



# Study Plan Form for Bat Surveys and Monitoring (v. 1.0)<sup>1</sup>

## PROJECT & SURVEY INFORMATION

Project Name: \_\_\_\_\_ Proposed Survey Start Date: \_\_\_\_\_

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

Project Location: State(s): \_\_\_\_\_ County(s): \_\_\_\_\_

Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

REQUIRED: Attach or provide links to Google Earth<sup>®</sup> KMZ files (preferred) and/or shapefiles (mapping must show project boundaries, impacted forest habitat (if known) and all proposed survey sites)  
Files are attached: Yes                      No  
File Links: \_\_\_\_\_

Project Summary. In the space provided below, please provide a concise statement of what the project proponent is proposing to do including any activities that will permanently or temporarily alter the current environment and existing habitat features).

## CONTACT INFORMATION

Project Manager/Primary Point of Contact (POC): \_\_\_\_\_ Phone: \_\_\_\_\_

Field Survey Crew Leader (if different from POC): \_\_\_\_\_ Cell Phone: \_\_\_\_\_

Institution/Company Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

POC Email Address: \_\_\_\_\_

USFWS Sec. 10 Permit No.(s) (if applicable): \_\_\_\_\_

State Permit No.(s) (if applicable): \_\_\_\_\_

<sup>1</sup> Unless otherwise directed by the Service, surveyors *may* complete this fillable form, in lieu of a traditional narrative format, and submit it (and supporting files) to the Ecological Services Field Office in the state(s) where the work is to be completed (<https://www.fws.gov/our-facilities>). Use of this form is not a requirement at this time. Our goal is to improve pre-survey coordination and to expedite the Field Office review and approval process. Please submit your study plan at least 15 working days in advance of your proposed survey start date. Suggestions for improving this document may be sent to [Indiana bat@fws.gov](mailto:Indiana_bat@fws.gov).

Have project proponents been informed that abiding by protective time-of-year restrictions (where available) may be sufficient to avoid take of bats and (in some cases) may negate the need for a bat survey? Yes No

Have project proponents been informed that the Service does not require presence/probable absence surveys for federally listed species and that presence can be assumed in a project area containing suitable habitat? Yes No

Will this survey be conducted on private or public lands? (Check both if applicable): Private Public

Has permission of all necessary landowners/managing agencies been obtained? Yes No

If no, explain: \_\_\_\_\_

Does this project have a federal nexus? Yes No Unsure

If yes, explain: \_\_\_\_\_

IPaC<sup>2</sup> Consultation Code (if applicable): \_\_\_\_\_

Purpose of Survey: Official P/A Survey Research Monitoring  
Educational Outreach/Training Other: \_\_\_\_\_

Survey Target Species: Indiana bat (IBAT) Northern long-eared bat (NLEB)  
Tricolored bat (TCB) Other: \_\_\_\_\_

Has a Phase-1 Habitat Assessment\* of the project area been conducted? Yes No  
If yes, how was the habitat assessment conducted? On-the-ground: Aerial imagery Combo  
(\*if available, attach a written report)

Is suitable habitat present (or assumed present) for all "target" species? Yes No

If no, explain: \_\_\_\_\_

Does this project fall within the outer-tier of any "target" species known home range? Yes No Unsure

If yes, which species: \_\_\_\_\_

### Project Configuration

Is this project **linear** (>1 km in total length)? Yes No Combo Unsure

If yes, how many 1-km sections containing suitable IBAT/NLEB habitat in km (mi) will be impacted? \_\_\_\_\_

Is this project **non-linear**? Yes No Combo Unsure

If yes, how many acres of suitable IBAT/NLEB habitat is in the overall project area? \_\_\_\_\_

If yes, how many acres of suitable IBAT/NLEB habitat will be directly impacted/cleared? \_\_\_\_\_

## **METHODOLOGY & SURVEY LEVEL OF EFFORT<sup>3</sup>**

### ACOUSTICS

Total number of detector sites proposed to be surveyed: \_\_\_\_\_ Number of detector nights/site: \_\_\_\_\_

Total number of detector nights for entire survey: \_\_\_\_\_

<sup>2</sup> <https://ipac.ecosphere.fws.gov/>

<sup>3</sup> Survey level of effort (acoustic or netting) must be spread over at least two calendar nights/survey site.

Total proposed number of calendar nights to complete the entire survey: \_\_\_\_\_

Detector(s) (Brand, Model): \_\_\_\_\_ Microphone(s): directional omnidirectional

Recording Format: Full Spectrum Zero-Crossing

FWS-Approved<sup>4</sup> Acoustic Bat ID Software: KPro vers. \_\_\_\_\_ KPro Classifier, NA vers. \_\_\_\_\_ BCID vers. \_\_\_\_\_  
Other Candidate Programs (e.g., Sonobat) vers.: \_\_\_\_\_

**Species to be included for automatic software ID classification analysis:**

EPFU CORA COTO LABO LACI LANO LASE TABR MYCI MYEV MYGR MYLU  
MYLE MYSE MYSO MYTH MYVO NYHU PESU Others: \_\_\_\_\_

Will qualitative analysis (i.e., manual vetting) be used? Yes No Unsure

Name(s) of qualified biologist(s) who will be conducting qualitative/manual acoustic identifications (attach resume or link with qualifications): \_\_\_\_\_

**MIST-NETTING**

Total number of net sites to be surveyed: \_\_\_\_\_ Total number of net nights/site: \_\_\_\_\_

Total number of net nights for entire survey (No. of sites X No. of net nights/site): \_\_\_\_\_

Total proposed number of calendar nights to complete the entire survey: \_\_\_\_\_

- A) Maximum number of net set-ups that will be operated/checked (10-min interval) on a given calendar night at a given survey site: \_\_\_\_\_
- B) Minimum Number of personnel present to operate/check X (see A) net set-ups on a given site: \_\_\_\_\_
- C) Proposed Staffing Rate (A divided by B): \_\_\_\_\_

**Staffing Rate**

Number of Section 10-permitted biologists per net site (or state-permitted in USFWS R5): \_\_\_\_\_

Will any bats be banded? Yes No

If yes, describe your proposed bands (color and letter-numbers) and banding scheme: \_\_\_\_\_

Will any biological samples be collected from captured bats (e.g., guano, hair, swab, wing punch)? Yes No

If yes, explain: \_\_\_\_\_

**RADIO-TRACKING**

Will any bats be radio-tagged and tracked? Yes No

If yes, please answer following:

- Which species will be radio-tagged? \_\_\_\_\_
- Name of USFWS Section 10 permitted biologist(s) who will apply transmitter(s): \_\_\_\_\_
- Make/model and approximate weight of transmitter(s) to be used: \_\_\_\_\_
- Estimated life-span of transmitters to be used: \_\_\_\_\_
- Frequency range (MHz) of transmitters (e.g., 150.xxx or 172.xxx): \_\_\_\_\_
- If radio-tracking multiple targeted bats/species, what criteria will be used in selecting which bats will be tracked?  
\_\_\_\_\_

Will all radio-tagged bats be tracked (min. of 4-hrs. search effort/day) to their diurnal roosts for the minimum recommended period of 7 days? Yes No

<sup>4</sup> <https://www.fws.gov/media/automated-acoustic-bat-id-software-programs>

If no, explain: \_\_\_\_\_  
Will night-time foraging data/telemetry be collected? Yes No

**EMERGENCY SURVEYS**

After diurnal roost sites of radio-tagged bats are identified, will emergence surveys be conducted at each identified roost (assuming landowner permission is obtained)? Yes No

If yes, how many emergence surveys/roost? \_\_\_\_\_

Have you identified a small number (e.g., ≤10) of potentially suitable roost trees\* that you propose to conduct emergence surveys for? Yes No

*(\*If yes, provide photographs of each tree documenting that all of the tree can be observed by the surveyor along with coordinates (lat/long and/or KML/shapefile) of all trees to be surveyed.)*

**POTENTIAL HIBERNACULA SURVEYS**

Are you aware of any known hibernacula used by the target species within the project area itself or nearby?

Yes No Unknown

If yes or unknown, list sites or explain: \_\_\_\_\_

Has your desktop analysis identified any natural or man-made features that could be used as a hibernaculum by any of the target bat species? Yes No Unknown

If yes, underground features (e.g., caves, mines, tunnels, bunkers, cisterns) present: Yes No

If yes, above-ground features\* (e.g., crawl spaces) present: Yes No

If unknown, explain: \_\_\_\_\_

Are you requesting approval of a field survey for potential hibernacula at this time? Yes\* No

*(\*If yes, attach a separate narrative explaining how the project area(s) will be surveyed for potential hibernacula.)*

Are you submitting the results of a Phase 1 Habitat Assessment of potentially suitable hibernacula identified from field surveys? Yes\* No

*(\*If yes, provide a Phase 1 Habitat Assessment Data Sheet for each potential hibernaculum/portal(s)<sup>5</sup> identified to be surveyed.)*

**ADDITIONAL SURVEY INFORMATION<sup>6</sup>**

Will the proposed bat survey deviate from the current version of the USFWS summer survey guidelines?<sup>7</sup> Yes No

If yes, provide justification for any departures or modifications to the guidelines (if applicable) below:

I hereby acknowledge that the information being provided to the Service is accurate and complete as of today's date.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

<sup>5</sup> If multiple cave entrances/portals, please list all locations.

<sup>6</sup> Attach additional pages to this form, if needed.

<sup>7</sup> Proposed surveys deviating from the current IBAT & NLEB Summer Survey Guidelines will only be accepted with a thoroughly described justification. Coordinate with your local USFWS Field Office (<https://www.fws.gov/our-facilities>) for acceptable modifications.