



OHIO DIVISION OF WILDLIFE AND U.S. FISH AND WILDLIFE SERVICE (OH-FIELD OFFICE) JOINT GUIDANCE FOR BAT SURVEYS

MAY 2025

This document serves as guidance for state recommendations regarding tree clearing and/or subsurface disturbance as it relates to bats. This document also covers guidance for conducting bat surveys including summer mist-netting, acoustic surveys, and winter habitat assessments.

This document does not supersede any requirements listed on permits or facility certificates. All permit conditions must be strictly adhered to for permits to be valid and for renewal of permits beyond the existing year. This guidance applies to state recommendations only. Contact the USFWS to determine if federal consultation is also necessary to comply with federal law.

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ODNR-DOW and USFWS OHFO Recommendations for Tree Clearing:

During the spring, summer, and early fall months, all bats in Ohio use trees as roosts. Several of the federally and/or state endangered species that occur in the state rely on trees for their maternity roosts where pups are born and raised until they are independent in the late summer. Because of the importance of forest habitats in the warmer months, tree clearing in Ohio is typically not recommended to occur between April 1st and September 30th each year. The recommended time to clear trees is between October 1st and March 31st. If seasonal clearing during those dates is not possible, both ODNR-DOW and USFWS OHFO recommend the following steps:

Step 1: Coordinate with **ODNR-DOW** and **USFWS OHFO** regarding existing records for state and federally listed endangered bat occurrence information. **ODNR-DOW** recommends that a full environmental review be completed (found [HERE](#)) and **USFWS OHFO** recommends that an IPAC form be filled out (found [HERE](#)) to determine presence of listed bat records. Then a request for technical assistance should be sent to Ohio@fws.gov with the subject line: Project submittal for review (IPaC#xxxx-xxxx).

Step 2: If recommended by either agency, conduct a presence/probable absence survey following current guidelines as outlined on page 7, where applicable.

Step 3: If a state-listed endangered bat is captured or recorded during the survey:

- Recommendation of no summer tree cutting, or limited summer tree cutting in certain situations within 5 miles of an Indiana bat and/or little brown bat capture or 3 miles of a northern long-eared bat and/or tricolored bat capture if a roost is not located.
- Recommendation of no summer tree cutting, or limited summer tree cutting, within a minimum of 2.5 miles of an Indiana bat or little brown bat roost or 1.5 miles of a northern long-eared bat or tricolored bat roost tree if located.
- Recommended tree clearing dates within capture record buffers are October 1 – March 31

If no state-listed endangered bat is captured or recorded during the survey:

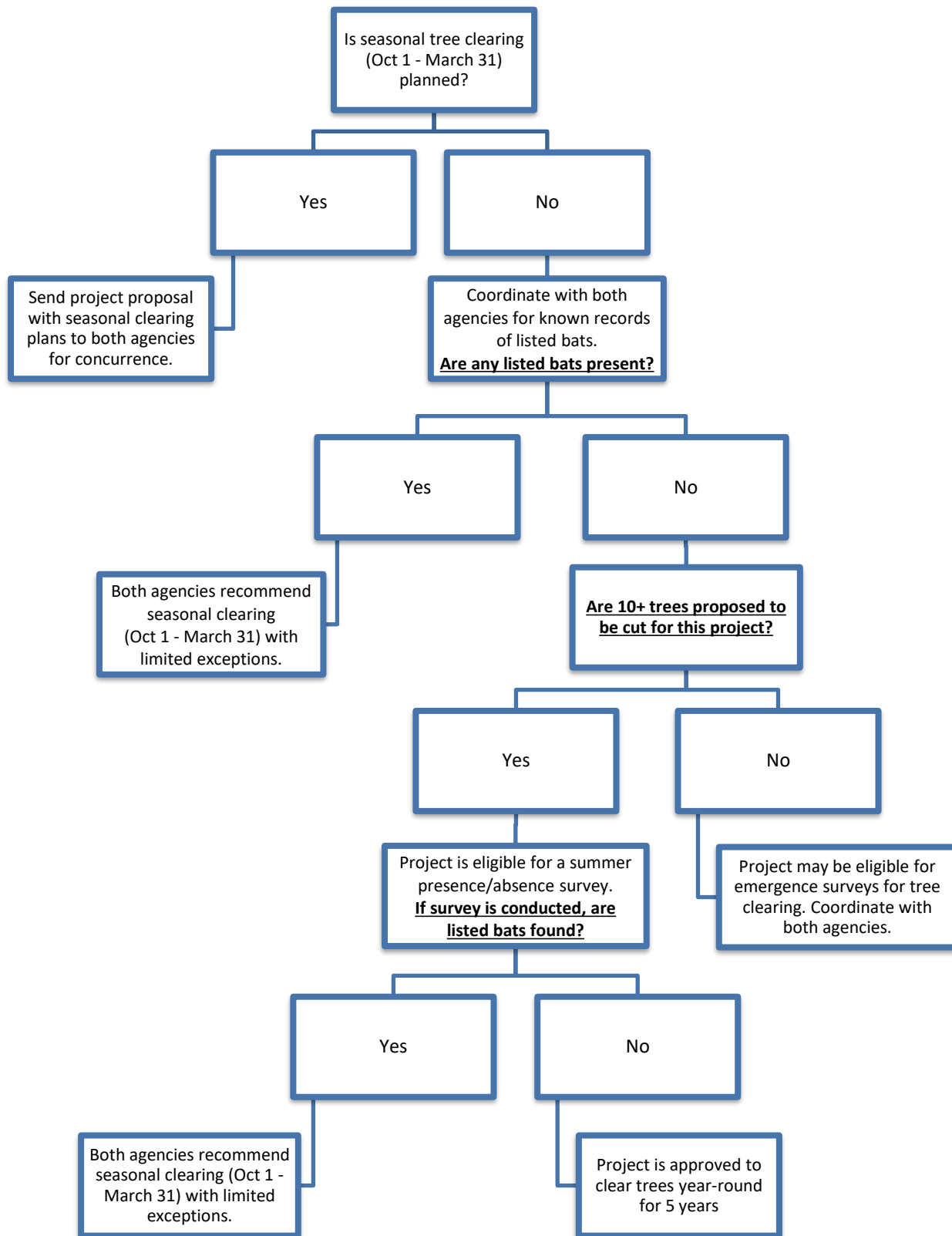
- Year-round (winter and summer) tree cutting may proceed for 5 years before a new survey is needed under state guidance.

* **Limited summer tree cutting guidance:** Limited summer tree cutting within a capture buffer may be permitted in certain circumstances after consultation with ODNR-DOW for projects that involve removal of 10 or fewer trees, removal of only conifers, and/or invasive species removal. These projects are handled on a case-by-case basis.

Tree Clearing around Hibernacula: Work involving tree clearing around hibernacula has the potential to impact hibernating bats. Trees within 0.25 miles of a hibernaculum portal play an important role in controlling wind, humidity, and temperature in the area, and they are also important roosting sites prior to the hibernation period. Therefore, a 0.25-mile buffer around known and/or potential hibernacula entrances is recommended. To assess the presence of a known and/or possible bat hibernaculum, ODNR-DOW recommends consulting with both agencies for nearby hibernacula records as well as performing a winter habitat assessment to search for potential hibernacula. For more information on how to perform a winter habitat assessment, please proceed to **Step 2 of ODNR-DOW**

Recommendations for Subsurface Disturbance on page 5 of this document. If any known and/or potential hibernacula are identified during project planning, please consult with ODNR-DOW and USFWS OHFO for further guidance.

The following flow chart can assist you in walking through the tree clearing guidance and decision-making process:



ODNR-DOW Recommendations for Subsurface Disturbance:

During late fall and throughout winter, Ohio's endangered bats hibernate in protected areas such as caves, underground mines, and rocky outcroppings. During this period, bats are susceptible to the disease White-Nose Syndrome. In order to minimize disturbance to hibernating bats, subsurface disturbance impacting the bedrock in Ohio is typically not recommended between November 15th and March 31st each year. The ideal time for bedrock-impacting subsurface disturbance is between April 1st and October 31st. For all projects, ODNR-DOW recommends the following steps:

Step 1: Coordinate with **ODNR-DOW** regarding existing records for state-listed bat hibernacula.

Step 2: If a project site does not contain known bat hibernacula:

- Conduct a winter habitat assessment of the project area. Begin by conducting a desktop assessment of potential caves, mines, karst features, rock ledges, etc. are present within 5 miles of the project area. Use the following tools to conduct this assessment:
 - [ODNR Mines of Ohio Viewer](#)
 - [Karst Interactive Map](#)
 - Topographic maps, photos, historical records, etc.
- If historical mines or other features with possible portal openings are discovered, do field checks where possible to investigate if portals are present.
- Any potential hibernacula found must address possible suitability for listed bats.

Step 3: Report results of the habitat assessment (and field assessment where applicable) to **ODNR-DOW Bat Survey Coordinator**. This can be a simple email or letter reporting distances to the nearest underground features and any other pertinent information regarding potential hibernacula to the project. Projects can expect the following recommendations in **ODNR-DOW's** response:

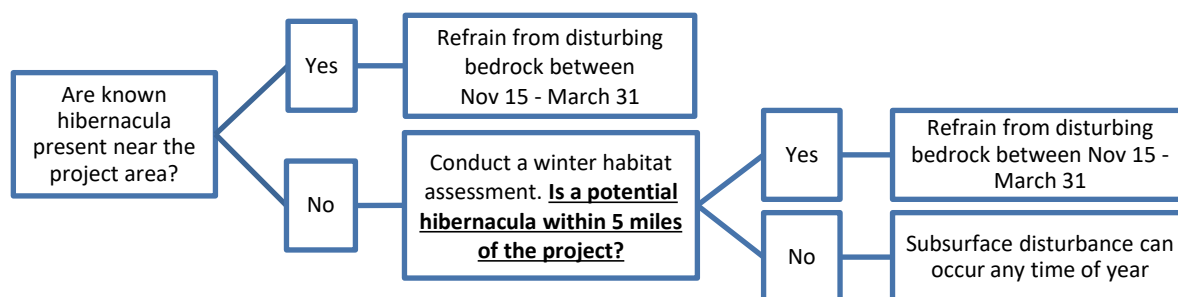
If potential hibernacula are found:

- Assume bats are using these hibernacula and refrain from subsurface disturbance impacting bedrock from Nov 15 – March 31.
- Avoid impacts on ledges and rock outcroppings where possible.

If no potential hibernacula are found:

Subsurface disturbance can occur any time of year.

The following flow chart can assist you in walking through the subsurface disturbance guidance and decision-making process:



ODNR-DOW and USFWS OHFO Recommendations for Bridges and Culverts

Bridges and culverts can provide suitable roosting habitat for numerous species of bats, including Indiana bats, Northern long-eared bats, Tricolored bats, and Little brown bats. Maternity roosts, hibernation sites, and temporary roosts have all been documented in bridges and culverts, making these structures potentially important year-round for endangered bats. For projects involving work on or around bridges and culverts that are at least 3 feet high and 23 feet long, ODNR-DOW and USFWS recommend the following:

Step 1: Coordinate with **ODNR-DOW** and **USFWS OHFO** regarding the bridge or culvert in question to determine if the structure is suitable for bats or if there are existing records of listed bats.

Step 2: If applicable, inspect the bridge or culvert for indications of bat presence, such as the following:

- Cracks or crevices at least 0.5" wide and 4" deep
- Unobstructed expansion joints
- Presence of urine and/or body staining on the structure
- Presence of guano

Step 3: Please consult with **ODNR-DOW** and **USFWS OHFO** for next steps after determining presence or probable absence of bats. Depending on the results, the agencies will provide guidance on timing and manner of structural work.

For more information, a more detailed explanation of conducting surveys for bats in bridges and/or culverts can be found in Appendix K (page 69) of the USFWS' *Range-wide Indiana Bat & Northern Long-eared Bat Survey Guidelines (2024)*.

Ohio Recommendations for Conducting Bat Surveys for Presence/Probable Absence

ODNR-DOW and USFWS OHFO Joint Guidelines follow the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines each year. This protocol may also be used for tricolored bat or the state-listed little brown bat with some minor modifications detailed below. To determine if a project is eligible for presence/probable absence surveys, please review **ODNR-DOW and USFWS OHFO Recommendations for Tree Clearing** (pgs. 3-4) of this document.

Ohio Mist-net Surveys

Due to the presence of White-Nose Syndrome (WNS), mist-netting in Ohio must be conducted between June 1 and August 15 unless stated otherwise in your state permit. ODNR-DOW and USFWS OHFO have determined that delaying netting activities until June 1 will provide additional recovery time for bats affected by WNS. For presence/probable absence surveys, netting will not be accepted outside of the June 1 - August 15 timeframe.

Mist-net Survey Levels of Effort:

To establish presence/probable absence of all federally and/or state-listed bats in Ohio, projects must use the highest required level of effort of the listed species. Use the table below for guidance on level of effort needed for each species using mist-net surveys. Please also note that the USFWS 2024 guidelines for the federally proposed tricolored bat follows the northern long-eared bat level of effort.

<i>Species</i>	Nonlinear Projects (Net nights/0.5km¹)	Linear Projects (Net nights/km)
<i>Indiana Bat</i>	6	2
<i>Northern long-eared bat</i>	10	4
<i>Tricolored bat</i> ²	10	4
<i>Little brown bat</i> ³	10	4

Federal guidance requires that a minimum of two (2) biologists (e.g., one permitted and one technician) must be on-site for every four (4) net-sets being operated. Exceptions may be allowed under extenuating circumstances, provided written justification is included in the proposed survey study plan and subsequently approved by the **USFWS OHFO** and **ODNR-DOW**.

Bat Bands:

Ohio provides three size bands for bats: 2.4 mm, 2.9 mm, and 4.2 mm. The 2.4 mm split metal bat ring made of aluminum alloy is suitable for banding tricolored bats. 2.9 mm bands are suitable for Indiana, northern long-eared, and little brown bats. The larger 4.2 mm band is suitable for silver-haired (*Lasionycteris noctivagans*), big brown (*Eptesicus fuscus*), and hoary (*Lasiurus cinereus*) bats. You must band all Indiana, northern long-eared, little brown, and tricolored bats with **ODNR-DOW** bands. Banding pliers are also now required for banding bats.

¹ 0.5km = 123 acres

² State-endangered, federally proposed endangered

³ State-endangered only

Ohio Acoustic Surveys

Acoustic bat surveys for projects that are eligible for summer presence/probable absence surveys will be accepted by **ODNR-DOW** and USFWS OHFO for the 2025 season. Surveys should follow guidelines laid out in the USFWS' *Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines* (2024) with the following exceptions:

- Ohio survey dates are June 1 – August 15
- After conducting automated analyses using one or more of the currently available approved acoustic bat ID programs⁴, qualitative analysis (i.e., manual vetting) of any calls recorded from state-endangered species must be completed.
- All presence/probable absence acoustic surveys conducted for state listed bat species should follow the highest minimum acoustic nights set forth in the federal guidance to be considered valid by **ODNR-DOW**. Any modifications to this position will be communicated at the time of the site authorization approval.

At a minimum, for each detector site/night a program considered presence of state-listed bats likely, review all files (including no IDs) from that site/night. If more than one acoustic bat ID program is used, qualitative analysis must also include a comparison of the results of each program by site and night.

Acoustic Survey Levels of Effort:

To establish presence/probable absence of all federally and/or state-listed bats in Ohio, projects must use the highest required level of effort of the listed species. Use the table below for guidance on the level of effort needed for each species using acoustic surveys. Please also note that the USFWS 2024 guidelines for the federally proposed tricolored bat follows the northern long-eared bat level of effort.

<i>Species</i>	Nonlinear Projects (Net nights/0.5km)	Linear Projects (Net nights/km)
<i>Indiana Bat</i>	10	4
<i>Northern long-eared bat</i>	14	4
<i>Tricolored bat</i>	14	4
<i>Little brown bat</i>	14	4

Combined Mist-netting and Acoustic Surveys

ODNR-DOW will accept the USFWS pilot survey option of combining mist-netting and acoustic surveys for traditional survey sites (e.g., 123-acre area) detailed in Appendix I of the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines (2024). All presence/probable absence combined mist-net and acoustic surveys conducted for state-listed bat species should follow the highest minimum level of effort set forth by the federal guidance to be considered valid by ODNR-DOW. Any modifications to this position will be communicated at the time of the site authorization approval.

⁴ <https://www.fws.gov/media/indiana-bat-summer-survey-guidance>

Ohio Guidance for Bat Surveyors

The following guidance is intended for those individuals planning on conducting bat surveys for any purpose in the state of Ohio. The guidance includes guidance on needed permits before work can be conducted, guidance for conducting work during the field season, and guidance on post-field season reporting to **ODNR-DOW**.

Before Field Season:

- Anyone surveying bats involving handling of any kind in the state of Ohio must obtain a federal permit as well as a state scientific collection permit. The federal permit should include both the Indiana bat and the northern long-eared bat.
- Your **ODNR-DOW** scientific collector's permit should include all Ohio bat species.
- Prior to initiation of field work (a minimum of two weeks in advance), permittees must provide proposed mist-netting and/or acoustic survey plans to **USFWS OHFO** and **ODNR-DOW** in the form of an e-mail. Plans must be reviewed and approved by both agencies before ANY surveys take place. Study plans must include:
 - Objectives
 - Location details
 - Dates of proposed work
 - **USFWS Project Code**: Project Codes can only be obtained by requesting an official species list through the USFWS's Information for Planning and Consultation (IPaC) website: (<https://ipac.ecosphere.fws.gov/>).
- Request bat bands at least two weeks in advance of needing them. Bat bands can be obtained by e-mailing the **ODNR-DOW Bat Survey Coordinator** with how many bands are needed, current permit number (both federal and state permits), sizes, and a mailing address. Bands will not be issued until permits are valid.

During Field Season:

- Only individuals who are named on the **ODNR-DOW** endangered species letter portion of the permit and on the corresponding federal bat permit may conduct and oversee mist-net surveys. Trained assistants may work on permitted bat activities under the direct and on-site supervision of a named permittee. All bat IDs must be verified by a named permittee.
- If an Indiana bat, northern long-eared bat, and/or tricolored bat is captured, the permittee shall notify the **USFWS** and the **ODNR-DOW Bat Survey Coordinator** referenced above within 48 hours via email. If a little brown bat is captured, notify the **ODNR-DOW Bat Survey Coordinator** only within 48 hours via email. Reports of listed bat captures should include specific information such as spatial location of capture, band information, radio-transmitter frequency information, sex, reproductive status, and age of individual.
- For presence/probable absence surveys, **ODNR-DOW** requires all female and juvenile state endangered and threatened bat species be radio-tracked if caught, in accordance with methods outlined in Appendix D of 2024 *USFWS Range-wide Indiana Bat Summer Survey Guidelines*.
- If you are taking any biological samples (tissue, fur, blood, etc.), this must be specifically authorized in your state and federal permits and noted in your survey proposal.

After Field Season:

By March 15, you must submit your final report(s) from the previous summer. Regarding specific reporting requirements, please refer to your permit or guidance from the USFWS OHFO. Please then forward a copy of the same report to the **ODNR-DOW Bat Survey Coordinator** and **ODNR-DOW Permit Coordinator**. Be sure to include your state permit number along with an electronic copy of the project report. Electronic summaries emailed during the field season are NOT considered as full compliance of this reporting requirement.

Frequently Asked Questions

When does the ODNR-DOW Bat Survey protocol have to be used?

This protocol should be used anytime Indiana bat, northern long-eared bat, little brown bat, or tricolored bat summer presence/probable absence surveys are conducted in the state of Ohio.

Can I use the Dkey for projects in Ohio?

The Dkey cannot be used to replace consultation with ODNR-DOW. Project proponents should coordinate directly with the ODNR-DOW for project technical assistance for all federally listed species. Additionally, **OHFO discourages the use of the Dkey for Ohio projects.** Contacting OHFO directly (ohio@fws.gov) for technical assistance for both the northern long-eared bat and Indiana bat is the more efficient process.

What disease protocols are required for bat surveys?

When handling bats, you must strictly adhere to the current WNS Decontamination Protocol (current version can be found at <https://www.whitenosesyndrome.org/topics/decontamination>). Clothing, boots, gear, and equipment should all be thoroughly decontaminated between nights, as well as between netting sites. I think we can delete this now.

How long are the results of the surveys valid for an assessment of an area?

Mist-net or acoustic surveys documenting probable absence of state-listed endangered bats are valid for five years.

When can acoustic or mist-net surveys occur in Ohio?

Acoustic or net surveys may only be conducted from June 1 through August 15 unless indicated otherwise in your state permit. Any surveys outside of the June 1 - August 15 timeframe cannot be used in Ohio to assess the presence/probable absence of state-listed bats.

Can I complete my acoustic surveys in a single night?

No. In accordance with the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines, survey efforts must be split across a minimum of 2 calendar nights.

Can a presence/probable absence survey be conducted within a known bat capture/detection buffer?

Surveys generally cannot be used to document presence/probable absence of state-listed endangered bats where presence of the species has already been confirmed by prior surveys.

Can I conduct a survey with less than the highest minimum effort and have it count as presence/probable absence for some species but not others in Ohio?

No. Ohio only accepts project proposals that use the highest level of effort required for bat surveys. So, for example, a project proposal meeting Indiana bat LOE requirements but not the other three species' LOE requirements will not be accepted as all species are considered potentially present statewide.

What if a project is proposing to clear trees between April 1 and September 30 when bats may be present, but no bat records exist in the project area?

Any Ohio project that is not within a known bat record buffer, and tree clearing between April 1 and September 31 is being proposed, may have a presence/probable absence survey conducted between June 1 and August 15 following the range-wide guidance. If a presence/probable absence survey is not performed, presence of listed bats is assumed.

Where do I get bands?

If you need bands, email the ODNR-DOW Bat Survey Coordinator at least two weeks in advance with your current ODNR permit number, how many bands in each size (2.4 mm, 2.9 mm, and 4.2 mm) you will need this season, and a current address to ship the bands.

Do I have to band every bat?

No, currently this is optional. However, you are required as per your state permit to band all Indiana, northern long-eared, little brown, and tricolored bats.