

The Wildlife Crossing

A FWS newsletter to facilitate collaboration between the Michigan Ecological Services Field Office and Michigan's transportation agencies

The Buzz About Eastern Massasauga Rattlesnakes

Many Michiganders are surprised to learn Michigan is home to venomous snakes. In fact, several species of snakes found in Michigan are venomous, but most are rear-fanged. Rear-fanged venomous snakes have to chew or hold prey near the back of their mouth to inject their mild venom. Due to this envenomation method and their mild venom, these snakes are not considered threats to humans in Michigan. The only front-fanged venomous snake (and only rattlesnake) in Michigan is the federally threatened eastern massasauga rattlesnake (EMR). While EMR are venomous, they are generally considered a timid, reclusive snake that avoids contact with humans by hiding under vegetation or debris. EMR are unlikely to strike unless threatened, such as when picked up or stepped on. EMR generally rattle with a buzzing sound in advance of a defensive strike, allowing you to move away from the snake and potential harm. It is always best to leave a snake alone and not pick it up, as they will often move on and you won't see it again. Live and let live!

EMR are a small-to-medium sized snake that can reach 2 to 3 feet in length. Their coloration varies from gray to brown with dark brown bands down the back and smaller alternating brown spots along the sides and tail. They have a blunt-tipped, segmented rattle as well as a triangular shaped head with vertical pupils and large heat-sensing pits or openings between the nostrils and the eyes. There are several lookalike species that are often mistaken for EMR including eastern milk snake, eastern fox snake, eastern hognose snake, and northern water snake. These lookalikes can be differentiated from EMR by size, coloration, body pattern, head shape, habitat, and lack of a rattle. EMR are found throughout the Lower Peninsula and Michigan is considered the last stronghold for the species. In the southern Lower Peninsula, populations are typically associated with early to mid-successional wetlands, while those in the northern Lower Peninsula are associated with lowland coniferous forests and open canopy wetlands. EMR also utilize drier, upland sites such as prairies, barrens, savannahs, forest openings and even old fields and highway ditches for foraging, basking, and dispersal during their active season (generally considered April 1 through October 15 in the southern Lower Peninsula and May 1 through October 1 in the northern Lower Peninsula). During the inactive season, EMR hibernate along wetland edges in crayfish or small mammal burrows and cavities of root systems. Primary threats to EMR include loss of wetland habitat, changes in wetland hydrology, habitat fragmentation from large roads or other significant barriers, and snake fungal disease. Understanding EMR biology can help transportation projects minimize and avoid impacts to EMR.

Is it a Massasauga?	Massasauga	Other species (non-venomous)
Massasauga pupils are elliptical.		
Massasaugas have a heat-sensitive loreal pit.		
Massasaugas have a rattle on their tail.		
Massasauga bellies are mostly dark.		
Massasauga heads are more diamond-shaped.		

Source: The Ohio State University, u.osu.edu/snake

Understanding May Affect Determinations

The All-Species Michigan Dkey is a tool developed by the Michigan Field Office to make Section 7 consultations more efficient. The Dkey can be used to assist you in finding the correct determination for your project and decrease the amount of coordination needed with our office. However, when you receive a May Affect determination for a threatened or endangered species, your Endangered Species Act requirements are not complete and further coordination with our office is needed. Understanding the reasons behind your May Affect determination can help determine next steps and inform your continued coordination with our office. Michigan transportation projects are most likely to receive a May Affect determination for EMR, listed mussels, or listed bats. Common scenarios that lead to May Determinations in the All-species Michigan Dkey include:



- EMR: Projects with hydrological impacts that result in a change of more than 6 inches in surface or groundwater elevations or result in inundation. Hydrological changes can affect an EMR's ability to survive hibernation in the inactive season. Impacts anticipated from hydrological changes may also result in a May Affect determination for other species such as copperbelly water snake, freshwater mussels, Hine's emerald dragonfly, Poweshiek skipperling, and Mitchell's satyr.
- EMR: Actions that will disturb the ground or existing vegetation in tier 1 habitat where a habitat assessment has not been completed by a qualified herpetologist. These projects require additional review to understand where potential hibernation habitat for EMR occurs in the project area and ensure impacts will be avoided or minimized.
- EMR: Actions that will create a new road or trail or alter the horizontal alignment of an existing road or trail. New roads or altered road alignments can result in decreased habitat quality, population fragmentation, and death of EMR that may attempt to cross the road and are hit by traffic. These projects require additional review to avoid or minimize these potential impacts.
- Mussels: Projects that will impact a group 3 stream and do not meet one of the specified EGLE Minor or General Permit categories. Federally listed mussels may be present in group 3 streams, so a mussel survey is often needed to determine potential impacts.
- Bats: Projects during the active season that include removal/modification of an existing bridge suitable for day-roosting bats and will result in the permanent loss of known or potential roosting spaces. A structure assessment is needed to determine whether potential roosting spaces are being used by bats.
- Bats: Projects that intersect the current range of a listed bat species, contain known or potential roosting habitat, and include tree cutting/trimming but are not willing or able to implement the location-specific tree cutting dates.

For more detailed information on why a specific project action received a May Affect determination or what other actions may also result in a May Affect determination, please refer to the Michigan Endangered Species Determination Key Standing Analysis. If your project receives a May Affect determination for any threatened or endangered species, please email MIFO_Dkey@fws.gov to coordinate further with our office.

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For copies of past newsletters, please visit the Michigan Transportation Library.