

All About Snakes in Maryland



Whether we find them beautiful and beneficial or frightening, snakes hold a certain fascination for most people. History bears out the strong relationship between humans and snakes. For example, ancient Greeks thought snakes had mythical healing powers. Thus, the Caduceus, the symbol of medicine, contains two snakes coiled around a winged staff. Pharaohs in ancient Egypt wore the likeness of a venomous asp on their headdresses in the belief that it would protect them. The snake clan of the Hopi Indians of Arizona still celebrates snakes and their kinship with the earth in a traditional dance. Early in our country's history, snakes were used on the first American flag, a rattlesnake with the words "Don't Tread On Me".

(Queen Snake, photo above by John White)

Snakes have also been mythical figures of evil, like the snake that tempted Eve in the Garden of Eden. St. Patrick is celebrated in Ireland for having driven all the snakes away. Many children's fairy tales portray snakes as bad or evil creatures. Television and movies, which have used our fear of snakes to make a dramatic point, have also done much damage to our perception of snakes in general. This negative opinion in our current society has caused many snakes to be killed indiscriminately. Unfortunately, many times when snakes and people come into contact, the snake is automatically killed. Some people even pursue snake killing as a hobby. Rattlesnake dens in remote and rugged areas of western Maryland have been gassed or destroyed, killing most of their occupants.

The fact is that snakes are beneficial to man and hold an important place in the ecology of all parts of the world where they occur. They can effectively control the populations of small mammals, like mice and rats. They are also important food sources for hawks and other predators. Several types of snakes are popular as pets and many people breed and sell captive bred snakes.

Snakes of Maryland

Maryland boasts 27 species and subspecies of snakes, only two of which are venomous. These are the timber rattlesnake and copperhead. Comparatively, 115 snake species occur in North America while about 2100 species occur worldwide. Snakes are found in a variety of habitats in Maryland, from the tidal marshes of the Chesapeake Bay and Atlantic Ocean to the hardwood forests of the Allegheny Mountains. Two snake species are considered endangered in Maryland. The mountain earth snake is found exclusively in Western Garrett County and is found in fewer areas than any snake in the northeastern U.S. The rainbow snake was believed extirpated from Maryland until recently when a few were found in Charles County along the Potomac River. We know that the scarlet snake and timber rattlesnake are low in numbers in Maryland, but for most of our snakes, we know very little about their populations here. Snake killing and collection of snakes for food, hides and pets can contribute to the decline of snake populations. However, habitat destruction remains the leading threat to snakes and other wildlife.

*(Black
Rat
Snake,
photo
below by
John
White)*



Snake Biology

As we all know, snakes are long and cylindrical in shape and have no legs. But did you know that snakes don't

have eyelids or external ear openings? Their bodies are protected by a layer of scales. Each species of snake has a unique number of scales arranged and colored in a pattern on their bodies which we can identify them by. Snakes grow throughout their lives so they must replace the outer layer of scales, which does not grow, through a process called shedding. Shedding takes several days to a week to complete. You can tell a snake is ready to shed by the cloudy appearance of its eyes. Snakes are temporarily blind or nearly so at this time. To shed its skin a snake will rub its head against a rock, tree or some stable object to loosen its old skin and will then crawl slowly forward, turning this old skin inside out as it advances like when you pull your foot out of a sock.

All snakes are predators, eating meat only. They capture their prey in one

of three ways. Some catch and swallow their prey immediately. Others catch their prey, then constrict it until the animal is dead. Venomous snakes use a toxin that immobilizes or kills their prey. Snakes can dislocate their jaw so they can swallow prey much bigger than themselves.

Venomous snakes have two specialized hollow teeth called fangs. Fangs are attached to venom glands, which produce poison. The eastern hognose snake also has enlarged non-venomous fangs located in the rear of its mouth that are used for deflating toads, their favorite prey. Fangs are not found in all snakes, but all snakes do have teeth, usually six rows worth. The teeth are curved backwards, just like the barbs on a fishing hook, which keeps their prey from escaping.

Snakes do not hear well. They do, however, pick up vibrations from the ground and have a highly evolved sense of smell acquired through their tongue! When a snake sticks out its forked tongue, it actually smells the air. A special organ, called the Jacobson's Organ, in the roof of its mouth, translates "odor" molecules caught on the snake's tongue, so snakes literally taste odors around them. Like other reptiles, snakes are cold blooded, which means they cannot control their internal body temperature. Extreme heat or cold can kill them. Basking in the sun helps to start their engines, while hiding in the cool shade or in wet areas helps cool them down. Snakes hibernate in the winter in dens. Dens are areas free from frost and can be found in narrow crevices in rocks, animal burrows, holes under trees and stumps, under wood piles, and occasionally in basements.

Natural History

There are five key events in the annual cycle of snakes: spring emergence from hibernation; movement away from the den to summer range or birthing areas; birthing or hatching; mating; and fall ingress or movement back to the den to begin hibernation once more. During the first warm days of spring snakes emerge from their dens and begin sunning. After temperatures consistently stay above freezing snakes will begin searching for food and move gradually to their summer range and birthing areas. These movements can be as far away as five miles or as short as a 1/4 mile for a gravid (pregnant) female rattlesnake.

Most snakes mate within a month of leaving the den, but some species mate in the fall. Many snakes lay eggs, but about a third of the species in Maryland bear live young. Eggs are usually laid in warm, damp places. They are tough and leathery and may number from a few to a few dozen, depending on the species. Very few species guard nests, and all young, whether live-born or hatched, are independent at birth. Live-born young will remain near the female for at least a week or more after birth. In rattlesnakes and copperheads, the young are believed to follow a chemical trail left by the adult female back to the den. In the fall, snakes move back to the previous year's den. If a sudden cold snap catches them they may either perish or be fortunate and find a suitable secondary den. They usually do not tarry long at the den entrance, but enter for the long winter sleep. A number of species may share the same den. For example, black rat snakes, timber rattlesnakes and copperheads commonly den together. In fact, the black rat snake was formerly called the pilot black snake because it was believed that this snake "piloted" the way out of the

den in the spring for the rattlesnake.

Protection Efforts

All native snakes in Maryland are protected by the Nongame and Endangered Species Conservation Act. This means that native snakes cannot be killed, possessed, bred, or sold without first acquiring the proper permit from the Department of Natural Resources. Additionally, Maryland requires a **Captive Reptile and Amphibian Permit** for the possession, breeding, and sale of native reptiles and amphibians in the state.

Remember, snakes are a part of our natural world and should be left there unharmed. They are fascinating creatures worthy of our respect and admiration. Please enjoy and help protect Maryland's snakes and their habitats!

Checklist of the Snakes in Maryland

Common

- Black Rat Snake (*Elaphe obsoleta obsoleta*)
- Eastern Garter Snake (*Thamnophis sirtalis sirtalis*)
- Eastern Hognose Snake (*Heterodon platyrhinos*)
- Eastern Kingsnake (*Lampropeltis getula getula*)
- Eastern Milk Snake (*Lampropeltis triangulum triangulum*)
- Eastern Ribbon Snake (*Thamnophis sauritus sauritus*)
- Eastern Worm Snake (*Carphophis amoenus amoenus*)
- Northern Black Racer (*Coluber constrictor constrictor*)
- Northern Brown Snake (*Storeria dekayi dekayi*)
- Northern Copperhead (*Agkistrodon contortrix mokasen*)
- Northern Ringneck Snake (*Diadophis punctatus edwardsi*)
- Northern Water Snake (*Nerodia sipedon sipedon*)
- Rough Green Snake (*Opheodrys aestivus*)
- Smooth Green Snake (*Opheodrys vernalis vernalis*)
- Southern Ringneck Snake (*Diadophis punctatus punctatus*)

Uncommon

- Coastal Plain Milk Snake (*Lampropeltis triangulum elapsoides X triangulum*)
- Corn Snake (*Elaphe guttata guttata*)
- Mole Kingsnake (*Lampropeltis calligaster rhombomaculata*)
- Northern Red Belly Snake (*Storeria occipitomaculata occipitomaculata*)
- Queen Snake (*Regina septemvittata*)
- Smooth Earth Snake (*Virginia valeriae valeriae*)
- Southern Copperhead (*Agkistrodon contortrix contortrix*)
- Timber Rattlesnake (*Crotalus horridus horridus*)

Rare

- Northern Scarlet Snake (*Cemophora coccinea copei*)

- Redbelly Water Snake (*Nerodia erythrogaster erythrogaster*)

Endangered

- Mountain Earth Snake (*Virginia valeriae pulchra*)
- Rainbow Snake (*Farancia erythrogramma erythrogramma*)

Historical

- Northern Pine Snake (*Pituophis melanoleucus melanoleucus*)

For more information, please contact:

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Acknowledgments:

Queen Snake photo (top) by John White

Black Rat Snake photo (bottom) by John White