



# Ontario's Only Venomous Snake: Understanding the Eastern Massasauga Rattlesnake

By Melissa Prout   Photos by Scott Currie using a large telephoto lens!

Like all snakes, the Eastern Massasauga Rattlesnake smells with its tongue. Air particles are captured on the forked tongue, then brought into two small cavities in the top of its mouth, sending identifying signals to the brain.



Found on the Bruce Peninsula at the northern end of the Niagara Escarpment, the Eastern Massasauga Rattlesnake prefers open rocky areas and grasslands.

**W**hile walking along the Bruce Trail on the northern Bruce Peninsula last June, I stopped to admire a tiny orchid when I heard a distinctive high-pitched buzz. I couldn't find where it was coming from but peering at the sandy rocks, under a low lying cedar, I finally spotted the source, an Eastern Massasauga Rattlesnake.

Reaching an average adult length of 65 to 70 cm (two feet), the Eastern Massasauga Rattlesnake (EMR) is a fascinating and often misunderstood creature. Once found throughout southern Ontario, the EMR can now be found in only four places in the province: the

### Eastern Massasauga Rattlesnake (*Sistrurus catenatus catenatus*)

#### Description:

- ◆ blunt tail, usually with a rattle on the end
- ◆ thick midsection and short body
- ◆ wedge-shaped head with white stripes along the jaw
- ◆ brownish-greyish body with dark saddle-shaped blotches
- ◆ about 60 cm (2 ft) long

Diet: primarily small mammals, other snakes, frogs, fish

Dominant Habitat Type: open rocky areas, open grasslands

#### Tips for Hiking Safely in Rattlesnake Country

Bites are uncommon, but may occur if someone steps directly on a snake, or tries to pick one up. If you leave this snake alone, it will not bother you.

- ◆ Stay on established trails.
- ◆ Keep your dog on a leash.
- ◆ Wear sturdy footwear.
- ◆ Watch where you place your feet and hands.
- ◆ If you hear a rattlesnake: stop, locate the snake, give it lots of space, back away, and walk around it.

#### If Someone is Bitten

It is extremely unlikely that you or any member of your group will be bitten by an EMR, but if you are, keep the following in mind:

- ◆ Stay calm.
- ◆ Clean the wound.
- ◆ Wrap the infected area with a firm bandage.
- ◆ Seek medical attention.
- ◆ Do not apply ice or a tourniquet.

\*Each person will react differently based on age, health, and amount of venom injected.\*



The Eastern Massasauga Rattlesnake relies on camouflage to hide, only rattling its tail when threatened, rarely striking anything larger than small rodents. It is a species at risk, protected by law throughout Ontario.

Ojibway Prairie Complex in Windsor, the Wainfleet Bog near Port Colborne, Eastern Georgian Bay, and the Bruce Peninsula.

Although the Bruce Peninsula is home to the second largest population of EMRs in Ontario, most people will never see one because of its secretive behaviour and incredible camouflage.

Whether the EMRs are resting on a sun-dappled forest floor, on a rocky outcrop, or in an open grassland, the colouration and pat-

tern of their scales make them masters of disguise. Their talent of appearing from out of nowhere may surprise passing hikers, but the ability to conceal themselves serves these snakes in two very important ways.

First, EMRs rely on their camouflage to avoid becoming food for another animal such as a hungry broad winged hawk.

Second, rather than actively pursuing prey, EMRs are ambush hunters, meaning that they

sit and wait for dinner, typically small rodents, to pass within striking range (which is only half their body length).

Guiding the snake's strike are two small openings on each side of its face between its nostrils and eyes. These heat-sensitive pits sense tiny temperature changes, allowing the snake not only to find warm-blooded prey in complete darkness, but also to pinpoint the warmest part of a rodent's body, its heart.

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### Unique Sense Organs

The EMR's other sense organs are also uniquely different than those of other animals, relying primarily on its senses of touch and smell.

While EMRs do not have an external ear or eardrum, they do use a small ear bone to detect sound waves vibrating through the ground.

Although snakes have both nostrils and nasal cavities, the tongue is actually the smelling device. A snake's forked tongue flicks out to capture tiny air particles and then retracts inside its head with the forks fitting neatly in two small cavities in the top of its mouth. These cavities, called "Jacobson's Organs," send a signal to the brain, whereby the brain can identify the smell as prey, predator, or other.

Interestingly, EMRs only need to eat about once every three weeks. Like all other reptiles, EMRs rely on the external environment to regulate their temperatures. And since they don't need energy to heat their internal furnaces, EMRs eat approximately 50 times less food than do birds and mammals of a similar size.

As the only venomous snake in Ontario, an EMR has a highly sophisticated system of obtaining its meal. Attached to the top of its

mouth hangs a pair of hinged fangs that fold up when not needed. These fangs are hollow and act like hypodermic needles for injecting venom.

### Unlikely to Strike Humans or Pets

It is important to note that venom is used only to immobilize prey. As venom is expensive to produce, the snake is very cautious about when and how much it injects. Consequently, an EMR is unlikely to waste it on something that it can't eat, like people or our pets.

If a snake feels threatened, however, it will give up on its camouflage and activate its second line of defence, the rattle. A rattle is made up of a series of irregular-shaped, interlocking scales. Every time a snake sheds its skin, which may be three to 10 times per year depending on age and health, a new segment is added to the rattle. Over time, older segments break off from wear and tear, which explains why it's impossible to determine a snake's age by counting the rattles on its tail (a common myth).

When an EMR rattles, it is not an indication that it is going to strike; it is simply telling you that you are too close for comfort. EMRs are shy and only want to be left alone. If you

are lucky enough to encounter one, simply give it lots of space to escape.

EMRs are an integral part of Ontario's natural heritage, however, their future is not secure. Due largely to habitat loss, human persecution, and unintentional road kills, EMRs are a species at risk, protected by law everywhere in Ontario.

Fortunately, such organizations as Bruce Peninsula National Park help protect the threatened EMR by educating the public, providing stewardship programs for landowners, monitoring gestation sites (birthing sites), and investigating road mortality with the hopes of developing long-term strategies to protect this species. When we disregard the myths and unwarranted fears, we can see that they are truly remarkable creatures.

That sunny morning in June, I only had 30 seconds to admire the EMR in front of me before it decided to slowly retreat deeper into the low-lying cedars. Humbly amused by the encounter, I returned my attention to the orchid. ■

*Melissa Prout is a naturalist and environmental educator delivering programming about species at risk, including the Eastern Massasauga Rattlesnake.*