

## INDIANA BAT HABITAT CONSERVATION PRIORITIES IN MISSOURI

The Indiana Bat (*Myotis sodalis*) is a federal and state listed endangered species. When the Natural Resources Conservation Service (NRCS) provides technical or financial assistance to landowners, habitat for this species must be considered and evaluated by NRCS staff that has completed the joint agency workshop, "U. S. Fish and Wildlife Service/NRCS Coordination for the Conservation of the Indiana Bat in Missouri."

### **Biology of the Indiana Bat**

From late fall through winter, Indiana bats in Missouri hibernate in caves in the Ozark Region. During the spring and summer, the bats utilize living, injured (e.g. split trunks and broken limbs from lightning strikes or wind), dead or dying trees for roosting throughout the state. Indiana bat roost trees tend to be greater than 9 inches (dbh) with loose or exfoliating bark. Large trees (greater than 20 inches dbh) are preferred. Most important are the structural characteristics that provide adequate space for bats to roost.

Preferred roost sites are located in forest openings, at the forest edge, or where the overstory canopy allows some sunlight exposure to the roost tree which is usually within 0.6 miles of water. Indiana bats forage for flying insects (particularly moths) in and around the tree canopy of floodplain, riparian, and upland forests.

This use of trees by maternity colonies (summer habitat) requires any tree clearing/cutting activity to be done in a manner that does not destroy or injure the animals.

These habitat considerations apply to all NRCS assisted activities such as farm ponds, water and sediment control basins, grass waterways, or flood control structures, etc., where potential suitable summer roosting habitat is located and suitable trees will be cleared as part of the project construction.

### **Habitat Conservation Priorities for Indiana Bat (*Myotis sodalis*)**

NRCS will conserve the Indiana bat by following the priorities below in order of importance and is dependent upon the area of the state where projects are being conducted:

1. Protect all known hibernacula.
2. Manage a 5-mile radius around each hibernaculum. This requires a no tree removal zone within a 1-mile radius and managed (restricted tree removal based on TSI/Harvest plan with bat consideration) Indiana bat habitat within a 4-mile radius beyond the 1-mile no tree removal zone. **For any tree removal proposals within a one-mile radius of a known hibernaculum, please contact the State NRCS Office**

**who will further coordinate with the Service on these projects under the Section 7 process.**

3. Protect known maternity roosts and manage adjacent area (1-mile) for alternate roost trees and roost tree recruitment. **If within a 1-mile radius of a known maternity roost site, please contact the State NRCS Office who will further coordinate with the Service on these projects under the Section 7 process.**
4. Manage potential summer roosting habitat to provide roost trees for expanding populations. For projects outside of a 1-mile radius of known maternity roosts, the primary concern is the timing of tree removal.

The **no cut period** for summer roosting habitat is **April 1 to September 30** for all counties north of the Missouri River and all counties south of the Missouri River with known maternity roost sites that have been documented in the current MDC Heritage Database used by NRCS. The policy applies to the entire county in both cases. Potential roost trees can be cut during October 1 to March 31. Trees not meeting suitable summer roost habitat criteria can be cut/cleared at any time. The MO-CPA-52 form will be used to document actions taken with regard to suitable bat trees.

The **no cut period** applies to all potential suitable roost trees that are over 9 inches DBH (Diameter at Breast Height). Potential suitable trees include any live or dead species that have cracks/crevices, broken tops/branches and/or have plates or slabs of loose bark on the trunks or branches. These tree injuries may be the result of wind throws, lightning strikes, or diseases/insects. In addition, trees that naturally have loose or exfoliating bark have also proven to be desirable sites for bat roosts.

5. Protect other caves and adjacent forested habitat in a 100-foot radius with a no tree removal zone. If adequate buffer zones are lacking in areas of other caves, recommend improving site with native trees, shrubs and grasses in accordance with the Missouri Department of Conservation's "Management Recommendations for Construction projects Affecting Missouri Karst Habitat". This information can be found at the following website:

<http://www.conservations.state.mo.us/nathis/endangered/bmp.htm>

**The Missouri Heritage Database adapted for NRCS - eFOTG use will be consulted for bat hibernacula location; known maternity roost sites; and south of Missouri River summer roosting habitat counties. The Heritage Database will have periodic updates.**

**NOTE:** Girdling of live trees in the area of existing summer roosting habitat trees can provide alternate habitat in the future, but this action does not mitigate the loss of the existing summer roosting habitat trees. The existing summer roosting habitat trees must remain until the no cut period has passed. The existing summer habitat trees can be girdled during TSI but not removed. This applies to any action taken by NRCS.

The following items demonstrate the positive efforts of NRCS for Indiana bat recovery:

- Timber Stand Improvement by the use of girdling and done with a focus on suitable trees and Indiana bat habitat.
- Programs that encourage riparian corridors and tree planting. Tree Planting (612) will be considered beneficial to Indiana Bat if the species planted contain at least two species of either Shagbark hickory, Shellbark hickory, Silver maple, Oak, or Cottonwood.
- Bottomland wetland restoration.
- Woody edge-feathering or hedgerow renovation with girdling of habitat suitable trees during the protected summer roosting and brood rearing season.