



# Rattlesnake Tales

Vol. 18 No.2

ISSN 1705-8309

Fall 2006

## Going ... Going ... Gone?

By Ray Shearer  
Volunteer, PA DCNR

The Massasauga Rattlesnake is the smallest of Pennsylvania's three venomous snake species (the Northern Copperhead and Timber Rattlesnake being the other two), reaching an average adult size of between 18 to 24 inches in length. It also has the unfortunate distinction of being one of the rarest reptiles within the Commonwealth. Despite being under the protection of Pennsylvania's Endangered Species Act,



A massasauga rattlesnake basks in the warmth of the spring sun after emerging from hibernation at Jennings Environmental Education Center. Photo by Ray Shearer

historical locations in Butler, Crawford, Mercer, Venango and Allegheny counties, only four sites remain in Butler and Venango Counties and one of those populations has become so low that it may already be too late to save. Like so many other animals, habitat destruction is mainly to blame for its precarious situation. Having a need for wetlands adjacent to more open, drier foraging

of twenty one

areas has put serious limitations on remaining suitable habitat. Open areas are also important for gestating females, who give live birth to an average of three to nine young every other summer after becoming sexually mature at three years of age.

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Furthermore, unlike other rattlesnakes that seek shelter in relatively high, rocky crevices for the winter, the massasauga is a wet hibernator - that is to say it requires wet, frost free refugia in which it can thermoregulate as climatic conditions dictate. Most often in PA this will be a crayfish burrow in which they can spend the coldest months with just their nostrils poking out of the water. There they have been known to share sanctuary with northern black racers, northern brown, eastern garter, and northern water snakes. There have been several documented cases where drawing down water or inundating areas in winter have extirpated entire colonies.

At the forefront in the cause to save the massasauga in Pennsylvania is Jennings Environmental Education Center, under the supervision of Dave Johnson and the Western Pennsylvania Conservancy, whose efforts are headed by herpetologist Ben Jellen. It is Jennings that I have had the pleasure to work for the last three years. What started out as merely checking predetermined routes for the presence of rattlesnakes has grown into a concerted effort along with the Conservancy to establish habitat requirements and movement patterns. This has been achieved by surgically implanting radio transmitters at the Pittsburgh Zoo in certain individuals and tracking them throughout their activity period, which lasts from about mid-April to mid-October. In addition, all snakes encountered coming out of hibernation are carefully captured and a PIT tag (Passive Integrated Transponder) is injected subcutaneously to aid in identification of individuals if they are encountered later in the year. Weight, sex, length and a blood sample for genetic studies are also taken at this time. To improve the quality of the habitat for the rattlesnakes at Jennings, natural succession is curbed by mechanical cutting of saplings in winter, followed by a controlled burning of the relict prairie in early spring before the snakes emerge from hibernation. If it weren't for the efforts of the Jennings staff and volunteers, the forest could quickly reclaim the prairie and render it useless to the snakes.

The massasauga is venomous and deserves our respect. There have been no recorded fatalities from its bite in Pennsylvania. If you should encounter one, let it go about its business. Most bites occur from people trying to kill or capture the snake - both unnecessary and illegal actions. It has been my experience that unless provoked, the massasauga would much rather escape than stand its ground. The fate of this fascinating creature now rests in our hands. Will we let it slip away like so much of our natural heritage, or will we preserve it for future generations as a valuable and fascinating part of our biotic community? The choice is ours.

## Eastern Fox Snake Hibernacula

*By Diane Salter*

This past September the Toronto Zoo constructed two hibernacula for the 'threatened' Eastern Fox snake in Norfolk County on Long Point Region Conservation Authority lands near Big Creek. The project was coordinated by Bob Johnson, Curator of Amphibians and Reptiles and Andrew Lentini, Curatorial Keeper, both of whom are from Toronto Zoo. One of their mandates is to aid endangered and threatened species. Portions of Norfolk County provide some of the most significant habitat for this rare snake in



Constructing hibernacula in Norfolk County

Canada. These hibernacula will provide safe wintering homes for these snakes.

First two large pits were dug, 6 feet deep and over 10 feet across. Concrete blocks were hand placed at three corners from the bottom of the pit up to grade with the block holes arranged so that the snakes could travel from top to bottom or exit laterally at any depth. This way the snakes could choose the preferred temperatures and humidity. Plastic pipes were angled into the excavated holes (to provide entrance tunnels) and then the pits were carefully filled with a mixture of recycled blocks, old bricks and large pieces of concrete salvaged from the Norfolk County landfill site. A final layer of large stones was added to help insulate and protect the area, ensuring it will remain above freezing throughout the long winter. The project still requires more stone (hard to find in Norfolk) so if you know of anyone with rocks they would like to donate please let me know.

The day of the construction was one of those very hot summer days that we experienced this year. The enthusiastic crew from the Zoo was aided by staff and volunteers from the Upper Thames River Conservation Authority. Scott Gillingwater and his wife Teresa were very involved in researching the area prior to construction. The Zoo staff would also like to acknowledge the assistance of very helpful contractors and works supervisors at the Norfolk County Transfer Station who demonstrated their commitment to the project in skillfully excavating, sourcing materials, and placing huge chunks of concrete exactly where a snake would want it. Jim Oliver of the Long Point Region Conservation Authority readily gave approval for construction of these projects on Conservation Authority property.

By the end of the day everyone was exhausted but pleased with the completed projects.

Fox snakes, as with other Ontario snake species, are often persecuted due to misconceptions fueled by the media, television and even family and friends. Snakes are not the terrible creatures people once thought, but rather they are necessary contributors to our ecosystem.

By using common sense, instead of tall tales, we can again incorporate snakes into our landscapes. The construction of these hibernacula is a small step in the right direction.

## Build it and They Will Come

*By Andrea Sinclair, Coordinator, Ecosystem Restoration Centre for Environmental Training*

Niagara College has been very proactive in monitoring the extent snake populations near the Niagara Escarpment. In 2001, two snake hibernacula were built on opposite ends of the lagoons set on the school's grounds at the base of the Niagara Escarpment. Two meter deep holes were dug and then filled with rocks, wood debris and rubble, under the guidance and advice of both professors at the college and Bob Johnson, Curator of Amphibians and Reptiles at the Toronto Zoo. Monitoring of these snake hibernacula commenced in 2003 and each subsequent year after that.

Drift fences were utilized to enclose possible snakes in the hibernacula and on April 19<sup>th</sup> 2004 and 2005. The efforts of the students were rewarded - two garter snakes were sighted. The students covering the project this year are making recommendations for the monitoring plan to increase observation times and allow for more information to be collected about snake populations in the area. The "build it and they will come" theory proved right. It may be small, but the snakes are discovering these hibernacula as suitable over-wintering sites.



Enclosing the hibernaculum

# The Massasauga Rattlesnake

*By Alice Peebles*

My name is Alice Peebles. I am 6 years old. On April 8, 2006, I went to the Toronto Zoo to the Massasauga Rattlesnake Conservation Programme with my big sister Grace (who is 8) and our Mum and Dad. We had a great time and I want to tell you about it.

We wanted to learn about snakes because sometimes we go to islands and cottages near snakes and we wanted to know how to live safely with snakes and treat them well.

We learned a lot about rattlesnakes and we met some live snakes! We got a poster with pictures of many snakes on it. My favourite snake pictures were the massasauga rattlesnake and the smooth green snake and the northern redbelly and the blue racer, queen and black rat snakes. The blue racer and the eastern rat snake are the biggest snakes in Ontario.

Snakes have under-scales that they use to squirm along the ground. Humans don't have scales. They use their feet instead of under-scales.

We learned to always wear boots or shoes in places where there might be rattlesnakes, and to watch where you are walking so you do not step on one. If you see a rattlesnake you should not touch it or go nearer or throw things at it or try to hurt it. You should stop, and then go away from it and tell your parents. The rattlesnake will not attack you or chase you if you leave it alone. If you hear the rattle, that is the snake saying "Don't hurt me, please



Andrew Lentini, Curatorial Keeper, Amphibians and Reptiles at Toronto Zoo and Alice Peebles

go away".

Grace wrote down some things that she learned. The Massasauga rattlesnake is the only venomous snake in Ontario (venomous means its bite can have poison in it). They are found in bogs, prairies and forests, and they have some protected habitats in special parks. Rattlesnakes can swim, but they don't really like to. Male snakes combat (which means fight with each other). Female rattlesnakes give birth to 8 to 10 live baby snakes, and stay with them for 4 to 5 days. They hibernate, sometimes near each other, and they eat mice. Alice asked if the rattlesnakes could talk to each other and the answer was that they could communicate in their own "language".

After Andrew and Bob talked to us about different kinds of snakes and gave us snake books and stickers, they brought out some snakes for us to meet. Andrew asked me to help get the first snake out of the really big container. He gave me a big hook. When I looked inside the snake was really huge and pink, but it was a pretend snake! I sure surprised everyone, when I pulled it out with my hook! My mom and dad were surprised too. Then Andrew showed us a fox snake. We touched it. It was dry and sort of cold. It was not slimy, like a worm. It had a little pointy tail that wrapped around my wrist.



Then Andrew brought a massasauga rattlesnake out of a very secure box. It had a lock and little holes for the snake to breathe. Andrew put the snake's head in a tube so we would be safe. Then he showed it to everyone. Mostly people were not scared of it. Our Mom touched its rattle.

If there are other kids reading this, Grace and I want to thank you for reading, and to tell you that you should be careful around places where rattlesnakes might live, but you should not be afraid. They will only hurt you if you do something to them. So if you leave them alone, they will leave you alone, and so people and massasauga rattlesnakes can live together in peace.

## Fun 'Snake' Recipe

What you'll need:

50ml	¼ cup	Margarine or butter
250g	1 pkg	Regular marshmallows (~40) or 5 cups miniature
2ml	½ tsp	Vanilla extract
1.5L	6 cups	Rice Krispies cereal
		Berries
		Fruit flavoured snacks
		Peanut butter or frosting

How to make it:

1. In a large microwave safe bowl, heat margarine and marshmallows at HIGH for 3 minutes, stirring after 2 minutes.
2. Stir in vanilla and KELLOGG'S RICE KRISPIES cereal until well coated. When slightly cooled, shape mixture into



snakes using buttered hands. Place on surface sprayed with cooking spray, or wax paper.

3. Decorate snakes using cereal, berries, fruit flavoured snacks or candies. Use peanut butter or frosting to attach decorations, or make stripes and spots.

Stove top method:

1. Melt margarine in large saucepan over low heat. Add marshmallows and stir until completely melted. Follow steps 2 and 3 above.

**Editor's note:** The following activities for our younger readers are adapted from the Ojibway Nature Centre's *Randy the Rattlesnake Activity Book*.

## Test Your Knowledge

Okay herpetologists, here's a chance to test your snake knowledge! All you have to do is read the following sentences and decide if they are true (correct) or false (wrong). Good luck!

True or False?

1. Rattlesnakes hibernate underground throughout the winter.
2. Rattlesnakes chew their food before swallowing.
3. Rattlesnakes lay eggs.
4. Rattlesnakes smell with their tongues.
5. Rattlesnakes are mammals.
6. Snake skin is slimy and wet.
7. Rattlesnakes dig their own hibernaculum.
8. Rattlesnakes are herbivores.
9. The massasauga rattlesnake is the only venomous snake in Ontario.
10. Snakes shed their skin in one piece.
11. Rattlesnakes bite only as a last resort.
12. Snakes "hear" by feeling vibrations through their jawbone.
13. Snakes are covered in scales that feel like our fingernails.
14. A rattlesnake's venom helps them to digest their prey.
15. Rattlesnakes are threatened in Canada.

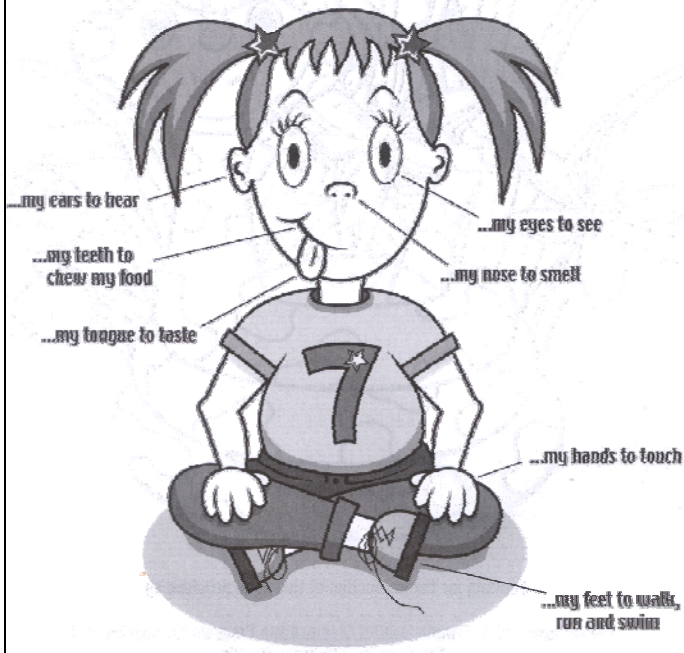
So how did you do? Check your answers to see how well you did:

- |          |          |          |
|----------|----------|----------|
| 1. True  | 6. False | 11. True |
| 2. False | 7. False | 12. True |
| 3. False | 8. False | 13. True |
| 4. True  | 9. True  | 14. True |
| 5. False | 10. True | 15. True |

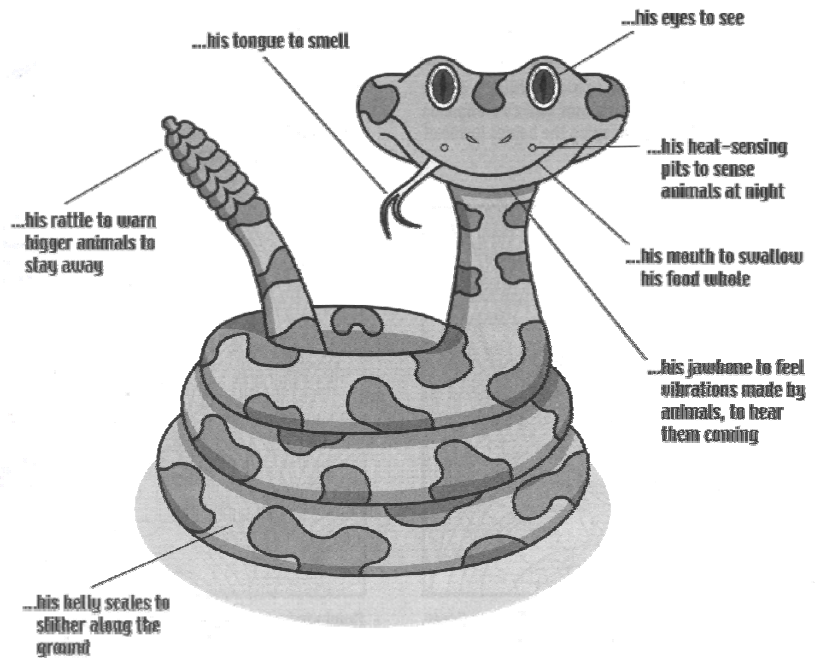
# Human Senses and Snake Senses

Hello! My name is Erin and this is my friend Randy. Randy's a massasauga rattlesnake. Rattlesnakes are very nice and neat animals. As a human I have five senses and special body parts that help me with my senses. Sometimes Randy uses his body parts and senses differently. Find out how we are different and the same:

I use ...



Randy uses ...



## Did you know?

A human's skin replaces itself about every 27 days by falling off in tiny pieces. A snake sheds its skin all at once in one long piece about 1 – 3 times a year.

A forked tongue helps snakes to smell their surroundings, find other snakes, find food and stay away from predators.

Snake scales are made of the same material as people's fingernails and hair.

Snakes can eat things that are twice the size of their heads by dislocating their jaw and swallowing their food whole.

When frightened, the eastern fox snake mimics (copies) the rattlesnake by vibrating its pointed tail quickly against dry leaves or grass so that it sounds just like a rattlesnake's rattle.

A piece is added to a rattlesnake's tail every time it sheds its skin.

Colouring Page



**Rattlesnake Tales** is a publication of the Toronto Zoo, and a contribution to the Massasauga Rattlesnake Recovery Team Education Program.

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**Support for the Programme:**

Human Resources Development  
Canada, Canadian Museums  
Canada, Environment Canada,  
Stewardship Fund, Young  
Canada Works

We would like to thank those who contributed to this forum for rattlesnake conservation, and we encourage our readers to submit reports, articles, letters, photos, and artwork for future issues of Rattlesnake Tales.

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## Fall Rattlesnake Workshop

***Date: Sunday, November 18<sup>th</sup>, 2006***

***Time: 10:00AM to 2:00PM***

***Location: Boardroom-Administration Building,  
Toronto Zoo***

**Space is limited, register NOW by phone (416) 392-5968; Fax: (416) 392-4979, or E-mail: [alentini@torontozoo.ca](mailto:alentini@torontozoo.ca)**

Each year, the Toronto Zoo hosts Rattlesnake Workshops for cottagers and their friends. A suggested donation of \$5.00 per person (\$10.00 per family) covers the cost of materials, including our conservation posters and video. Discussions about the natural history of rattlesnakes will be followed by ample opportunity to ask questions. Learn how to identify the Massasauga and meet a live rattlesnake.



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