

**MASSASAUGA (*Sistrurus catenatus catenatus*)****Description**

The massasauga is a medium-size snake native to the tallgrass prairie ecosystem. It is one of the smallest rattlesnakes occurring in the Great Plains, normally ranging in size from 18 to 30 inches. Identifying characteristics include nine large scales on the top of the head, a small pit on each side of the head between the nostril and eye, and a small rattle on the end of the tail. The massasauga is typically dark gray in color but may vary to light brown. It has 20 - 50 dark gray or dark brown blotches the length of its back with additional blotches on its sides. These blotches are often highlighted by a light outline. There are two dark strips down each side of the head below the eye and two irregular strips on the top of the head. The belly is dark mottled or light with dark blotches and mottling. The massasauga feeds on rodents, frogs, and other small snakes. Lizards, small mammals, and centipedes are important foods in the western part of the range, whereas small mammals (voles, mice, shrews) dominate the diet in the east, with snakes and birds of lesser importance.

**Distribution**

The massasauga's historic distribution extended from the upper mid-west of Michigan and Ohio west into Nebraska, south into Texas, and southwest into Arizona. During pre-settlement times, the massasauga was probably widely distributed throughout the eastern third of Nebraska with highest population numbers in the southeast quarter of the state. There are a number of references by early settlers to small prairie rattlesnakes, however most early accounts of snakes encountered on the prairie did not distinguish between species of rattlesnakes. It is likely that many of these early accounts of rattlesnakes in eastern Nebraska were massasaugas.

Specimens have been documented from Colfax, Fillmore, Gage, Lancaster, Nemaha, and Pawnee counties. The first recorded specimen for Nebraska was collected in Lancaster County in 1889. Of the fifteen collections in Lancaster County the last documented specimen is from 1943, although the species was reported to still have been observed in the county in the early 1970's. The single collection in Nemaha County is from 1891 and a single collection from 1938 is the only specimen recorded for Fillmore County. The last confirmed report of a massasauga in Gage county was in 1971, although there have been several recent, unconfirmed reports.

In the last twenty years extant populations of the massasauga have been documented only in Colfax and Pawnee counties. In the fall of 1998 a survey was conducted for the massasauga at Pawnee Prairie WMA (site of previously documented occurrences) with no individuals of the species being found.

**Habitat**

In Nebraska the massasauga is native to the tallgrass prairie ecosystem. It is most closely associated with wet meadow sites within the prairie landscape but is also found in drier, upland prairie sites. There is evidence that snakes move from wet to dry sites on a seasonal basis. In Lancaster County the massasauga was often associated with the saline wetlands around Lincoln. In Colfax County it has been found in a wet meadow in the Platte River floodplain. In Pawnee County it is found on two state wildlife management areas associated with wetlands around ponds and lakes. Most snake species, including the massasauga, hibernate in large numbers at ancestral den sites.

**Status**

Global: G3-Vulnerable. Federally listed as a Candidate. State Threatened. Nebraska: S1-Critically Imperiled. Loss and alteration of habitat is believed to be the primary cause of the decline of the massasauga and currently is the greatest threat to the species. In Nebraska, the species is dependent upon intact tallgrass prairie ecosystems, which have been drastically diminished and altered since pre-settlement times due to conversion to cropland and other developments. Such habitat fragmentation reduces movement of individuals between populations, thus reducing the exchange of genetic material and increasing the probability of negative genetic effects (e.g. inbreeding). Reduced movement also decreases the probability that a suitable site will be re-colonized should the existing population be lost due to chance events. Remaining tallgrass prairie tracts are typically too small to maintain viable populations of the massasauga. A number of the tracts that are otherwise

large enough to support a population may no longer have suitable habitat due practices such as overgrazing and fire suppression. Remaining tallgrass prairie tracts are susceptible to conversion to other uses and this potential habitat loss remains a threat to the viability of the species in the state.

The destruction dens during the hibernation period can kill large numbers of snakes and eliminate whole local populations. The loss of a den site during non-hibernating periods can also result in high mortality rates since individuals may not be able to find suitable new den sites. Road mortality can also contribute to decline of small populations and reduce movement among populations.

***Management***

Preservation and restoration of sizeable tracts of tallgrass prairie and wetlands and herbaceous riparian areas will likely benefit this species. Prescribed moderate and light livestock grazing and prescribed burning are also important to maintain the quality of eastern grasslands and prevent tree and shrub encroachment. Extensive research on monitoring methods is needed. Restoration methods should be developed, as should mitigation methods for fragmentation effects. Major mortality factors should be identified throughout the range.

***More Information***

<http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=C03P>