



Midwest PARC Quarterly Newsletter - August 2022

Compiled by members of the **Outreach and Communications Team (OCT)**
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Herp Highlight: The Eastern Massasauga Rattlesnake

The Eastern Massasauga Rattlesnake (*Sistrurus catenatus*) is a small, stout species. It is characterized by a gray to brown body covered with blotching that culminates in a dark banded tail with a segmented rattle. The head is dark with two elongated blotches extending to the neck. The face also has black banding through the eye complimented by white stripes from the jaw to the loreal pits, the pit between the nostril and the eye. Melanistic individuals occur in some of its range. The Western Massasauga (*S. tergeminus*) often has greater contrast between ground and blotch coloration. Its range extends into the Midwest from



Iowa to Colorado and into Texas. There are also fragmented localities in northern Mexico. The Western Massasauga is not currently federally listed but is up for review.



Eastern Massasaugas inhabit wet grasslands, fens, bogs, and meadows in the Great Lakes region. They frequently use crayfish burrows for shelter and as hibernacula. Unfortunately, much of this region is underlain by fertile soils and was converted to farmland during the 1700's and 1800's. Prior to the 1900's, massasauga populations likely persisted throughout the Great Lakes region across a matrix of abandoned or fallow farmland, pastures, and bogs or fens that were difficult to drain. However, technological improvements during the twentieth century resulted in the destruction of most of these wet soil

habitats and the consolidation of small fields and pastures into expansive monocultures of corn and soybeans. Many populations have declined or been extirpated during the last few decades. They have become increasingly isolated on preserved islands of natural habitat in a vast, agricultural ocean. Michigan, Ontario, and Ohio now host most of the remaining, viable massasauga populations with only small, isolated, and likely declining populations in Iowa, Illinois, Indiana, Ohio, and New York.

The U.S. government listed the eastern massasauga as threatened under the Endangered Species Act in 2016. This has afforded much needed attention, funding, and urgency toward their conservation, but substantial barriers to their recovery still exist. Throughout most of their range, massasaugas are reliant on early successional habitats like grasslands and prairies which are maintained through disturbance. In the absence of natural disturbance from native megafauna and natural fires, most grasslands are now maintained via mechanical disturbance, herbicide application, or prescribed fire. However, populations of massasaugas are now so small that incidental mortality from prescribed fire or mechanical disturbance could have a profound effect. . Fortunately, massasaugas are small, rarely exceeding 30 inches (75 cm) in total length, and maintain relatively small home ranges of less than 250 acres (100 ha). This could allow populations to persist in scattered remnant tracts of habitat for long periods of time.

Massasaugas are venomous but bites are incredibly rare and almost never fatal. These secretive snakes use venom to incapacitate their prey, which can include small mammals, birds, amphibians, lizards, invertebrates, and even other snakes. Massasaugas are, in turn, preyed upon by many larger vertebrates. Given their broad diet, diverse array of predators, and reliance on burrowing crayfish, these snakes are particularly interconnected to many other wildlife species. Their conservation may have broader implications for the conservation of many other creatures. The plight of this rapidly disappearing rattlesnake presents us with an opportunity to not only conserve a species, but an entire

ecosystem that has been pushed to the brink. What happens next may depend on our ability to convince others that a venomous snake few people will ever encounter has inherent value, beauty, and a right to continue existing.

Authors: Andrew Hoffman (Ohio State University) and Jesse Sockman (Ohio State University).

Citation: Durbian, F. E., King, R. S., Crabill T., Lambert-Doherty, H., & Seigei R. A. 2008. Massasauga Home Range Patterns in the Midwest. *Journal of Wildlife Management* 72:3, pp. 754-759.

Smeenk, N. A., Lipps Jr., G. J., & Wynn, D. (2021). Massasauga. In J. G. Davis, G. J. Lipps Jr., D. Wynn, B. J. Armitage, T. O. Matson, R. A. Pflingsten, & C. Caldwell (Eds.), *Reptiles of Ohio* (Vol. 1). Ohio Biological Survey, Inc.

First Image description: The head of an Eastern Massasauga Rattlesnake (*Sistrurus catenatus*) displaying the white striping coming from loreal pits and slitted pupils. Photo by Rexford J. Hill.

Second Image description: Image of an Eastern Massasauga Rattlesnake (*Sistrurus catenatus*) from above in grassland habitat showing the camouflage created by the blotching pattern of the snake. Photo by Rexford J. Hill.

MWPARC Annual Meeting!

Register Now! We are hosting our annual conference in-person this year at the [John Ball Zoo](#), Grand Rapids MI, September 9-11, 2022. Registration is \$85 regular or \$50 student (\$25 virtually Saturday-only). [Click here to Register](#). Registration closes on August 5th so make sure you don't miss out!

Plenary Speaker: Dr. Jacqueline Litzgus joins us from [Laurentian University](#).

Meeting schedule can be found on [our website](#). The in-person conference includes a Friday field trip and evening social; all-day Saturday oral and poster presentations and a workshop; Sunday will have time for task teams and working groups to gather face-to-face as well as entry to the zoo.

We are still **accepting donations** for our silent auction. Proceeds will go towards student research travel grants. Donors can fill out this form: <https://forms.gle/sjZbE7pLUjrWSGJn8>

Hotel and Lodging: MWPARC has reserved a small block of rooms at Holiday Inn Grand Rapids for \$125/night + taxes. Each room has two queen sized beds with the group code MPC; rooms are first come, first served! Reserve your room [here](#).

Camping options include Wabasis Lake Campground ranging from primitive sites at \$24/night to full hook-ups for \$40/night. A cottage and cabins may also be available in limited quantities for between \$65 to \$125/night. Visit their [website](#) for more information and to reserve a site!

See You There!

T-Shirt Logo Contest Winner!

The winner of our T-Shirt Logo Contest for our upcoming annual conference is Faith Kuzma! Congratulations, Faith!

Buy your T-shirts [here](#)! Shipping will begin August 10th.



Reptile Report

Recovering America's Wildlife Act

Recovering America's Wildlife Act (RAWA) has passed the House of Representatives. This bill could provide up to \$1.3 billion to state agencies and an additional \$97.5 million on tribal land and waters each year for species of greatest conservation need. A portion of the proposed annual budget of RAWA will be committed to innovation grants that allow for certain non-profits and agencies to apply, which is an opportunity for big, cutting-edge ideas. The bill will likely be taken to the Senate in September when they are back in session. More information can be found in the [press release](#) by the Association of Fish & Wildlife Agencies and to read the bill [click here](#).

Massasauga Bites in Michigan

Great Lakes Echo reports that between 2003 and 2020 a suspected 75 Massasauga bites were reported to the Michigan Poison & Drug Information Center with an additional three in 2021 and two in 2022 not included in analysis. No bites were fatal with most bites occurring on the hands while hiking in wetland areas. Poaching is not suspected as a reason for bite on the hands. This article offers a nice breakdown of where bites occur in the state and a brief highlight on massasaugas life history. Overall, Michigan DNR cautions safety around rattlesnakes and recommends immediate medical attention, but cements the rarity of bites. [Click here for the full article](#). For a more indepth look at snakebite trends in the region, read the featured paper on the [Epidemiology of Eastern Massasaugas](#) in the [publication section](#) below!

Stories From the Field

Trish Brockman: You always remember your first. Your first pet, your first crush, your first car, etc. I've had a lot of firsts when it comes to herp species and each new first is the best one ever, but what really takes the cake is helping someone else find their first. A first herp is unforgettable and can really inspire people. This kind of experience can be a powerful tool when it comes to fostering a conservation ethic among stakeholders.

Currently I am a Masters student at Michigan State University studying the effects of private forest management on the Wood Turtle (*Glyptemys insculpta*) and it has given me a unique opportunity to harness that tool for conservation. One of my project objectives is to engage with my partners in the industry and get them actively involved with conserving the turtles that call the land they manage home. Together, we can make a real difference. So, I started offering workshops for forest managers on wood turtle ecology and conservation. These workshops also include a site visit where we track and observe one of the wild wood turtles in our study. Let me tell you, seeing their faces light up at the sight of their first wood turtle is pretty unforgettable in and of itself. But, for me, what's really unforgettable is the most common question asked at the end of each visit: "What can we do to help?"



Image description: Trish Brockman holding a Wood Turtle that was captured and marked during a survey in the western Upper Peninsula of Michigan. Photo by Lauren Otterness.

Interested in being highlighted? Send in your story: <https://forms.gle/5SqFn4FsFfKpBhTSA>

News from PARC

YouTube: PARC has a new [YouTube page](#) containing great videos from scientist “meet & greets” to webinars! The [Field Biosecurity 101 Webinar](#) is posted for those interested. Make sure you subscribe!

Other Announcements

Northeast PARC is hosting their annual meeting at Canaan Valley Resort in West Virginia, **August 10-12, 2022.**

Stay tuned for a **Special Edition Newsletter** highlighting and summarizing all the happenings and updates from the MWPARC Annual Meeting!

Hot Off the Presses! - Recent Publications

Books and Guides

Have you purchased your field guide? Check out the [MWPARC Resources Page](#) for excellent field guides highlighting Midwestern herpetofauna!

Scientific Journal Articles Featuring Herps in the Midwest

Epidemiology of Eastern Massasaugas. Wasko, Bullard, and Beauvais (2021) compiled a dataset of 848 reliably reported eastern massasauga bites across the Great Lakes states. Most records occurring in Michigan followed by Indiana, Illinois, and Ohio. No fatal bites have been reported since 1935 indicating access to modern medical care reduces the risk. Some evidence suggests that the density of and increase in snakebites may be due to the increase in human population within the region. Likewise, the decrease in snakebites following the 1940’s may be explained by the decline in massasauga populations caused by human development.

Wasko, D. K., Bullard, S. G., Beauvais, T. F. 2021, *Epidemiology of Eastern Massasauga (Sistrurus catenatus) Snakebites in the Great Lakes States, 1800 - 2015.* *Wilderness & Environmental Medicine.* 32(3). pg. 308-314.

The Human Dimensions of Amphibian and Reptile Conservation. Olson and Pilliod (2022) discuss the gap between the need for herpetofauna conservation and the perception and social capital of herpetofauna in the USA. They note a shift in the public values of Americans towards the preservation of the ecosystem and herpetofauna presenting a valuable opportunity to direct education efforts toward stewardship and conservation action in regards to species at greater risk.

Olson, D. H., Pilliod, D. S., 2022. Elevating human dimensions of amphibian and reptile conservation, a USA perspective. *Conservation Science and Practice.* 4(6).

Want to see your research highlighted? Have you recently published on populations of amphibians or reptiles in the Midwest? We want to hear about it! Please reach out to **Jesse Sockman** (sockman.15@osu.edu) and **Danielle Galvin** (danielle.galvin@coyotes.usd.edu) if you would like to highlight your research.

Header photo description: Gravid female Eastern Massasauga Rattlesnake (*Sistrurus catenatus*) located during survey of field in Ohio. Photo by Jesse Sockman.

We want your feedback: What would you like to see in future volumes of our newsletter? Give us more information by filling out this survey: <https://forms.gle/Hz9ZkznEFfiTE8a48>

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