MDC Resource Science

A Bat Management Plan for the Missouri Department of Conservation

Science Notes

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SUMMARY

Missouri provides habitat for 15 species of bats. Bats play essential ecological and economic roles in the ecosystems of the state, primarily because they are the main predators of night-flying insects. Land management practices such as timber harvest, vegetation management, and prescribed fire may have either positive or negative effects on bats, by altering the distribution and abundance of roosts and food resources. Riparian habitat is especially important to bats. Man-made structures have become habitat for some species. Caves and mines that provide conditions suitable for bats are uncommon and require protection.

Goal: Preserve the composition of the bat fauna of Missouri, incorporate bat conservation measures into land management planning, and inform and educate agency staff and the public

Life History

In summer, most of the bats in Missouri form maternity colonies. Many species roost in trees; in crevices, in cavities, under bark, or amid foliage. Several common species regularly roost in buildings. Only one species, the gray bat, forms large nursery colonies in caves. All of the bats in Missouri are insectivores. During the cold months of the year, October through March, bats must either migrate south to warmer climates or hibernate; most choose the latter strategy. Two species (gray bat and Indiana bat, both endangered species) have specialized requirements and occupy only a very small percentage of the caves in Missouri.

Threats

Disturbance of endangered bats in their cave and mine roosts may cause direct and indirect mortality, as well as disruption of colonies. Contaminants such as insecticides many cause mortality or interfere with reproduction and hibernation. Alteration of the natural communities of Missouri, past and present, has dramatically altered the distribution and abundance of bats in the state.

Conservation Actions by Ecological Section

The *Comprehensive Wildlife Strategy for Missouri* identifies priority bat conservation actions for four ecological sections: Mississippi Alluvial Basin, Osage Plains, Ozark Highlands, and Central Till Plains.

Plan Details:

- Sections are included on life history, distribution, management, specialized habitats, monitoring, and research
- Goals and objectives are identified
- Each species' distribution is overlain on a map of the Ecoregions of Missouri
- The plan outlines management techniques to improve habitat for bats in a variety of settings including: forests; dead tree snags that provide roosting areas for bats; feeding areas for bats; riparian areas along streams; prescribed fire in a variety of habitats; providing artificial bat roosts; urban areas; caves and karst features, and abandoned mines for summer or wintering areas.

Management Findings: Management should be approached at the landscape scale. To enhance bat habitats, management techniques should focus on increasing vegetative diversity, using smaller clear cuts, retaining tracts of late-successional forest and old growth, providing travel corridors, designating sensitive habitat buffers, and retaining snags and den/cavity trees. Fire is an effective tool under appropriate conditions.

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