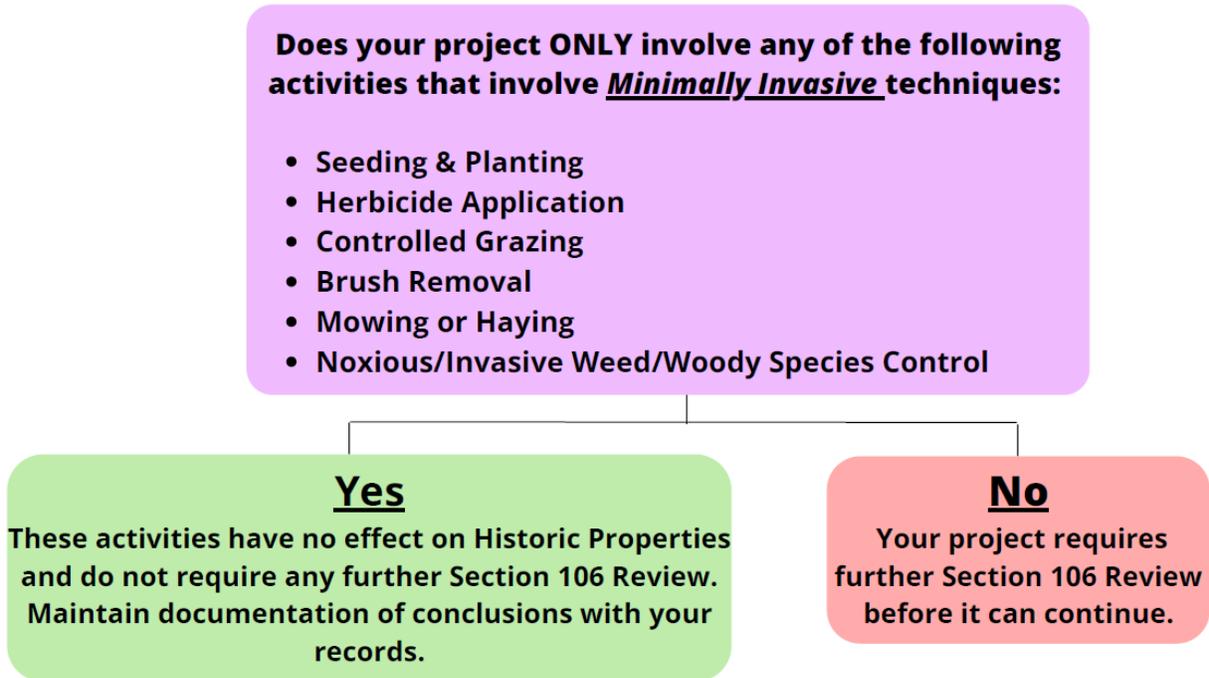
National Park Service (NPS). 1983. Archeology and Historic Preservation, Secretary of the Interior's Standards and Guidelines. Part IV. Federal Register Vol. 48, No. 190, pp. 44716–44740. September 29, 1983.

The following flowcharts further help show how to proceed with completing the NHPA section 106 process.

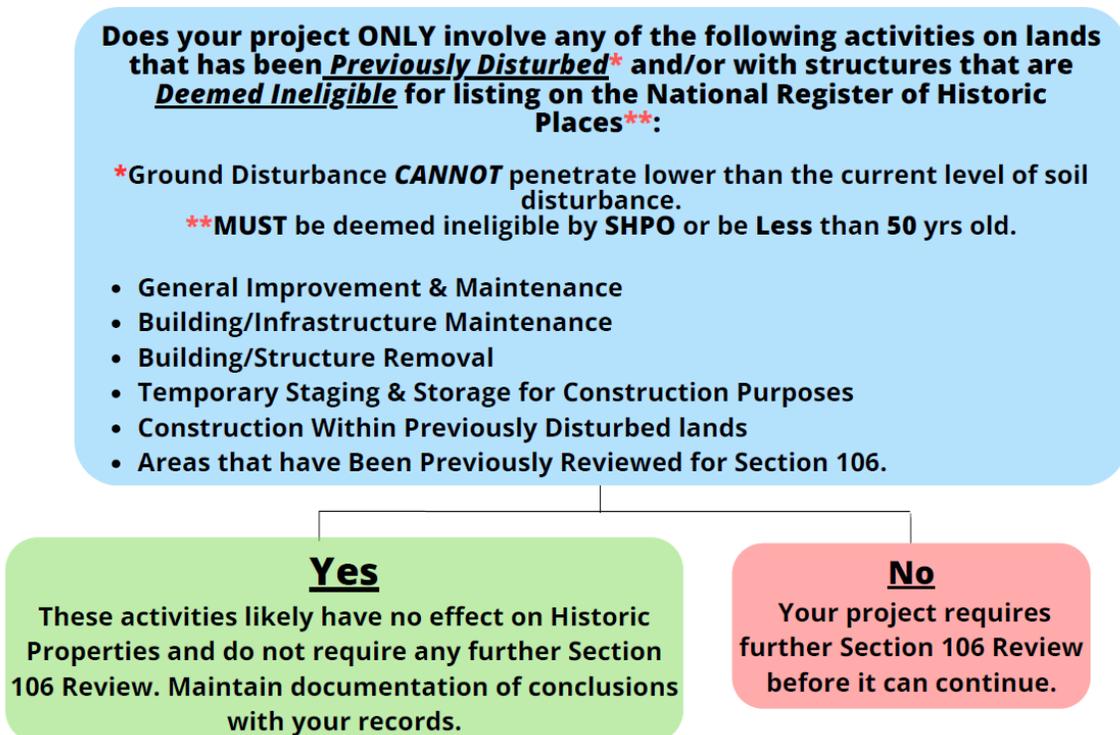
Nonground Disturbing Exemptions:



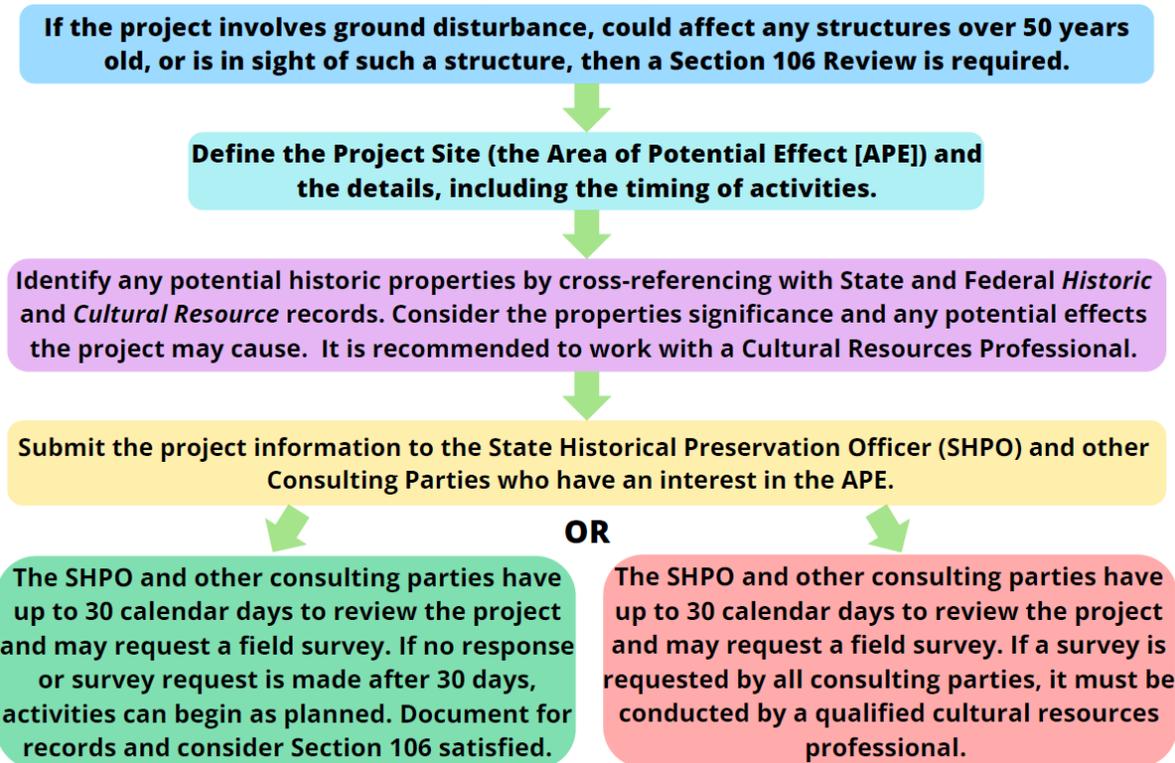
General Habitat and Vegetation Management Exemptions:



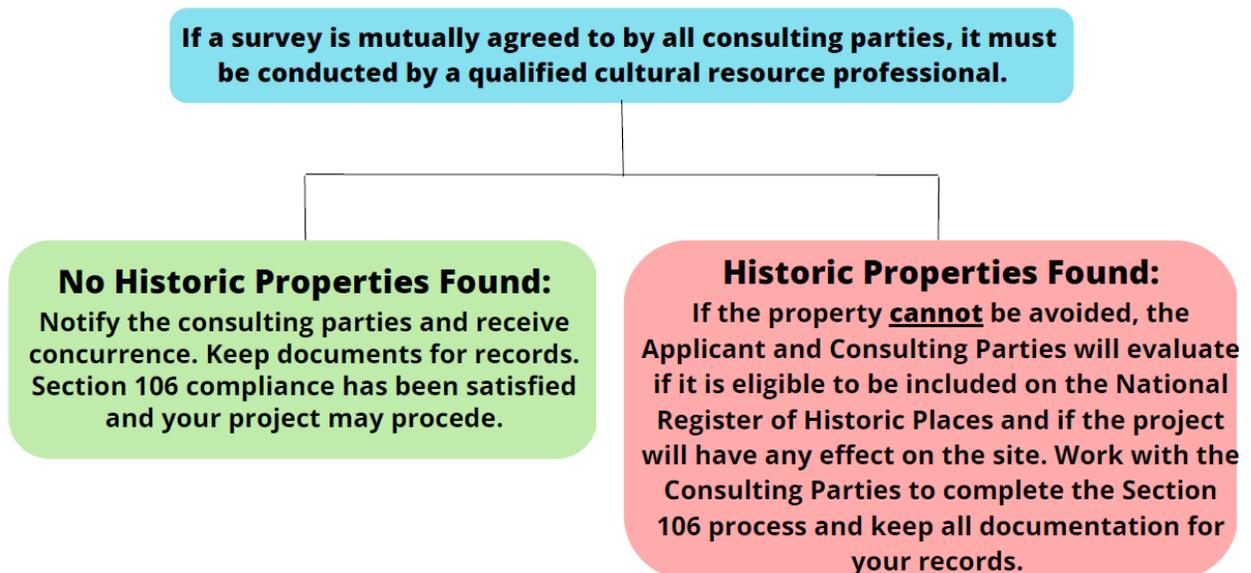
Maintenance and Modernization Construction Exemptions:



NON-Exempted Project Activities:



Field Survey Requested by Consulting Parties:



Appendix F. Federal Action Agency Involvement

The Multi-Bat Species General Conservation Plan (GCP) for Routine Development Projects may streamline Endangered Species Act (ESA) implementation for proposed projects that also involve other Federal agency actions that may affect the Covered Species within the Plan Area of New York (NY), Pennsylvania (PA), and West Virginia (WV). The Covered Species include the federally listed Indiana bat (*Myotis sodalis*; Endangered; IBAT) and the northern long-eared bat (*Myotis septentrionalis*; Endangered; NLEB), as well as the tricolored bat (*Perimyotis subflavus*; Proposed Endangered; TCB).

In cases where Federal agencies authorize, fund, or carry out activities that may affect listed species, they must consult with the U.S. Fish and Wildlife (Service) under ESA section 7(a)(2) to ensure that their actions will not jeopardize the listed species' continued existence.³⁰⁵ In cases where a potential GCP project has such a federal nexus, the Federal agency can incorporate the relevant Project Proponent's³⁰⁶ commitments, including the GCP required mitigation, into their formal consultation initiation package (e.g., Biological Assessment). Once the Service determines that the Federal agency has properly incorporated all of the Project Proponent's commitments into the initiation package, the Service can then extend incidental take³⁰⁷ coverage³⁰⁸ from the GCP's intra-Service Biological Opinion³⁰⁹ to the consulting Federal agency through a streamlined consultation process. The expectation is that the Service would be able to provide this brief document in significantly less time than standard statutory section 7 timeframes. The "No Surprises Rule"³¹⁰ regulatory assurances provided to non-Federal Project Proponents through Permit³¹¹ issuance do not apply to participating Federal agencies and reinitiation³¹² requirements still apply to the Federal agency. The Service would expect there will be no additional reasonable and prudent measures or terms and conditions for the Federal agency

³⁰⁵ A Federal agency is required to consult with the Service if an action "may affect" listed species or designated critical habitat, even if the effects are expected to be beneficial. A "may affect" determination includes actions that are "not likely to adversely affect," as well as "likely to adversely affect" listed species. If the action is "not likely to adversely affect" listed species (i.e., the effects are beneficial, insignificant, or discountable), and the Service agrees with that determination, the Service provides concurrence in writing and no further consultation is required. If the action is "likely to adversely affect" listed species, then the Federal action agency must request initiation of formal consultation. This request is made in writing to the Service and must include a complete initiation package. Formal consultation concludes with the Service's issuance of a Biological Opinion and incidental take statement to the Federal action agency.

³⁰⁶ The GCP defines a Project Proponent as a potential Applicant. For the purposes of this plan, a Project Proponent is any person planning to engage in activities within the Plan Area that may result in take of a Covered Species. A Project Proponent is referred to as an Applicant at the time they submit a complete application. "Person" is further defined in ESA section 3(13).

³⁰⁷ Take is defined in ESA section 3 as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

³⁰⁸ Incidental take coverage provided to Federal action agencies through this GCP would be subtracted from the overall annual take estimated in GCP section 4.5.2, Table 2 for the state (NY, PA, or WV) where the take occurs.

³⁰⁹ April 22, 2020, memorandum from Assistant Director of the Service.

³¹⁰ The No Surprises Rule (63 FR 8859), provides regulatory assurances to the Permittee of a Permit issued under ESA Section 10(a)(1)(B) that no additional land use restrictions or financial compensation beyond that described in the Habitat Conservation Plan and under the Permit conditions will be required of the Permittee with respect to species covered by the Permit, even if unforeseen circumstances arise after the Permit is issued indicating that additional mitigation is needed for a given species covered by a Permit (50 CFR 17).

³¹¹ A Permit refers to an incidental take permit under ESA section 10(a)(1)(B).

³¹² See 50 CFR 402.16.

or Project Proponents with respect to ESA issues because these are already incorporated in the Project Proponent's project description and commitments, the Biological Assessment submitted by the Federal agency, and various GCP-related decision documents including its intra-Service Biological Opinion.

Additional information on implementation can be found in the Service's GCP intra-Service Biological Opinion. GCP eligibility should be discussed with the Service's local field office.³¹³ Local field offices may need to work with the Federal action agency requesting to use this GCP to develop additional streamlining approaches.

³¹³ Contact information for the Service's local field offices can be found in GCP appendix A.

Appendix G. Standard Process for Obtaining and Implementing a Permit for an HCP

For Endangered Species Act (ESA) Section 10(a)(1)(B) Habitat Conservation Plans (HCPs), there are four primary phases in the process of obtaining and implementing a Permit:³¹⁴

1. pre-application;
2. development of an HCP;
3. processing the Permit; and
4. post issuance compliance.

During **Phase 1**, the U.S. Fish and Wildlife Service (Service) provides technical assistance to the Project Proponent³¹⁵ regarding the need for a Permit and if so, what type and scale of HCP would meet their needs. If any component of a project cannot be conducted in a way that avoids take³¹⁶ of federally listed species, Project Proponents may choose to seek a Permit to ensure that they have coverage for take otherwise prohibited under ESA section 9. Coordination with the local field office³¹⁷ can help determine if project activities are reasonably certain to result in take and if Permit coverage is recommended.

If a Project Proponent chooses to pursue a Permit, the Service works with them during **Phase 2** to develop a conservation plan³¹⁸ that integrates the proposed project or action with the conservation needs of federally listed species.

Every HCP submitted in support of a Permit application must describe:

1. the impacts likely to result from the taking for which Permit coverage is requested;
2. measures that will be implemented to monitor, minimize, and mitigate these impacts; funding that will be made available to undertake such measures; and procedures to deal with unforeseen circumstances;
3. considered alternatives that would not result in take; and
4. any additional measures the Service may require as necessary or appropriate for purposes of the plan.³¹⁹

³¹⁴ A Permit refers to an incidental take permit under ESA section 10(a)(1)(B).

³¹⁵ The Multi-Bat General Conservation Plan (GCP) defines a Project Proponent as a potential Applicant. For the purposes of this plan, a Project Proponent is any person planning to engage in activities within the Plan Area that may result in take of a Covered Species. A Project Proponent is referred to as an Applicant at the time they submit a complete application. "Person" is further defined in ESA Section 3(13).

³¹⁶ Take is defined in ESA section 3 as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

³¹⁷ Contact information for the Service's local field offices can be found in GCP appendix A.

³¹⁸ The plan required by ESA section 10(a)(2)(B) that an Applicant must submit when applying for a Permit. Conservation plans are also known as HCPs. Incidental take is authorized through a section 10(a)(1)(B) Permit (HCP and ITP Processing Handbook, 50 CFR 17.3).

³¹⁹ ESA 10(a)(2)(A)

Once the Service determines that an Applicant's³²⁰ HCP meets statutory and regulatory issuance criteria, the Service initiates **Phase 3** by publishing a Notice of Availability of the application in the *Federal Register* (FR) to satisfy statutory public review and comment requirements. Notices may be published in the *FR* as individual applications are received or published in batches to streamline processing when multiple applications are received. Upon a determination by the Service that all statutory and regulatory requirements for Permit issuance have been met, the local field office makes a recommendation regarding Permit issuance and submits the HCP and all supporting materials for final approval, decision, and issuance to the Regional Office.

During **Phase 4**, Permittees implement their conservation plan in accordance with the terms and conditions of the issued Permit. The Service monitors Permittee compliance with issued Permits as well as its long-term progress and success.

³²⁰ Refers to any person, as defined in ESA section 3(13), who requires formal approval or authorization from a Federal agency as a prerequisite to conducting an action (50 CFR 402.02). Under the GCP, a Project Proponent is a potential Applicant, and becomes an Applicant at the time they submit a complete application as determined by the Service.

Appendix H. Annual Reporting Requirements

Annual reporting requirements discussed herein are applicable to Permittees³²¹ under this Multi-Bat Species General Conservation Plan (GCP) for Routine Development Projects in New York (NY), Pennsylvania (PA), and West Virginia (WV). The Permittee will prepare and submit an annual report to the U.S. Fish and Wildlife Service (Service) local field office³²² for the duration of the Permit term³²³, detailing, among other things, compliance, effects, conservation measures (CMs), mitigation measures, and monitoring results. The reports must be sent to the local field office via email. The annual report(s) will summarize the previous calendar year's implementation activities and be provided to the Service by the date assigned in ePermits.³²⁴ The due date will allow time for the data from the previous calendar year to be assembled, analyzed, and presented in a clear and concise format.

The annual report will include the following:

- the permit number;
- a description of the project implemented during the reporting period, as well as the cumulative total (i.e., from the start of the Permit term) of acres of forest impacted and the time of the year trees were cut;
- a brief status update on the project. Provide information on whether the project was completed and when. If the activity was not completed, describe what activities still need to occur and include the anticipated timeframe for completion;
- a map showing final tree removal locations, limits of disturbance boundaries, and location (State, County, Township) (if different from the map initially provided within the individual project plan³²⁵ [IPP] checklist), or provide this information via a shapefile;
- the amount of permitted take (as previously identified in your IPP, in acres of suitable habitat or number of trees) that has occurred since the issuance of the Permit and the amount of permitted take that still remains, if applicable.
- confirmation that the CMs from the IPP have been implemented (e.g., FALL/SPRING CM 2, SUMMER CM 13 and 14) and identify those that remain to be implemented;
- the type of mitigation (Permittee-responsible, in lieu fee, or purchase of conservation bank credits) required based on impacts and amount (in acres if applicable);
- the date of mitigation fulfillment (credit purchase or approval of conservation easement or fee title acquisition);
- any additional monitoring results (e.g., compliance and effects, and effectiveness monitoring, see GCP section 4.7.1.1) and bat survey results (if applicable);

³²¹ Per the GCP, a person(s) as defined in ESA Section 3(13) that holds an active Permit. An Applicant becomes a Permittee upon issuance of a Permit.

³²² Contact information for the Service's local field offices can be found in GCP appendix A.

³²³ The GCP is available for adoption and use by eligible Applicants for a period of 10 years, unless amended or renewed. Individual permits issued through the streamlined GCP process may be authorized for a term of up to 5 years. Therefore, Permittees will have up to 5 years to complete their projects, even if the Permit is issued in the final year (i.e., year 10) of the GCP. Permittees that require additional time to complete their projects may seek renewal of their Permits in accordance with GCP section 6.4 and applicable regulations.

³²⁴ https://fwsepermits.servicenowservices.com/nav_to.do?uri=%2Fhome_splash.do%3Fsysparm_direct%3Dtrue.

³²⁵ Information on IPPs can be found in GCP appendix C.

- a description of circumstances that made adaptive management necessary and how it was implemented (if applicable);
- a description of any changed or unforeseen circumstances that occurred and how they were dealt with (if applicable);
- funding expenditures, balance, and accrual; and
- a proposal for any administrative changes and/or amendments.

Once the Permittee completes activities covered by a Permit, the Applicant will notify the local field office that they have completed all Covered Activities and mitigation measures identified in the IPP. The Permittee will provide a final report to the local field office once all mitigation and monitoring requirements are met.

Permittees are *not required to submit an annual report if no impacts to the Covered Species or their habitat occur during a given year* of the Permit's duration. Permittees may send an email to the local field office stating that no impacts occurred during that calendar year. Include the following in the email subject line for each annual report: **“Annual Report – Project title, Permit Number, State [NY, PA, or WV] – No Impacts.”**