



**Department of Defense**  
**Legacy Resource Management Program**

**ANNUAL REPORT – DOD BAT CONSERVATION  
STRATEGY PROJECT**  
**END OF FY 2023 STATUS OF BAT CONSERVATION  
STRATEGY PROJECT UPDATE**

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## ***Department of Defense Legacy Resource Management Program***

### **FY 2023 ANNUAL REPORT – Department of Defense Bat Conservation Strategy Project**

Submitted on 21 November 2023, and amended on 22 December 2023, and 22 February 2024 by David McNaughton and Eric Britzke

In Fiscal Year (FY) 2022, the Department of Defense (DoD) Legacy Program funded an initial effort to provide subject matter expertise and publications to assist the implementation of the Recovery and Sustainment Program (RASP) for two candidate bat species, Tricolored Bat, *Perimyotis subflavus*, and Little Brown Bat (LBB), *Myotis lucifugus*; and two listed bat species, Northern Long-eared Bat (NLEB), *Myotis septentrionalis*, and Indiana Bat (IBAT), *Myotis sodalis*. NLEB was a candidate for uplisting from Threatened to Endangered, which occurred in March 2023, and IBAT has a life history and range closely connected to NLEB. Tricolored Bat was proposed for listing as Endangered by final rule due in FY 2023, though that final rule was not released on time. LBB is proposed for a listing determination in FY 2024. The funded project is titled the DoD Bat Conservation Strategy Project, though Bat Conservation Strategy is only one deliverable expected on the project.

This progress report documents the status of the Legacy Program DoD Bat Conservation Strategy Project at the end of Fiscal Year (FY) 2023. The report details the time and focus spent on labor and support supplied through Legacy Program funding and its results including the status of the consultation process with all components, the status of other bat deliverables, discussion of needs and action items, and immediate focuses for FY24.

#### Background:

The FY23 Scope of Work for this project only included two tasks: 1) initial project meetings between DoD and the United States Fish and Wildlife Service (USFWS) to initiate the development of a DoD Bat Conservation Strategy (BCS), and 2) drafting the DoD BCS. The project was designed to create one singular document covering a consultation effort for all candidate and currently listed species, patterned after the United States Forest Service (USFS) approach. When this approach failed for the USFS, the DoD project team started to informally add scope. There are now three lines of consultation in place of the original DoD BCS: NLEB; Tricolored Bat, and LBB.

The IBAT was listed as Federally Endangered long before the appearance of white-nosed syndrome (WNS) and the three other focal bat species were petitioned. Sharing natural history and range, Indiana Bat is often combined with NLEB in USFWS guidance and protocols. Unlike NLEB, IBAT consultations are already complete with a developed history for most, if not all, of the military bases where they occur. When the DoD BCS mentioned in the project scope of work that it was fragmented into individual consultations, IBAT dropped as a focal species for consultation. The species is still part of the reconceived DoD BCS being drafted, where it remains in focus along with several existing listed species and several new candidate species on the 2023 USFWS National Workplan. The BCS is an overall natural resource management document aimed at reducing future mission impacts from all Defense-managed bat species. To overwrite the consultation record and history on IBAT or other long-listed species would undermine the project team's current consultation efforts, as those consultation documents provide most of the citable basis for our conservation measures.

Additionally, though the DoD BCS was going to contain limited guidance on monitoring and survey approaches, the DoD team felt it prudent to develop a standalone Bat Inventory and Monitoring Guidebook document. This document will also be attached as an appendix to the final BCS.

**Task 1.** Initial project meetings between DoD and the USFWS to initiate the DoD BCS development.

### **1.1 Northern Long-eared Bat Programmatic Consultation:**

Northern long-eared bats are proposed for endangered species uplisting by the USFWS Midwest Region. In mid-March, the DoD team sent the USFWS a nationwide Programmatic Biological Evaluation (PBE) in support of a nationwide permit and Biological Opinion (BO), initiating consultation. The NLEB regional listing authority is located within the USFWS Midwest Region and they remain the team leader for the consultation. Comments from the USFWS were received in late September 2023 on the draft that was submitted to them by the DoD team in March 2023. Their comments gave the DoD team the overall impression that more communication between the Region and DoD is necessary, but to date, the Region has been unable to provide committed staff time to enhance communications. The process and the comments received from the Region show a lack of communication and coordination on NLEB and endangered bat policies across the USFWS. For example, material taken from existing BOs was disregarded, and the DoD team was asked for our sources. In contrast, discussions with the USFWS Northeast Region suggest a much different approach and the acceptance of “likely to affect”, “likely to adversely affect”, and “not likely to affect” determinations. This may signal more restrictive conditions in the Final Guidance and mirrors several comments made by the USFWS on DoD’s PBE, which was treated differently in the initial 2023 Interim Guidance. It appears that Military actions are being held to 1989 Noise and Disturbance levels. Though requested, the Midwest Region did not ask DoD to provide any input to the Guidance, decision keys, or streamlined consultation materials.

### **1.2 Tricolored Bat Programmatic Consultation:**

Tricolored bat is proposed for Endangered Species Act listing as Endangered by the USFWS Northeast Region under a proposed rule in September 2022. Unlike the USFWS Midwest Region, the USFWS Northeast Region was willing to begin consultation informally this spring. During meetings, the DoD team discussed other agencies’ programmatic consultations nationwide, which have been for infrastructure and come with proponent-paid labor. The DoD team was able to explain that these Defense bat-related consultations cover ongoing activities with as much future action as DoD can currently forecast. The USFWS Northeast Region agrees that there is a duty to perform the consultation due to the ongoing daily activity that is included. The USFWS Northeast Region has asked DoD to provide input for their determination key, rules, and Information for Planning and Consultation (IPAC) tools. The hope is to divert a lot of the potential PBE content to streamlined consultation, but the Region has been struggling to keep up with streamlined requests on NLEB. As of 22 February 2024, the final rule to list Tricolored Bat as Endangered has not yet been published despite National Workplan expectations of final listing before the end of FY 2023. The DoD team still plans to draft and submit a nationwide PBE for this species.

### **1.3 Little Brown Bat Programmatic Consultation Preparations**

Little Brown Bat has been postponed for the listing process at least twice, avoiding emergency declaration in 2014 and avoiding the formal listing process after the first species status assessment in 2019. The USFWS moved determination again in FY 2023, postponing it until FY 2024. Indicators suggest that the USFWS is very willing to consider a 7(a)1 or similar effort to avoid listing or any other options available to postpone the determination. The DoD team is pursuing a potential 7(a)1 by starting a

Federal Government-wide conversation about aligning BCS documents to share framework, while still allowing Departmental autonomy over approach within the framework. Should 7(a)1 not be successfully coalescing in time, the DoD team is prepared to write a third programmatic document and begin consultation, again with USFWS Midwest Region.

#### **1.4 USFWS Full-Time Equivalent (FTE)**

The USFWS Northeast Region has asked for staffing support to assist in the creation and negotiation of the Tricolored Bat Programmatic Biological Evaluation and subsequent BO. Recent programmatic agreements from other Federal agencies have typically provided funding for their own additional staffing. The USFWS Northeast Region clarifies that these have mostly been proponent paid because they are tied to “new projects” arising from infrastructure bills and other large funding sources, and require unusual workloads. As Defense bat consultations are initiated to continue ongoing daily work for the military, there is a greater requirement for the USFWS to consult using available staff. The timeline for large programmatic consultations is typically 4-5 years post-listing, and the speed at which DoD needs a BO suggests a USFWS FTE would be beneficial to the process and possibly the only means to get same-year results. The Northeast has been mostly quiet since missing the National Workplan deadline.

The DoD team is working to move that request forward with a proposal and finding a funding source. The Federal hiring process and other factors place pressure to work quickly to fulfill the request.

### **Task 2. Draft DoD Bat Conservation Strategy**

The original scope of work for the project conceived the BCS differently than our adjusted, current plan, as discussed in the Background section above. The BCS is still a planned deliverable in the FY24, progress discussed here, but there were other FY 2023 deliverables conceived from the original concept of the BCS. These include the new BCS concept (2.1), a list of military actions that affect bats (2.2), a list of needed research and mitigation measures (2.3) and a guide to inventory and monitoring methods for installations that need to start monitoring programs or expand them to meet Endangered Species Act requirements (2.4).

#### **2.1 Bat Conservation Strategy**

The BCS is a common means for most or all Federal agencies in approaching bat conservation (holistically), while trying to prepare for multiple species listings and ongoing disease effects from WNS. The BCS technique was forwarded as a consultation mechanism to the USFWS by USFS in 2022, but the approach was ultimately unsuccessful. Where a BCS may be successful is in demonstrating a unified commitment across agencies to a species’ conservation effort, like a 7(a)1 effort, especially for those species that pose difficult problems for the USFWS to list and administrate. Species that could avoid listing through coordination on agency BCS documents include LBB, Hoary Bat (*Lasiurus cinereus*), and Pacific Sheath-Tailed Bat (*Emballonura semicaudata*). Species just beginning to show signs of disease-driven population disruption may also be best managed through a combined BCS including Cave Myotis (*Myotis velifer*), Yuma Myotis (*Myotis yumanensis*), Long-Legged Bat (*Myotis volans*), and Western Long-Eared Bat (*Myotis evotis*). Additionally, the BCS can also enhance ongoing management efforts for Federally listed bats including the Gray Bat (*Myotis grisescens*), Hawaiian Hoary Bat (*Lasiurus cinereus semotus*), Ozark Big-eared Bat (*Corynorhinus townsendii ingens*), Virginia Big-eared Bat (*Corynorhinus townsendii virginianus*), Florida Bonneted Bat (*Eumops floridanus*), and Mexican Long-nosed Bat

(*Leptonycteris nivalis*). Development of the BCS is ongoing and expected to result in a draft document in FY 2024.

## **2.2 Military Actions**

The military actions list pulled in FY 2022 and FY 2023, was included in the NLEB Programmatic, and is intended to be reused to develop consultation documents for Tricolored and Little Brown Bats. There is still considerable doubt as to how to handle a few of the activities, including hover and aircraft issues and ground vibrations and infrasound in the presence of hibernacula. The Space Force, specifically Vandenberg Space Force Base, has discussed providing local funding for the BCS team to study rocketry effects on *Myotis* and other species living in the vicinity of launch pads. The full list of actions is included in Attachment 1, previously approved by the Service Branches and OSD. The DoD BCS team still welcomes additional inclusions if the Service Branches feel more are applicable or necessary.

## **2.3 Research Needed and Mitigation Measures:**

The DoD BCS team has started to assist in the management and filtration of research and support ideas identified by the Legacy Program and OSD offices. A revised and reprioritized list of research needs are incorporated as Attachment 2. This list was previously approved by the Service Branches and OSD. The DoD team still welcomes additional inclusions and has made minor adjustments to the prioritization and list since the early FY 2023 version.

## **2.4 Bat Inventory and Monitoring Guidebook:**

The Bat Inventory and Monitoring Guidebook is being drafted, and is intended to provide considerations and standards to unify data for the eventual annual reporting on the programmatic BOs. The document will also provide reference material for installations seeking to create monitoring programs, perform occurrence surveys, and fulfill Sikes Act requirements, as well as Endangered Species Act duties. This document will be useful in determining methods available for addressing bat conservation knowledge gaps at the installation level, providing language for contracting, and providing the means of analyzing returned and compiled data.

The guidance document is paralleled with a search for centralized data storage mechanism to make the data both useful and to aid in the execution of expected finalized programmatic BOs. To this end, the DoD team has been negotiating with the North American Bat Project (NA Bat)—the major Federal bat data repository, housed within the US Geological Survey (USGS)—to administer DoD's bat data; to make tools and workflows accessible for all of the Services; and to allow bat data to be used for consultation purposes, as well as informing installation managers about population status, regional species health, and habitat and management decision outcomes.

## **Development of a Mammal Initiative**

The efforts described in this document have not been the work of just the two Principal Investigators, but rather a collaborative effort of subject matter experts across Services to inform, edit, and enact the management and conservation measures that have been proposed. This team is currently bat-focused due to the work prepared to date, but may expand in the future to assist cross-installation support of many other small and non-game mammal issues. The team consists of:

Eric Britzke, ACOE/ERDC (Principal Investigator, National Lead)

David McNaughton, Navy/NAVFAC SW (Principal Investigator, National Lead)  
Chris Dobony, Army/Ft. Drum  
Kirsten Christopherson, Air Force/AFCEC  
Seth Berry, Navy/NSWC Indian Head  
John Pilcicki, Army/Ft. Belvoir  
Kevin Warner, IDARNG/Orchard Training Center  
Chris Hauer, PAARNG/Fort Indiantown Gap NGTC

The team has been instrumental in understanding cross-platform and cross-Service concerns and viewpoints, gathering existing consultations and literature, providing editing and commentary on proposed language and actions, and performing assistive efforts. Several others have declined to formally participate on the team but have been influential in the effort including: Jay Rubinoff, National Guard Bureau; John Rohm, MCB Quantico; Charles Pekins and Virginia Sanford, Fort Cavazos; Rhys Evans, Vandenberg Space Force Base; Bill Berry, MCI West; and the many Service leads providing input to the effort. The team has also discussed issues on the consultations and BCS with USFWS, BLM, USFS, and USDA, and plans to interact with NPS and USDOT.

While other Defense conservation initiatives such as DoD Partners in Flight (DoD PIF) and DoD Partners in Amphibian and Reptile Conservation (DoD PARC) are established and recognized, the DoD mammal initiative is not being initiated as the result of a pre-existing Federal Memorandum of Understanding. There is no non-governmental organization or national partnership structure adjacent to the Defense effort in the case of mammals. For this reason, the group has struggled to define itself in the community's understanding. In 2024, more time and attention will be paid to cultivating the initiative and assisting in greater mammalian conservation needs.

## **Attachment 1 - Identified Threats to Northern Long Eared Bats and Other Candidate Species as a Result of Military Actions**

- A. Existing Firing and Maneuver Ranges (UXO, Small Arms, Ground to Air, Air to Ground, testing)
- B. Military Training Smoke and Obscurants
- C. Field Deployment and Training
- D. Cave and Subterranean Training
- E. Air Operations (Helicopters and Fixed-Wing Aircraft to Include Drones)
- F. Demolitions, Artillery, Mortars – Noise and Vibrations
- G. Installation Operations and Construction
  - New construction and previous footprints
  - Facility maintenance
  - Structural Demolition
  - Bridge maintenance
  - Above ground utilities and communication lines
  - Culvert, conduit, and drainage ditch maintenance
  - Exclusions and bat removals
- H. Bunkers and Seldom-used Structures
- I. Artificial Lighting and Roosts
- J. Landscape Maintenance (mowing, tree trimming, removal, fences)
- K. Forest Management
  - Silviculture
- L. Invasive species and pest control
  - Aerial delivery
  - Facilities pests
- M. Fire Management
  - Fire suppression and firebreak maintenance
  - Prescribed burns
- N. Wetlands and Habitat Restoration

## **Attachment 2 - Research Needs and Mitigation Strategies for DoD Bat Conservation Strategy (BCS)**

**Initially, bat conservation efforts require baseline information on the species and for inventorying and monitoring to be conducted on the installation. In addition to the general co-occurrence, more specific information on roosting ecology is also needed. Below are some priority research needs to cover these knowledge gaps.**

1. Central to our data needs for effective bat conservation is the ability to effectively conduct inventory and monitoring.
  - a. Vegetation analysis (community, structure, and key indicator species) to efficiently determine species' ranges without the need for typical sampling approaches, if feasible
  - b. Methods to automate monitoring of bat colonies
  - c. Improvements in automated call analysis software
  - d. Relationship between NABAT sampling and installation level occurrence
  - e. Modelling efforts to assist in identifying priority areas for occurrence sampling, if feasible
  - f. Sampling protocols for non-summer habitat species detection
2. Additional needs on habitat use
  - a. Information is needed on the migration of bats (even for bats that end up hibernating)
    1. Timing of movements
    2. Factors that affect migration timing
    3. Methods that allow assessment of migratory movements
    4. Effects of anomalous weather incidents – hurricanes, early winter storms, cold fronts, late warm weather – on both emigration and swarming/pre-hibernation activities
  - b. Habitat use
    1. Maternity season and non-maternity season use

**As installations develop baseline information on bats, additional research needs become apparent.**

1. Impacts of military operations on bats
  - a. Aircraft, rotary wing
  - b. Military noise in general
  - c. Smoke/obscurants
  - d. Rocketry and surface-fired weapons platforms
  - e. Training during hibernation (impacts on caves, sound transmission through the ground)
2. For species like the little brown bat (but it applies to multiple species) the issue of artificial roosts is important.
  - a. Research is needed on the distance, types of structure, timing of exclusion, and species of existing roost sites where artificial roosts can be effective mitigation is needed.
  - b. Artificial roosts - sources or sinks for bat populations (by species and type of roost)
  - c. Bridge and structure designs – bat attractive and bat repellent

**Finally, there are some miscellaneous research needs that might be important for some installations.**

1. Determine if credit banking assist in conservation efforts



2. Technological advances that improve duration and detection of marking (telemetry, PIT tagging)
3. Methods to assess importance of subterranean features not accessible to human for bats
3. WNS research
  - a. Impacts of WNS in edge communities (coastal, desert, and far south)
  - b. Pd growth characteristics in atypical hibernation conditions
  - c. Transport mechanisms for Pd in warm climates

**DoD BCS Team-developed Documentation and Planning needs.**

1. Biosecurity statements regarding fungi, viruses, enclosed environments, and human/wildlife conflicts.
2. Contracting language for acoustics, netting, and telemetry (other industry standards?).
3. Comprehensive strategy (not policy!)
4. INRMP guidelines
5. Consultation guide
6. IPAC tools
7. BMPs for releases and exclusions

**Support needs**

1. Lab support for WNS and virome assays.
2. Carcass/guano identification.
3. Detector setup/analysis.
4. Strengthened MOU and support letter for NA Bat