

MASSASAUGA RATTLESNAKE CONSERVATION IN MISSOURI

Tom R. Johnson and Dennis E. Figg

ABSTRACT

Populations of the massasauga rattlesnake, *Sistrurus catenatus*, are still extant in four Missouri counties north of the Missouri River. Two subspecies occur in Missouri, *S. catenatus catenatus* along the eastern border and *S. catenatus tergeminus* along the western border. These two subspecies integrate in the centre of the state. Wetland loss in Missouri exceeds the national average and all remaining populations except one occur on state or federal managed wetlands. Since managed wetlands are the only locations to support massasauga populations, management information is needed to ensure that massasaugas continue to exist in Missouri.

INTRODUCTION

In Missouri, massasauga rattlesnakes have been associated with the large floodplain wetlands of the Mississippi River, Missouri River and Grand River in the northern half of the state. Draining of wet prairies and marshes, largely for agricultural production, has caused tremendous habitat loss. Extant Missouri populations of the massasauga rattlesnake are now limited to four counties.

The massasauga has been listed state Endangered since 1974. The species is protected by the Wildlife Code of Missouri, however important habitat is not well protected and habitat loss is a continued threat. Persecution by humans continue in Missouri, as it does throughout the species' range.

EXTANT POPULATIONS

Status surveys have been conducted by the Missouri Department of Conservation. Based on current knowledge, two massasauga populations occur in the centre of the state, one on state park land and another on a state wildlife area. Although a few snakes are observed annually at each location, no reliable population information exists. A third remnant population still may occur on wetlands managed for waterfowl hunting north of St. Louis, but the largest population in Missouri survives at Squaw Creek National Wildlife Refuge north of St. Joseph.

The most extensive research effort in Missouri has been directed at the Squaw Creek population, research done by Dr. Richard Seigel, (then a Ph.D. student at the University of Kansas), Lawrence, Kansas. Research was initiated in 1980 to study snake movements, evaluate habitat use, and to obtain a population estimate.

During the three year study, 168 massasaugas were captured, marked and released at Squaw Creek National Wildlife Refuge. A low recapture rate of seven per cent was not sufficient to estimate population size.

The sex ratio within the population appeared to be 1:1. Females at Squaw Creek breed every other year and young are born during August and early September. The average litter size per gravid female was six.

Habitat use at Squaw Creek varied throughout the season. During the spring massasaugas occupied cordgrass prairie at the centre of the refuge. As summer approached they appeared to move out of the refuge into drier uplands and old fields. In the fall they returned to the cordgrass prairie and associated marsh to over-winter in crayfish burrows.

During the study the massasauga population appeared to be stable, but losses from human activity were frequent enough to cause concern. Although prescribed fires are an important management tool to maintain grassland habitat, some rattlesnake mortality resulted from burn management. Perhaps of greater concern is the mortality caused by snakes being run over by refuge visitors as snakes cross interior roads.

CURRENT CONSERVATION MEASURES

Conservation of the massasauga in Missouri is necessarily related to publicly managed wetlands. The large population at Squaw Creek National Wildlife Refuge appears to be stable. However, thousands of visitors come to the refuge every fall at the same time snakes migrate over interior roads to find wintering sites, resulting in

significant mortality. Reducing mortality to acceptable levels may be achieved by a combination of public education and possibly building travel “underpasses” at specific points along the gravel road.

Additional population monitoring is needed at all extant locations and public education will continue. As additional managed areas are developed within the range of massasauga rattlesnakes there is the possibility of reintroductions. However, reintroductions will be limited by the lack of individuals to relocate and negative public perception about “rattlesnake releases”.

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