Technical Guidance for Indiana Bat TG-ECO-01-07

THIS GUIDANCE REPLACES, Indiana Bat **Technical Guidance for ESRs, TG-01-05**. This guidance is provided to clarify the requirements for data collection and documentation for potential impacts of ODOT projects to the Indiana Bat. The guidance has been developed in accordance with the **Biological Opinion on the Ohio Department of Transportation's Statewide Program for the federally listed Indiana Bat (Myotis sodalis)**, dated January 2007.

Attachment A: Potential Indiana Bat Habitat Characterization worksheet for MOA and Level 1 Ecological Survey Reports included.

Technical Guidance Applicability:

Only those projects located outside of 'urbanized areas' require data collection and documentation under this technical guidance. Utilize the map on page 2 of Attachment A to determine if the project is located within or directly adjacent to one of the mapped urbanized areas in Ohio.

1. If the project is within of directly adjacent to an urbanized area, contact the Office of Environmental Services Ecological Unit (OES-ECO) for guidance. Provide the project location of the proposed project on USGS mapping. OES will use this information to determine if additional data collection will be required, and will respond accordingly.
2. If the project is **not** within or adjacent to an urbanized area continue forward with the guidance.

MOA and Level 1 Reports:

Requirements for All MOA and Level 1 projects (underlined terms are defined on page 2 of Attachment A):

1. Contact the Ohio Department of Natural Resources, Division of Natural Areas and Preserves to search the Natural Heritage database for locations of Hibernacula within 10 miles of the project area and Indiana bat capture records within 5 miles of the project area. List this information within the report.
2. Include the Management Unit information
3. List total number of Indiana bat roosting trees to be directly taken for the project, and discuss if any are isolated.
4. List total number of Indiana bat potential maternity roosting trees to be directly taken for the project and discuss if any are isolated.
5. Representative photos of roost trees are required. All potential maternity roosting trees within the project area shall be photographed.
6. If consultant has GPS capability, potential roosting and maternity roosting trees should be located on mapping using GPS.

Additional Requirements for MOA and Level 1 projects in the West and Central Management units:

1. Discuss if the potential roost or maternity roost trees are within a forested area or connected to a forested area, and list the amount of connected forested area (connected by a tree line at least two trees wide).
2. List the percentage of connected wooded habitat that the project will remove.
3. List the perennial water sources (streams, ponds, wetlands) within 0.5 miles of the impacted roost trees.
4. Discuss impacts to any potential Indiana bat travel corridors.

Additional Requirements for MOA and Level 1 projects that impact a potential maternity roost tree in any unit, more than 20 potential roost trees in the South, East, and Northeast Units, or more than 10 potential roost trees in the West and Central Units:

1. Discuss habitat quality and suitability for this species within the impacted woodlot and the adjacent woodlots.
2. Discuss the relative severity of impact in a landscape context (will the project remove only a small part of the existing habitat within the region, or will the project take most of a high quality woodlot in an area with few woodlands).

* All underlined terms are defined on Page 2 of Attachment A.

Level 2 Reports:

Red Flag Summary: List approximate acreage and percentage of wooded habitat within the study area using aerial photos and land cover data. Confirm during windshield survey.

Ecological Resource Inventory Report: List acreage and percentage of wooded habitat within each corridor. Include representative photos of the wooded habitat within each corridor. This information will be collected during the field survey.

Ecological Survey Report: Record and compare approximate impacts to wooded areas (discussed in acreage) for all of the feasible alternatives using methods described in the ecological manual. Include representative photos of suitable roosting and maternity roosting habitat for each feasible alternative.

Information Collection for BA/BO or Programmatic Consultation: After the final alternative is chosen, impacts to Indiana bat roosting and potential maternity roosting trees shall be submitted. ODOT-Office of Environmental Services should be contacted regarding the sampling procedures and format for this information.

Notes:

1. For assistance in developing scope of work for Indiana Bat data collection and documentation, please contact ODOT-Office of Environmental Services (614-466-7100).

2. Only ODOT-OES and/or FHWA are responsible for determining effect calls on federally listed species. Please do not include effect calls, programmatic categories, or cutting dates in the ESR.

3. Only ODOT-OES and/or FHWA are responsible for project specific consultation with USFWS.

POTENTIAL INDIANA BAT HABITAT CHARACTERIZATION WORKSHEET FOR MOA AND LEVEL 1 ECOLOGICAL SURVEYS

Project County , Route, and Section:		PID:
Date:	ODOT District:	Preparer:

Is a portion of the project within any of the Generalized Urban Areas shown on the attached map (Page 2)?

- **YES**. Contact ODOT's Office of Environmental Services (OES, 614-466-7100), Ecological Section to determine the level of data collection required prior to conducting field investigations for potential Indiana bat habitat and completing form. When contacting OES, please provide the location of proposed project limits on USGS mapping and the County-Route-Section and PID for the project.
- **NO**. Continue with form.

Which Indiana bat Management Unit (see map) does the project primarily occur within? (circle one)	W / S	C	NE / E
Are there any known or suspected **hibernacula** within 10 miles of the project (DNAP - Natural Heritage Database records)?	Y / N		
• If yes, list the total number and the distance to the closest record.	#:	mi.	
Are there any known Indiana bat capture records within 5 miles of the project (DNAP - Natural Heritage Database records)?	Y / N		
• If yes, list the total number and the distance to the closest record.	#:	mi.	
Total number of potential Indiana bat habitat **roost trees** impacted by the project.			
• Number of these trees that are considered **isolated**.			
Total number of potential Indiana bat habitat **maternity roost trees** impacted by the project.			
• Number of these trees that are considered **isolated**.			

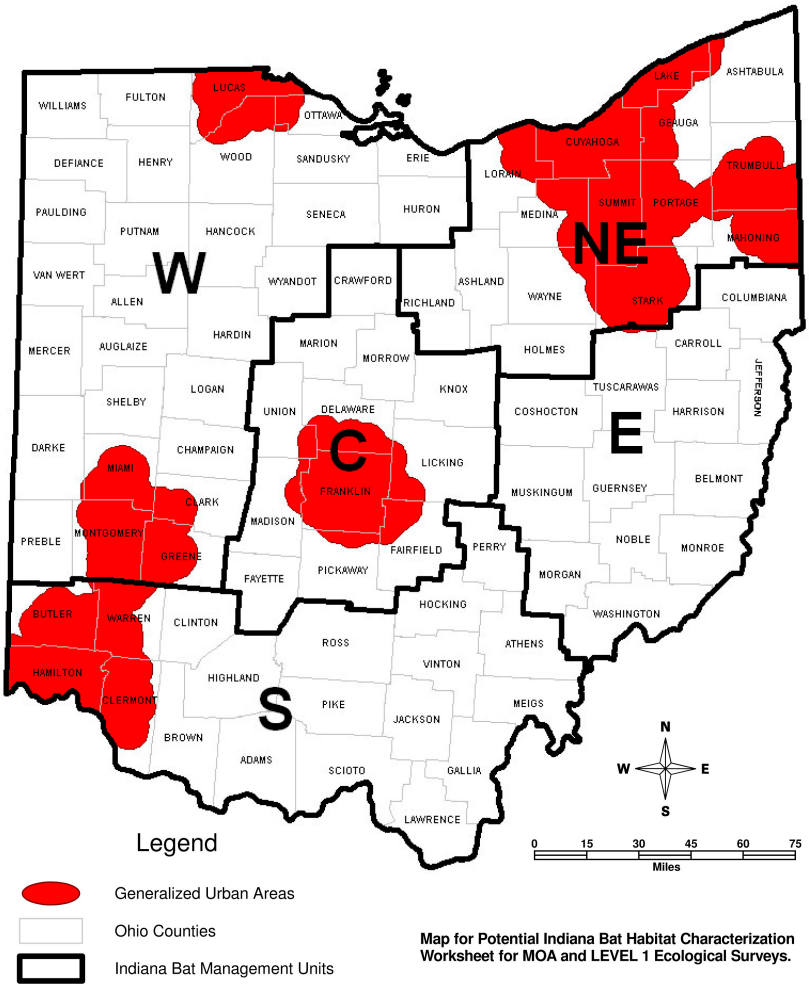
STOP Stop if the project is located within the **NE**, **E**, or **S** Management Units.

GO Continue with form if the project is located within the **W** or **C** Management Units.

Are the impacted potential **roost trees** located within a forested area?	Y / N
• If yes, what is the approximate size of the forested area in acres?	ac.
Are the impacted potential **roost trees** connected to a forest area via a tree line (row of 2 or more wide)?	Y / N
• If yes, what is the size of the connected forested area?	ac.
Is there a perennial water sources within 0.5 mile of the impacted potential **roost trees**?	Y / N
Will the project remove all or a portion of a potential Indiana bat **travel corridor**?	Y / N
Will the project remove more than 10% of the forest area it is within (or connected to)?	Y / N

Definitions for **bold** words located on Page 2.

DEFINITIONS



Map for Potential Indiana Bat Habitat Characterization Worksheet for MOA and LEVEL 1 Ecological Surveys.

Foraging Areas - Areas that have a food supply (insects) for adult Indiana bats and their young and may serve as night roosts for resting and digesting meals. These areas may be within or on the edge of forested areas, with an open subcanopy providing the best foraging habitat. Foraging areas occur along streams, in floodplain forests, in and around forested wetlands and impoundments. Streams are apparently not used if riparian trees have been removed.

Hibernacula - Area where bats hibernate during the winter. Hibernacula are typically caves, or abandoned mines that provide cool, humid, stable conditions for hibernation.

Isolated Roost Tree
Trees with the habitat characteristics listed above, but that are not located within sight distance of one or more potential roost trees. Isolated roost trees may be trees within a small cluster of sporadic trees (ex. front yard trees) not connected to or part of a linear flight corridor. This type of tree may support a colony in the short term, but the colony would have to find a new location when the tree fell over or lost the habitat characteristics and would be subjected to further stress because of lack of foraging areas.

Maternity Roost Tree - Trees that may support maternity colonies (reproductive females and their young that may number 100 individuals or more). Maternity roost trees have the following habitat characteristics: Live or standing dead trees or snags over 16"diameter at breast height (dbh) with exfoliating, peeling or loose bark, split trunks and/or branches, or cavities. These characteristics must be plentiful enough to allow the colony to change locations along the tree to aid in thermoregulation. If the habitat characteristics are found only on the branches of the tree, the branches must be at least 8" in diameter at the site of the habitat characteristics. These trees must have some solar exposure and must be within sight distance of at least one other potential maternity roost tree. These trees must be part of (forested area or within a fence row of trees at least two trees wide) or connected to a travel corridor or larger forested area.

Roost Tree – Trees that may support roosting bats. Roost trees have the following habitat characteristics: Live or standing dead trees or snags over 8"diameter at breast height (dbh) with exfoliating, peeling or loose bark, split trunks and/or branches, or cavities. If the tree characteristics are only found on the branches of the tree, the branches must be over 6" diameter at the site of the peeling bark, split in the branch, or cavity, etc.

Solar exposure - Solar exposure is direct sunlight to the trunk or branches where suitable roosting habitat is found for all or part of the day. Maternity roosting trees require some solar exposure to provide thermoregulation to the young. This solar exposure can come from the tree being at the edge of a forested tract or because the tree is a super canopy tree (much taller than the trees around it).

Travel Corridor - A contiguous linear wooded corridor at least two trees wide that connects roosting and foraging areas, and may be used during migration. These corridors may be riparian areas along streams, wooded fence rows, small wooded roads and paths, open-understory forest, or wooded residential areas.