

# 2023 RANGE-WIDE INDIANA BAT AND NORTHERN LONG-EARED BAT SURVEY GUIDELINES

## FREQUENTLY ASKED QUESTIONS

(Revised 03/14/2023)

This Frequently Asked Questions (FAQs) document is intended to help address questions related to changes to the U.S. Fish and Wildlife Service’s (USFWS) 2023 version of the range-wide bat survey guidelines. Previous versions of the survey guidelines FAQs (2022 and 2013) can be found here (<https://fws.gov/library/collections/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>). After reviewing the Guidelines document, those who opt to complete surveys should coordinate with their state’s Ecological Services Field Office for any questions or clarifications that are not addressed in this FAQ document.

1. Question: If a USFWS presence/probable absence survey for the Indiana bat (IBAT) and/or northern long-eared bat (NLEB) was conducted and approved prior to 2023 at a different level of effort (LOE) than the new 2023 LOE recommendations, is there a need for the project proponent to resurvey using new LOE recommendations (Table 1)?

Response: No, the USFWS will honor the results of previously approved survey(s) completed under recommended survey LOE in place for IBAT and NLEB at the time the survey was completed and approved. As a reminder, negative survey results are valid for a period of 5-years (e.g., a survey completed on July 1<sup>st</sup>, 2022 will be accepted until May 15<sup>th</sup>, 2027). The USFWS will also honor the results of approved survey(s) completed in 2023 for the tricolored bat (TCB) for 5-years (also see response to Question 5 below).

Table 1. Summary of current survey LOEs for IBAT and NLEB. Changes and additions from the 2022 guidelines are highlighted in blue.

Species	Region	MIST-NETTING (net nights)		ACOUSTICS (detector nights)	
		Linear (per km)	Non-Linear (per 123 ac.)	Linear (per km)	Non-Linear (per 123 ac.)
IBAT	Range-wide	2	6	4	10
NLEB	Seasonal Range (non-coastal areas)	4	10	4	14
	Non-seasonal Range (year-round active / coastal areas)	2	6		

2. Question: Why are acoustic and mist net survey recommended LOEs now different for the IBAT and NLEB?<sup>1</sup>

Response: Because white-nose syndrome (WNS) has caused variable population impacts across IBAT and NLEB ranges, the USFWS has taken an adaptive management approach in setting appropriate LOEs for presence/ probable absence surveys. We have periodically collected and examined regional and range-wide occupancy and detection data and revised the Survey Guidelines and associated recommended survey LOEs using this data accordingly.

Data from previous mist-netting LOE calculations for IBAT and NLEB were limited in geographic and temporal scope – the 2023 analysis is more robust and now better mirror the nationwide approach for USFWS calculation of acoustic LOE for both species. Mist-netting data collected between 2016 and 2022 within close proximity to known colonies were extracted from the USFWS Section 10 permit-reporting spreadsheet database. This data was then analyzed to inform and update the 2023 mist-netting LOEs for both species. Our updated analysis no longer calculates LOE for IBAT separately for pre- and post-WNS recovery units, but instead uses only data from known, post-WNS colonies throughout the species range. The change in analysis approach is not an indication that IBAT population declines have subsided in the Northeast or Appalachian Recovery Units (RUs) or that population declines have occurred in the Midwest or Ozark-Central RUs. Since 2019, according to recent (i.e., 2022) IBAT population estimates (USFWS unpublished data 2023), declines have continued in the Northeast (-7%) and Appalachian (-27%) RUs while the Midwest and Ozark-Central RUs have seen an approximate 11% and 7% increase, respectively.

3. Question: Why is there now a different mist-netting LOE for NLEB in year-round active/coastal areas? When can surveys be conducted in these areas?

Response: The new year-round active NLEB mist-netting LOE was calculated from a combination of local data from our bat conservation partners and Section 10 permit reporting in that portion of the species range. Mist-netting data collected throughout the year from 2016-2022 in the Coastal Plain of North Carolina, South Carolina, and Virginia were used in this analysis to inform our recommended LOE.

In the year-round active portion of the NLEB range, the Service will now accept captures/ acoustic detections of NLEBs collected March 1 – November 15 and treat them the same as traditional summer records. While NLEBs may be captured in every month of the year in occupied coastal plain regions, late fall/early winter is not an optimal time to conduct surveys because of lower and inconsistent temperatures as well as reduced availability of insect prey.

4. Question: How does the uplisting of the NLEB from threatened to endangered status

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<sup>1</sup> All the analysis discussed below was completed through our partnership with the U.S. Geological Survey (USGS). For additional information on these analyses see Methods to Evaluate and Develop Minimum Recommended Summer Survey Effort for Indiana Bats: White Paper (Niver et al. 2014) and the subsequent Addendum 1 (Niver et al. 2018), Addendum 2 (Armstrong et al. 2022), and Addendum 3 (Armstrong et al. 2023) for further information.

change the considerations regarding completing presence/ probable absence surveys?

Response: The USFWS recently published the final listing rule to reclassify the NLEB as endangered on November 30, 2022. The final rule will go into effect on March 31, 2023. When the final rule becomes effective, the 4(d) rule will be nullified as the Endangered Species Act does not allow application of 4(d) rules for species listed as endangered. The new Interim Consultation Framework will then be in place and available for ongoing and new projects that meet the same conservation measures included in the 4(d) rule. However, for proposed project activities that may impact NLEBs with a possibility of not being completed prior to March 31, 2024 (when the Interim Framework expires), we recommend that project proponents discuss with field office(s) if surveys may be prudent to avoid potential delays to their project timelines. As always, it is best to coordinate with the appropriate field office(s) for further direction prior to conducting surveys.

5. Question: Is there an established LOE for conducting tricolored bat (TCB) surveys in 2023?

Response: The 2023 range-wide bat survey guideline protocols may be used for TCB presence/probable absence surveys using the NLEB level of effort (LOE) for the 2023 field season. We collected preliminary data from these datasets to complete an initial evaluation of LOE for TCB to ensure that deferring to the NLEB LOE for 2023 was acceptable. The unique factors and differences from NLEB protocols include: the definition of suitable summer habitat for tricolored bats (Appendix A), radio-tracking of TCB should prioritize identification of the immediate roosting area (if the exact roost locations cannot be determined) of the transmitted bat given the frequent difficulty in locating the bats exact roosting location (Appendix D), emergence surveys of potentially suitable (versus known) roost trees for TCB is not a viable option given the variability in roosting locations (Appendix E), use of a 3-mile conservation buffer around TCB capture/detections and 1.5-mile buffer around TCB roost trees/areas for applying the Outer-tier Guidance (Appendix G), and internal surveys of potentially suitable hibernacula may be completed for TCB (Appendix H).

6. Question: Is there a difference in analyzing acoustic survey data in the western portions of the NLEB and TCB ranges (Figure 1 and Figure 2)?

Response: Currently, there are no automated acoustic ID software programs approved for use in the portion of the NLEB range that overlaps with acoustically similar western species, and the same is true for TCB. The USFWS ensures accuracy of automated acoustic bat ID software programs by testing them against an independent acoustic call library (i.e., master test library or MTL) of known zero-crossing (ZC) and full-spectrum (FS) calls of all Eastern U.S. bat species whose ranges overlap with the Indiana and/or northern long-eared bat.<sup>2</sup> While the ZC and FS MTLs are capable of testing software for eastern bats, we have identified some portions of the NLEB range where the species overlaps with western bat species (Figure 1). Similarly, there are portions of the TCB range that also overlaps with western bat species (Figure 2). A KMZ file<sup>3</sup> will be

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<sup>2</sup> The USFWS's standards and testing criteria are available online ([Testing Procedures, Performance Criteria and Approval Process for Automated Acoustic Bat ID Software](#)).

<sup>3</sup> A KMZ file is a zip-compressed .KML file that stores map locations viewable in various geographic information

available from USFWS Field Offices affected to assist project proponents in identifying whether their project is in or out of these zones. Until the USFWS is able to test the accuracy of submitted acoustic ID software programs for use in the far western portion of the NLEB range (i.e., western species are incorporated into both the ZC and FS MTLs), we are relying on the use of two or more of the currently available software programs (approved and candidate)<sup>2</sup> in these locations to inform presence/ probable absence for NLEB and TCB.

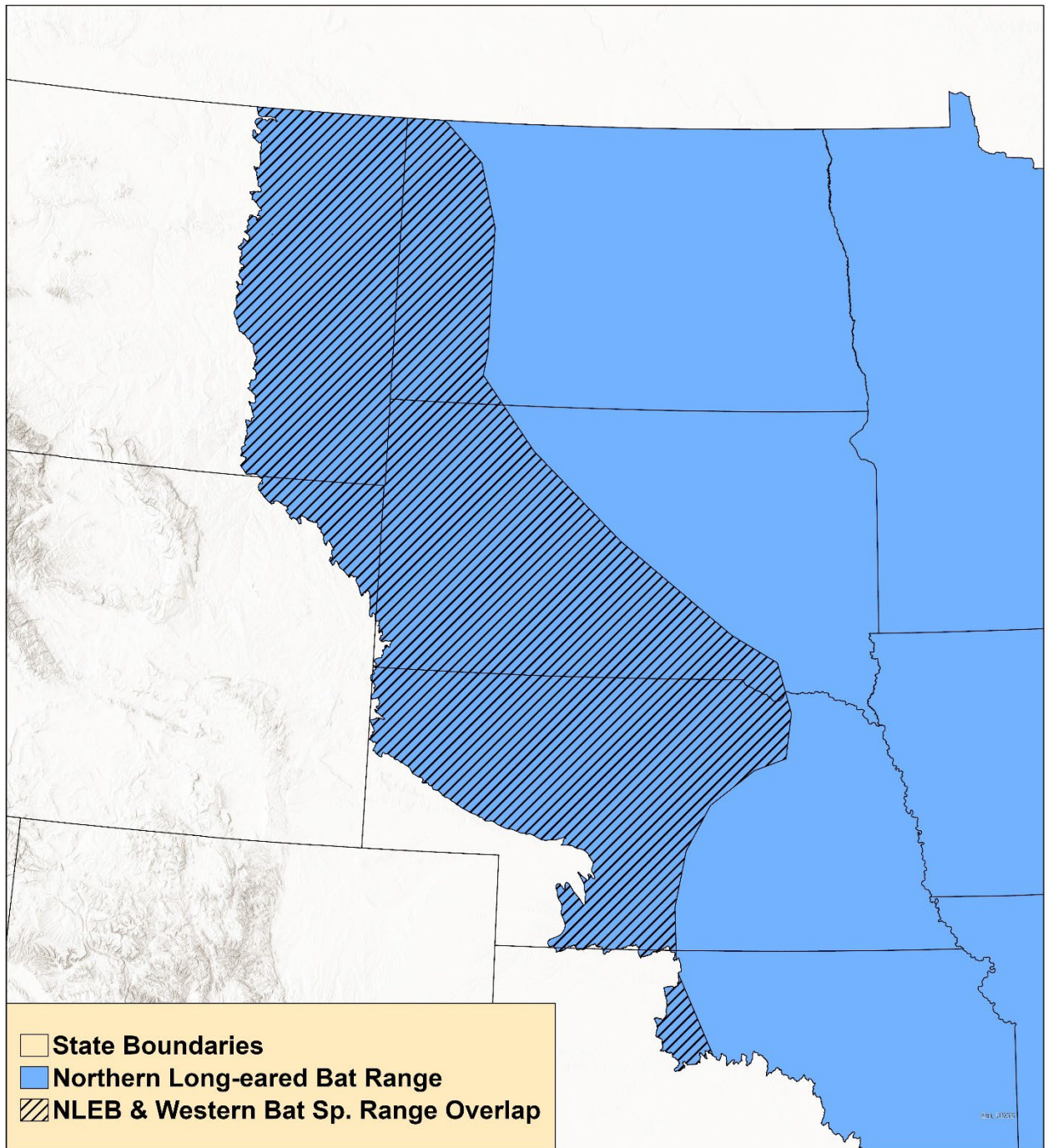




Figure 1. Portion of NLEB range overlapping with western bat species.

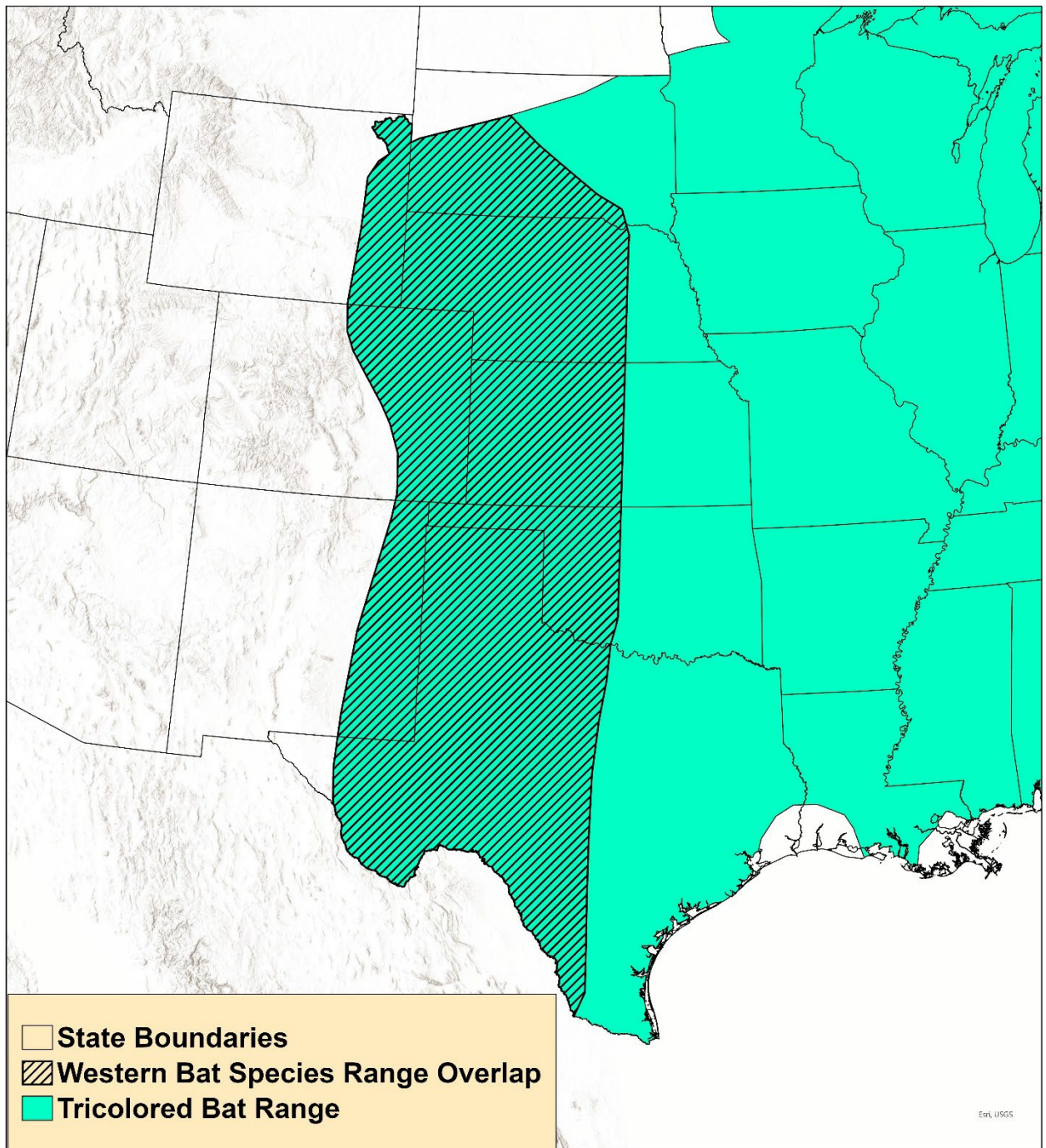


Figure 2. Portion of TCB range anticipated to overlap with western bat species.

7. Question: Are surveyors required to use the new Study Plan Proposal form provided in the guidance?

Response: The Study Plan Proposal form provided is not required to be used for proposed P/A surveys under the Guidance but is highly recommended. Use of the fillable

form will ensure all the necessary information is provided to the USFWS FO and expedite review of your study plan. Surveyors should, at a minimum, ensure that all the data fields listed in the example form are included in whatever format study plan they opt to submit to the USFWS FO(s) for approval prior to surveying.

8. Question: How should historical, pre-WNS known summer buffers be addressed moving forward for IBAT and NLEB and how does that impact survey guidelines? Year-round active NLEB?

Response: Prior to emergence of WNS, NLEBs were documented widely throughout much of the eastern U.S. and Canada. Although not nearly as common today, surveys show that the species continues to occur in pockets distributed throughout the portion of its historic range impacted by WNS. NLEB populations appear to be doing better in portions of the Southeast Coastal Plain (Virginia, North Carolina, and South Carolina) and Louisiana where they are active year-round in forested or wooded habitats due to mild winter temperatures, and these populations, which are not dependent upon caves or mines for hibernation, may not be susceptible to WNS. Similarly, IBATs within the Northeast and Appalachian Rus have seen significant declines due to WNS; however, populations continue to do better within the Midwest and Ozark-Central RUs (USFWS unpublished data 2023).

Due to the severity of the impact of WNS on populations across much of the NLEB and eastern IBAT RUs (i.e., Northeast and Appalachian) ranges, there is uncertainty where surviving NLEBs and IBATs are located in portions of their ranges. To address this uncertainty, we recommend allowing project proponents whose project is either  $\leq 123$  acres in size or affects  $\leq 1\%$  of existing suitable summer habitat within a 5-mile (IBAT) or 3-mile (NLEB) buffer (whichever is greater) the opportunity to survey in both the inner-tier and outer-tier of known Seasonal Range NLEB buffers and IBAT buffers within the Northeast and Appalachian RUs when the buffered occurrence was prior to 2 years<sup>4</sup> after WNS was first confirmed in the state. We recommend coordinating with the local USFWS FO in the state where the proposed project survey is planned to determine whether inner-tier NLEB and/or IBAT buffers can be surveyed or not. Provided proponents use at least the current prescribed minimum LOE for NLEBs and/or IBAT in these locations and the survey report is approved by the Field Office, the USFWS would accept the results of the survey as evidence of presence/probable absence. For example, if WNS was confirmed in 2011, project proponents can survey both inner and outer tiers of a known buffer for presence/probable absence if the occurrence was in 2012 or earlier. For this example, presence/probable absence surveys could not be conducted in the inner tiers of occurrence buffers documented in 2013 and later.

9. Question: Do I have to transmitter and radio-track IBATs and/or NLEBs captured during surveys to find roost trees?

Response: The decision whether to transmitter and radio track captured IBAT(s) and/or NLEB(s) must be coordinated with the local USFWS FO(s) during the survey planning

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<sup>4</sup> An alternative year may be used if the USFWS FO(s) has data to more precisely support when WNS affected abundance and distribution in their state.

process. USFWS Section 10 permits require FO approval for each individual survey study plan to be in compliance. Field Offices have the authority to deny a proposed survey if it is determined that the study plan is insufficient for Section 7 consultation requirements of the ESA. For example, radio-tracking of captured IBAT and/or NLEB may be required by individual FOs and should be discussed as part of the study plan and pre-survey coordination.

10. Question: What does it mean that Appendix I is a “PILOT” appendix?

Response: Appendix I (Calculating LOE for a Combined Acoustic and Mist-netting Survey) is a new appendix that the USFWS is implementing in 2023. This year is considered a “pilot” for this approach because we are interested in receiving feedback on its effectiveness in implantation and based on feedback, plan to evaluate if this is an appropriate approach to incorporate into the guidelines fully going forward.