

## **Indiana Bat Project Review Fact Sheet**

New York Field Office

The following fact sheet is intended to provide information to assist with the review of projects (*e.g.*, residential or commercial development) and activities that occur within the likely range of the Indiana bat (*Myotis sodalis*) within the State of New York. **PLEASE NOTE - this fact sheet does not apply to wind development projects as they involve many unique considerations.** This information is provided as technical assistance pursuant to Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*)

The Indiana bat is Federally- and State-listed as an endangered species and is currently known to winter in six counties in New York State. The U.S. Fish and Wildlife Service (Service) has learned a great deal about the wintering population with standardized biennial counts organized by the New York State Department of Environmental Conservation (NYSDEC) Endangered Species Unit, as well as migratory patterns and summer habitat use within the State.

In the Northeast, multiple State and Federal agencies have investigated Indiana bat movements. In the spring of 2002 through 2007, the NYSDEC and the Service successfully tracked female Indiana bats from their hibernacula in Essex, Ulster, Jefferson, and Onondaga Counties to their spring roosts, with average distances of up to approximately 40 miles. However, they are capable of flying distances much greater than that and have been documented doing so in other parts of their range.

The Indiana bat typically hibernates in caves/mines in the winter and roosts under bark or in tree crevices in the spring, summer, and fall. Suitable potential summer roosting habitat is characterized by trees (dead, dying, or alive) or snags with exfoliating or defoliating bark, or containing cracks or crevices that could potentially be used by Indiana bats as a roost. The minimum diameter of roost trees observed to date is 2.5 inches for males and 4.3 inches for females. However, maternity colonies generally use trees greater than or equal to 9 inches d.b.h. Overall, roost tree structure appears to be more important to Indiana bats than a particular tree species or habitat type. Females appear to be more habitat specific than males presumably because of the warmer temperature requirements associated with gestation and rearing of young. As a result, they are generally found at lower elevations than males may be found. Roosts are warmed by direct exposure to solar radiation, thus trees exposed to extended periods of direct sunlight are preferred over those in shaded areas. However, shaded roosts may be preferred in very hot conditions. As larger trees afford a greater thermal mass for heat retention, they appear to be preferred over smaller trees. Additional information on potentially suitable summer habitat can be found on our website at <http://www.fws.gov/northeast/nyfo/es/IndianaBatapr07.pdf>.

Streams associated with floodplain forests, and impounded water bodies (ponds, wetlands, reservoirs, etc.) where abundant supplies of flying insects are likely found provide preferred foraging habitat for Indiana bats, some of which may fly up to 2-5 miles from upland roosts on a regular basis. Indiana bats also forage within the canopy of upland forests, over clearings with early successional vegetation (*e.g.*, old fields), along the borders of croplands, along wooded fencerows, and over farm ponds in pastures (Service 2007). While Indiana bats appear to forage in a wide variety of habitats, they seem to tend to stay fairly close to tree cover.

### *Is There Potential Habitat Present on Your Project Site?*

To determine whether the proposed project site may provide roosting or foraging habitat for the Indiana bat, please read through the following questions:

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1. Is your project within a County identified by the Service as known or likely to contain Indiana bats?

- If no, no further coordination regarding the Indiana bat is necessary at this time.
- If yes, proceed to Step 2.

2. Is your project at an elevation of  $\leq 900$  feet above sea level (the maximum elevation we have observed Indiana bat maternity colonies-use in New York State)?

- If no, no further coordination regarding the Indiana bat is necessary at this time.
- If yes, proceed to Step 3.

3. Is there any potential habitat (*e.g.*, upland or wetland forest, streams, or caves/mines) present within the proposed project area?

- If no, no further coordination regarding the Indiana bat is necessary at this time.
- If yes, determine whether the proposed project involves any direct or indirect effects to Indiana bats.

*Evaluation of Potential Effects to Indiana Bats*

Should potential habitat be present, you and any involved Federal agency (with the Service's assistance) will need to determine whether Indiana bats may be present and if yes, evaluate the potential impacts of the proposed project on the Indiana bat.

In many cases, mist net or a combination of netting and acoustic surveys may be warranted to determine if bats are using the project area. Due to the limited time frame when bat surveys can be completed (see <http://www.fws.gov/northeast/nyfo/es/IndianaBatapr07.pdf> for recommended protocols), it is strongly recommended that the applicant contact the Service as early as possible during project planning to determine if surveys or additional avoidance and/or minimization measures will be necessary to avoid project delays. If netting is conducted at a site, we encourage the attachment of radio transmitters on any captured Indiana bats to help understand how the proposed project site is being used by Indiana bats. Should Indiana bat presence be detected, you should contact our office for assistance in determining whether your action may adversely affect Indiana bats.

*Conservation Measures*

Conservation measures are designed to minimize the likelihood of adverse impacts or result in beneficial effects to Indiana bats from projects. We have general recommendations to provide at this early stage should you wish to incorporate them into your project.

Avoid Direct Effects to Indiana Bats from Tree Removal

To avoid any potential for direct effects to Indiana bats from tree removal, conduct clearing of potential roost trees (generally  $\geq 4$  inches dbh) from October 1 through March 31 (when  $>10$  miles from a hibernaculum); when  $<10$  miles from an hibernaculum, we recommend conducting clearing from November 15 to March 31. The Service can help you determine how far your project is from known hibernacula. In many cases, where habitat is of low quality/quantity, seasonal cutting may be sufficient to avoid impacts to the species. Also, there may be cases (*e.g.*, very small number of trees) when we believe the likelihood of impacts is low regardless of when tree removal occurs. Please note that the ESA does not prohibit the clearing of trees and the Service's primary goal is not the protection of every tree. However, the ESA does prohibit

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the “take” (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct) of Federally-listed species, such as the Indiana bat, and our recommendations are intended to help applicants and Federal agencies avoid or minimize the risk of “taking” an Indiana bat.

#### Minimize Habitat Loss and Fragmentation

In addition to having concerns about direct impacts to Indiana bats, we are also concerned about indirect effects<sup>1</sup>, as well as the cumulative loss of habitat for the species. Indirect effects may result from the loss and/or fragmentation of roosting or foraging habitat. As mentioned above, Indiana bats form maternity colonies in the summer. These colonies have larger resource needs and more restrictive roost tree requirements than males or individual non-reproductive females. For these reasons, maternity colonies are highly philopatric, meaning they return to the same areas every year. Thus, loss of traditional maternity colony habitat (roosting or foraging) during the inactive period (November 15-March 31) could have adverse impacts to Indiana bats. Minimizing project footprints, minimizing fragmentation of forest blocks, and restoring and/or protecting on- and off-site habitat can help address these impacts.

After minimizing project footprints, we encourage the use of bright orange fencing/flagging to clearly demarcate trees to be protected compared with those to be cut prior to the initiation of any construction activities at the site. This will help ensure that contractors do not accidentally remove more trees than anticipated.

#### Minimize Habitat Degradation

We discourage the use of chemicals in/around stormwater detention basins as these may serve as foraging areas or sources of drinking water for bats.

In addition, lighting may deter Indiana bats from using areas (Sparks *et al.* 2005). To minimize potential impacts to Indiana bats from increased lighting in the area, we recommend limiting the number of lights, using motion sensors or timers, directing the lights toward the ground and buildings, and including shields to direct the light downward.

As we better understand a given proposed project, including any proposed conservation measures for Indiana bats, we will likely have additional recommendations.

#### *Information to Provide to the Service*

The project’s environmental documents should identify project activities that might result in adverse impacts to the Indiana bat or their habitat. Information on any potential impacts and the results of any recommended habitat analyses or surveys for the Indiana bat should be provided to this office and they will be used to evaluate potential impacts to the Indiana bat or their habitat, and to determine the need for further coordination or consultation pursuant to the ESA.

Specifically, the following information would be helpful to include:

- a detailed project description,
- a map (and summary table) of the proposed project area with coarse habitat cover types (*e.g.*, emergent wetland, open field) in acres,
- a summary table of the proposed amount of disturbance to each habitat type,

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<sup>1</sup> Indirect effects - those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably likely to occur (50 CFR 402.02)

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- an overlay of new construction on the habitat map,
- a description of the forested habitat onsite, including the type of forest (*e.g.*, oak-hickory), approximate stand age, and presence of dead or live trees with split branches or trunks or exfoliating bark,
- photographs representative of all cover types on the site and encompassing views of the entire site, and
- a topographic map with the project area identified.

References:

Sparks, D.W., C.M. Ritzi, J.E. Duchamp, and J.O. Whitaker, Jr. 2005. Foraging habitat of the Indiana bat (*Myotis sodalis*) at an urban-rural interface. *Journal of Mammalogy* 86:713-718.

U.S. Fish and Wildlife Service. 2007. Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, MN. 258 pp.