

endangered

A Landowner's Guide to the Eastern Massasauga in Pennsylvania: Management & Protection



Have You Heard "the Buzz"?

Eastern Massasauga *Sistrurus catenatus catenatus*

FAMILY: Viperidae
ORDER: Squamata
PA STATUS: Endangered

OTHER NAMES: Swamp Rattlesnake, Snapper, Black Snapper, Pygmy Rattlesnake, Purple Rattler, Spotted Adder

What is an Eastern Massasauga?

The Eastern Massasauga is a small, stout bodied rattlesnake averaging 20 to 30 inches in total length. The color pattern is a series of large, dark brown to black, middorsal blotches and two to three rows of lateral blotches upon a light gray ground color. The tail has three to six dark cross-bands. The belly is black, occasionally mottled with white. The young are approximately 9 inches long when born and have a yellow tipped tail with a “button” rather than a fully-developed functioning rattle. The small rattle sounds like the buzz of an insect and is barely audible beyond 5 feet. Although Massasaugas are venomous, they have a very mild-mannered temperament. Most Massasaugas will rely on their camouflage and remain quiet and still when approached. They rarely strike unless handled.

Habits & Habitat

Massasaugas utilize low-lying poorly drained open habitats in the spring, fall, and winter. Crayfish burrows and other fissures are utilized to gain access to ground water that remains unfrozen throughout the winter for hibernation (October through April). After the spring emergence in April, they begin feeding on small rodents and sunning in the lowland areas for a period of about a month. In late spring and summer, they move to more upland, drier, old fields, prairies, or meadows nearby. During this time males and non-pregnant females will spend the summer foraging, and breeding takes place in August and September. Pregnant females will choose sparsely vegetated dry areas to bask until they give birth to their young in August or early September. Females reach breeding age at two years and give birth to an average of six or seven young every other year. The average seasonal home range for the Massasauga in western Pennsylvania is 3.7 acres.

What Is All “The BUZZ” About?!

The drastic decline of the Eastern Massasauga is alarming! In Pennsylvania, the species is classified as a critically imperiled endangered species. On the federal level, the Massasauga is a candidate for listing as an endangered species. Recent studies by Pennsylvania Natural Heritage Program staff have shown that only 4 of 19 historic populations in Pennsylvania still exist. Damming, road building, surface mining, and urbanization have destroyed large amounts of Pennsylvania’s Massasauga habitat, and the remaining open habitat is threatened by becoming overgrown by trees and shrubs. The Massasauga is important to all citizens of Pennsylvania because it represents an essential component of Pennsylvania’s wildlife resources, biodiversity and natural heritage.

Snakes, and specifically Massasaugas, are a vital part of our ecosystem. The Massasauga can be considered an umbrella species. Protecting an umbrella species potentially protects other species sharing all or some of the same environmental requirements. Many species such as the Massasauga are also uniquely important as indicators of environmental quality and function as environmental monitors. They also control the rodent population, thereby controlling rodent-carried diseases. Breakthroughs in the medical field have even created medications for hypertension and diabetes from rattlesnake venom! There are many direct and indirect benefits to conserving this species in Pennsylvania. Yet these docile and ecologically important creatures are in great jeopardy. **Without immediate conservation of critical habitat for the Massasauga, these remaining populations may be lost in the near future.**



Pennsylvania Distribution by County

Pennsylvania Distribution by County



Pennsylvania Natural Heritage Program data 2008

What Can You Do?

In Pennsylvania, critical Massasauga habitat is often found on private lands. Therefore, private landowners can play a key role in the conservation of this habitat and the Massasauga that desperately need it. This document describes a range of voluntary opportunities for landowners. **If you own land with suitable habitat for Massasauga in Pennsylvania and are interested in protection and/or management for the species, please contact Western Pennsylvania Conservancy for more information!**

Landowner Options for Managing the Land

How is Massasauga Habitat Managed?

In general, Massasauga habitat can be established and managed using a variety of best management practices including:

- Brush clearing
- Carefully timed biannual mowing
- Establishing/Seeding of prairie grasses, wildflowers, and other native plants
- Prescribed burning
- Selective use of herbicides

Most of the management activities would occur during the hibernation period when the ground is frozen (between November and March).

Reclaimed Massasauga habitat will have to be maintained periodically to keep woody vegetation encroachment in check. This may require management as often as every few years, to as rarely as every 20 years, depending on the site.

A professional biologist can help you develop a habitat management plan that benefits wildlife and helps meet your goals for your land.

CALL OR EMAIL Western Pennsylvania Conservancy TODAY!



Technical & Financial Assistance for habitat management may be available through various conservation programs and organizations, and include programs such as:

Landowner Incentive Program (LIP)

In this program, Western Pennsylvania Conservancy (WPC) will provide technical assistance and conservation planning expertise to private landowners with land that has been deemed important to Massasauga conservation - **FREE OF CHARGE**. A non-binding Conservation Plan would be prepared of the property for the landowner. Future results of the Conservation Plan could be that management activities would be performed by the landowner, by a conservation group (such as WPC), or by others as desired by the owner.

Wildlife Habitat Incentive Program (WHIP)

Grassland Reserve Program (GRP)

Conservation Reserve Enhancement Program (CREP)

Contact WPC for more information about the Landowner Incentive Program or any of the programs listed above.

Three main components of Critical Massasauga Habitat:

1 Hibernation Habitat

This habitat allows the snakes to find refuge from the freezing temperatures of Pennsylvania's winters. They need wetlands with stable water tables and access to the subsurface waters. Burrows in these wetlands also provide them with retreats from predators in the spring and fall when they may be too cold to crawl away or defend themselves. Careful management should prevent the wetlands from becoming completely overgrown or converting to forested habitat.

2 Foraging Habitat

Massasaugas feed mainly on small mammals, so the best management for this habitat type is creation and maintenance of open habitat with herbaceous plant species and limited canopy cover. This is often recognized as grassland, prairie, old field or meadow habitat.

3 Gestating Habitat (habitat used by females during pregnancy)

This habitat can be created and/or maintained by encouraging plant species that maintain a low-lying vegetative layer. This allows the snakes to bask effectively. Examples of these plants are Blazing star, Poverty grass, Dewberry, Cinquefoil, and *Sphagnum* moss. Lowbush Blueberry is often found in gestation habitat too.



Sustainable Land Uses with Massasauga Habitat Conservation

Just because you are managing your property for the Massasauga does not mean you are not able to use it. There are many sustainable ways to enjoy your land while simultaneously protecting natural resources for future generations to enjoy.

Floral– Depending on your habitat plan for your property, grasslands or meadows can be planned to provide a colorful, vibrant backdrop for you to enjoy. These grasslands and meadows may contain beautiful wildflowers that attract songbirds in the spring and summer.

Agricultural – Many agricultural activities, if conducted in a sustainable manner, will not negatively affect the Massasauga and its critical habitat. Sustainable agricultural uses and activities can be conducted in accordance with a soil conservation plan that minimizes adverse effects on resources.

Hunting – Massasauga habitat is utilized by many game species. It is not uncommon to find deer, turkey, grouse, woodcock, and rabbits in the grass and underbrush of Massasauga habitat.





Landowner Options for Protecting the Land

Below are only a few of the many land protection options available to landowners interested in conservation of the Massasauga and its critical habitat. We invite you to contact a Western Pennsylvania Conservancy (WPC) land protection specialist to discuss your conservation goals and learn about the services we can provide. WPC staff will answer any questions you might have about any of the protection options below, will review the options for uses, restrictions and resource protection, and can outline costs associated with each conservation option. The drastic decline of the Massasauga is alarming! You can make a lasting difference for generations to come in regards to the Massasauga and the biodiversity of Pennsylvania. Contact WPC for more information.

Conservation Easement A conservation easement is a voluntary legal agreement between the landowner and a land trust such as WPC that limits the type and amount of development that may take place on the property. This commonly used and highly effective conservation tool is tailored to the needs and conservation goals of the landowner, who maintains ownership and use of the land. Permitted uses usually include agriculture and forestry. The easement may cover all or part of the property, and the landowner may retain the right to sustainably manage the forest or farm the land. Typically, the landowner realizes a tax deduction as part of this arrangement.

Example of Tax Deduction Benefits of a Conservation Easement:

Property value before easement	\$100,000
Market value after donation of conservation easement	- \$64,000
Value of easement gift	\$ 36,000

To determine the value of the easement donation, the property is appraised both at its fair market value without the easement restrictions and with easement restrictions. The difference between these two appraised values is the easement value. Detailed federal regulations govern these appraisals. Contact WPC for more information about the tax savings this option can provide.

Land Donation Landowners may donate all or a portion of their property to WPC. Depending upon the conservation values being protected, WPC may hold and manage the property for future generations. The land may also be conveyed to a conservation buyer with limits on land use. The landowner's gift of land is considered a charitable contribution and the landowner is entitled to an income tax deduction for the value of the property.

Donation of Land with Lifetime Income Landowners wishing to donate a marketable property while receiving regular income payments for a period of time or for life may consider creating a Flip Charitable Remainder Unitrust. This gift plan, set up through an outside trustee (such as a bank trust department), allows the donor to receive an immediate federal income-tax deduction. Once the trust sells the property, it "flips" to become a charitable remainder unitrust and pays the donor and/or beneficiaries for the term of the trust. Once the term ends, the principal passes to WPC.

Gift of Remainder Interest (Life Estate) Landowners may donate land while retaining a life estate for themselves by donating a Remainder Interest. This approach allows the landowner to continue to live on the property but the land is transferred to WPC. WPC would take full ownership of the property after a predetermined event, such as the passing of the landowner.

Volunteer Management for Conservation Purposes Landowners may wish to maintain all their current property and rights, yet provide habitat for wildlife by participating in or allowing habitat management activities. A Conservation Plan can be prepared for each property, and management activities can be performed by the landowner, by a conservation group (WPC), or by others as desired by the owner. See Page 3 - Landowner Incentive Program (LIP).

For More Information & Technical Assistance contact:



Western Pennsylvania Conservancy
800 Waterfront Drive, Pittsburgh, PA 15222
(412) 288-2777
www.waterlandlife.org

Pennsylvania Fish & Boat Commission
Division of Habitat Management
(814) 359-5119
For PFBC Regional Habitat Biologists, see:
www.fish.state.pa.us/dir_habitat.htm

