

# Eastern Massasauga

*Sistrurus catenatus catenatus*

## Best Management Practices

Missouri Department of  
Conservation

Common name ▪ Eastern Massasauga  
Scientific name ▪ *Sistrurus catenatus catenatus*  
State status ▪ Endangered  
Federal status ▪ Candidate

### Ecology

Eastern massasaugas range from central New York and Pennsylvania westward into Minnesota, Wisconsin and Illinois, and southward into Missouri. These venomous rattlesnakes occur along the Missouri, Grand, and Mississippi river drainages in northwest, north-central and northeastern Missouri, north of the Missouri River. The eastern massasauga inhabits marshy or swamp areas dominated by cordgrass, sedges and bulrushes, as well as lowlands along rivers and lakes. Eastern massasaugas are active during the day from mid-March to late October. They overwinter in moist lowland areas, using burrows made by crayfish or other animals for shelter. These snakes often show seasonal shifts in habitat use. They typically move from wet prairies in the spring, to drier uplands in the summer, and back to the wetlands in the autumn. Eastern massasaugas may travel up to 1.6 miles or more between winter and summer habitats. Mating occurs in spring, and females give birth to 2-14 live young in late summer. It is likely that females in Missouri produce a litter of young only every other year. Eastern massasaugas prey on mainly deer

mice and voles. These snakes are medium-sized and range from 30 to 36 inches in length.

### Reasons for Decline

Although eastern massasaugas have a large historic range that encompasses many states in the upper Midwest, they are becoming rare or uncommon throughout their range, including Missouri. Cultivation, draining of marshes and indiscriminate killing of the snakes have greatly reduced the populations. Much habitat has been lost as a result of human activities and natural succession, resulting in population reduction and fragmentation.



[Photo Credit: Tom R. Johnson, MDC](#)

### Recommendations

Eastern massasaugas require a mixture of habitat types (wet prairies with crayfish burrows and adjacent upland prairie) to reproduce and safely overwinter. For this reason, it is important to minimize impacts of projects to all areas and types of habitat within the range of this species. As do many reptiles, eastern massasaugas play an important role in the food chain. These snakes may act as natural controls of populations of rodents that could damage crops and other vegetation.

### Beneficial Practices

- Instead of utilizing machinery, hand cut shrubs and trees and spot treat woody invaders with herbicides.

- Avoid removing or destroying unique habitat features, such as downed trees, logs, rock piles and brush piles, that provided habitat for the eastern massasauga.
- Disposal of wastes and garbage should be done in designated areas far from wetlands.
- Disking should not be performed in designated habitat or disk only in currently managed impoundments.
- Prescribed burning or mowing of no more than 90% of designated habitat while massasaugas are inactive between November 1 and March 15, 10% of the habitat should be maintained to provide cover for emerging animals.

### **Adverse Practices**

- Draining or destroying known wetland habitat.
- Altering water levels in wetlands where eastern massasauga are present.
- Over-grazing that destroys habitat structure.
- Broadcasting herbicides over large areas.
- Burning of all designated habitat at one time while they are active (March 16-October 31), especially during spring emergence (March and April).
- Permanent inundation of upland habitat or known hibernacula, and long-term winter drawn downs.
- Mowing in designated habitat when massasaugas are active (March 16 thru October 31).
- Disking in designated habitat.

### **Information Contacts**

For further information regarding regulations for development in wetlands, rivers and streams, contact:

Missouri Department of Conservation  
Policy Coordination Section  
P.O. Box 180

2901 W. Truman Blvd  
Jefferson City, MO 65102-0180  
Telephone: 573/751-4115

Missouri Department of Natural Resources  
Division of Environmental Quality  
P.O. Box 176  
Jefferson City, MO 65102-0176  
Telephone: 573/526-3315

U.S. Army Corps of Engineers  
Regulatory Branch  
700 Federal Building  
Kansas City, MO 64106-2896  
Telephone: 816/983-3990

U.S. Environmental Protection Agency  
Water, Wetlands, and Pesticides Division  
901 North 5<sup>th</sup> Street  
Kansas City, KS 66101  
Telephone: 973/551-7307

U.S. Fish and Wildlife Service  
Ecological Services Field Office  
101 Park DeVillie Dr., Suite A  
Columbia, MO 65203  
Telephone: 573/234-2132

### **Legal Issues**

These Best Management Practices were prepared by the Missouri Department of Conservation with assistance from other state agencies, contractors, and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat.

Compliance with Best Management Practices is not required by the Missouri wildlife and forestry law nor by any regulation of the Missouri Conservation Commission. Other federal, state or local laws may affect construction practices.

“State Endangered Status” is determined by the Missouri Conservation Commission under constitutional authority, and specific requirements for impacts to such species are expressed in the Missouri Wildlife Code, rule 3CSR10-4.111.

