

Pennsylvania Snakes



Timber Rattlesnake
Crotalus horridus



Northern Black Racer
Coluber constrictor constrictor

Few other animals evoke such polarized emotions as fear, admiration, intrigue and ignorance as snakes. Throughout history, snakes have played integral roles in mythology and folklore. Snakes have often been characterized as evil or sinister. On the contrary, snakes do not possess such human characteristics. A snake's mission in life is to eat, grow and reproduce. More people are beginning to realize that snakes are an important part of the animal kingdom and play a specific and specialized role in the overall scheme of life. Twenty-one species of snakes are considered to be native to Pennsylvania. Each species has evolved to occupy a specific niche in our natural environment.



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What are the Differences?

Venomous or nonvenomous?

There are 18 nonvenomous and three venomous snake species in Pennsylvania. Some key physical differences between these two groups of Pennsylvania snakes facilitate identification.

All Pennsylvania native venomous snakes possess an indentation or pit on each side of the head between the eye and nostril, a vertically elliptical eye pupil resembling that of a cat, and a single row of scales on the underside of the tail.

Nonvenomous Pennsylvania native snakes do not possess facial pits, have round eye pupils and a double row of scales on the underside of the tail.

Head shape often presents problems in identification. Copperheads and rattlesnakes have flattened, triangular-shaped heads. However, some nonvenomous species can also display a flattened head. Therefore, it's wise to focus on other characteristics when identifying snakes.



Venomous



Venomous pupil



Nonvenomous pupil



Venomous scales



Nonvenomous scales



Venomous head



Nonvenomous head

Coexisting with snakes

Snakes are an essential component of Pennsylvania's wildlife resources. Fear of snakes often stems from a lack of knowledge of its habits and role in the ecosystem. Some people don't think about snakes until snakes show up in their backyard, shed or house. The majority of snakes appearing in these areas are nonvenomous and harmless. Still, it is understandable that when a snake is discovered near or in the house, people quickly seek a way to remove it.

Take precautions to prevent snakes from entering dwellings. Sealing openings and cracks, especially at or near ground level, is an excellent preventive measure. Removing debris in the yard or moving the wood pile farther from the house can also help. Snakes have biological needs such as food and cover that must be met for them to remain in a location. If those needs are not met, they move on.

Field guides are great tools for bridging gaps in knowledge. For beginners, a trip to the reptile house of a local zoo is a good way to make the transition between printed pictures and live animals. The next time you see a snake in the backyard or crossing a road, respect it for what it is, what it does and allow it to continue on its way.

Snakebite?

If a person is bitten by a venomous snake, there are several steps that should be taken. The staff at the Penn State Poison Center of the Milton S. Hershey Medical Center, Hershey, recommends the following in the event of a snakebite.

Do's

1. Calm and reassure the victim, and keep the victim immobile.
2. Call 911 or the Penn State Poison Center at 1-800-222-1222.
3. You may apply a light constricting band above the bite area (be able to insert a finger under the band). Do not release the band unless it becomes too tight from swelling.
4. Move the victim to a medical facility without delay.
5. A tetanus shot may also be required.

Don't's

1. Don't use ice, cold packs or sprays.
2. Don't incise and suction unless directed by a physician.
3. Don't use a tourniquet.
4. Don't give alcohol or any drugs.
5. Don't wait to see if symptoms develop.



For more about Pennsylvania snakes:

www.fishandboat.com/Resource/AmphibiansandReptiles

Regulations:

www.fishinpa.com

Species status:

<http://pfbc.pa.gov/SpeciesStatus.htm>

Native reptile and amphibians species:

<http://pfbc.pa.gov/nativeAmpRep.htm>

Species of special concern:

www.fishandboat.com/Resource/SpeciesofSpecialConcern

PFBC social media and mobile app:

www.fishandboat.com/socialmedia

Venomous Snakes



Eastern Copperhead
Agkistrodon contortrix



yellow phase



black phase

Timber Rattlesnake
Crotalus horridus



Eastern Massasauga
Sistrurus catenatus



Biology

Snakes possess a well-developed skeletal structure and are vertebrates. The bodies of snakes are covered with scales, which classifies snakes as reptiles. Snakes and other reptiles are poikilothermic, meaning variable temperature. A snake's body temperature depends largely on the temperature of its surroundings. Snakes move in and out of various temperature zones to regulate bodily functions.

Snakes do not have limbs to monitor the environment. A forked tongue flicks in and out of the mouth to sample scent molecules. The tongue transfers these molecules to the Jacobson's organ located on the roof of the mouth. Chemical information is transferred to the brain, which allows the snake to interpret the smell. Scent trailing is used in locating prey, finding mates and returning to hibernating areas.

Reproduction

Mating can occur from spring until fall. Snakes give birth in one of two ways. Species that lay eggs, such as Eastern Ratsnakes, are termed oviparous. Other species including Eastern Gartersnakes, Northern Watersnakes and Pennsylvania's three venomous species give birth to live young and are termed ovoviviparous. Young are usually born or hatch in late summer or early fall. Egg or embryo development ranges from 8- to 12-months. Reproduction in ovoviviparous species first occurs at 3- to 7-years after birth. Some species may also bear young only at 2- to 3-year intervals. The number of eggs or young produced by Pennsylvania snakes varies depending on the species. Northern Ring-necked Snakes and Eastern Wormsnakes typically produce litters of one to six young, and Eastern Hog-nosed Snakes, Eastern Gartersnakes and Dekay's Brownsnakes can produce litters of 36 to 48 young.

Growth

The bodies of snakes enlarge until the skin must be shed for growth to continue. Young snakes can shed four or more times per year during the first two years of life. Adult snakes may shed only once or twice per year. Snakes that are about to shed typically display a cloudy or bluish eye appearance, caused by the old skin and the lymph fluid secreted beneath it in preparation for shedding. The first rattle segment in newborn rattlesnakes is called a button.

Each time a rattlesnake sheds, a new rattle segment is added at the base of the tail. Each shedding carries the button farther from the tail base. Buttons and rattle segments can be lost. Counting rattle segments is not an accurate way to determine the age of the snakes as snakes may shed their skins several times a year.



Eastern Ratsnake
Pantherophis alleghaniensis

Food and feeding

Pennsylvania snakes have varied diets, although all are carnivorous. Food sources include insects, worms, amphibians, reptiles, birds and small mammals. Some snakes display distinct food preferences. Eastern Hog-nosed Snakes specialize in consuming toads and frogs. This snake is unaffected by the distasteful toxins that toads often secrete from their paratoid glands.

Nonvenomous snakes such as the Eastern Gartersnake swallows its prey whole. Eastern Ratsnakes and Eastern Milksnakes constrict prey by encircling its body, resulting in suffocation before consumption. The Northern Black Racer often holds prey down to the ground by the weight of its body, which also results in suffocation. Venomous snakes capture prey by striking it and injecting venom through two large modified teeth, or fangs. Venom is a modified saliva that contains digestive enzymes and toxic proteins that destroy cells, causing hemorrhaging and fluid imbalance leading to shock and death. Prey struck by a venomous snake often travels a short distance before dying. The snake finds the dead prey by following its scent trail.

Venomous snakes and people

The three venomous species of snakes in Pennsylvania are the Eastern Copperhead, Timber Rattlesnake and Eastern Massasauga. Reports of venomous snakebites in Pennsylvania are rare. Bites usually occur while a person is trying to catch or carelessly handle one of these snakes. All of these species are usually nonaggressive and prefer to avoid confrontation. Venomous snakes often quietly move away from an approaching person or remain completely still and allow perceived threats to pass by.

Contrary to popular belief, rattlesnakes do not always rattle when a person or animal is near. When traveling through areas thought to contain venomous snakes, people can minimize the possibilities of an unintended encounter by using some common sense. In the vast majority of snake encounters, people have ample opportunity to stop, backup or otherwise avoid the snake.

Snakes tend to be found near cover such as fallen logs, brush piles, rock walls, abandoned house foundations or rock ledges, where snakes may be resting or lying in wait for prey. Encounters can be reduced by watching where you place your hands and feet. One should try to walk around, rather than step over fallen logs.

Sometimes a person's curiosity or fear can lead to poor judgment and possibly result in a snakebite. There are several signs and symptoms of envenomation including fang marks, pain and possibly a metallic or rubbery taste in the mouth several minutes after a bite, with a tingling or numbness of the tongue. Other signs include significant swelling within 10 minutes of a bite. Nausea, weakness and temperature change may occur. Black and blue discoloration may appear within 3 to 6 hours.

Collecting or killing snakes

All snakes in Pennsylvania are protected by Pennsylvania Fish & Boat Commission regulations. Species that are not listed as endangered, threatened or candidate may be captured or possessed under specific daily and possession limits. Consult the *Pennsylvania Fishing Summary* for more information. Endangered or threatened species cannot be caught, killed, possessed, imported to or exported from Pennsylvania. The Timber Rattlesnake and Eastern Copperhead are protected under additional regulations. Specific questions about current regulations can be directed to any of the Commission's Regional Law Enforcement Offices or the Natural Diversity Section in the Division of Environmental Services.

Nonvenomous Snakes



Eastern Wormsnake

Carphophis amoenus amoenus



Northern Ring-necked Snake

Diadophis punctatus edwardsii



Eastern Milksnake

Lampropeltis triangulum



Kirtland's Snake

Clonophis kirtlandii



Eastern Ratsnake

Pantherophis alleghaniensis



Northern Watersnake

Nerodia sipedon sipedon



Northern Black Racer

Coluber constrictor constrictor



Eastern Hog-nosed Snake

Heterodon platirhinos



Northern Rough Greensnake

Opheodrys aestivus aestivus



Queensnake

Regina septemvittata



Short-headed Gartersnake

Thamnophis brachystoma



Eastern Smooth Earthsnake

Virginia valeriae valeriae



Dekay's Brownsnake

Storeria dekayi



Eastern Ribbonsnake

Thamnophis saurita



Mountain Earthsnake

Virginia valeriae pulchra



Red-bellied Snake

Storeria occipitomaculata



Eastern Gartersnake

Thamnophis sirtalis sirtalis



Smooth Greensnake

Opheodrys vernalis