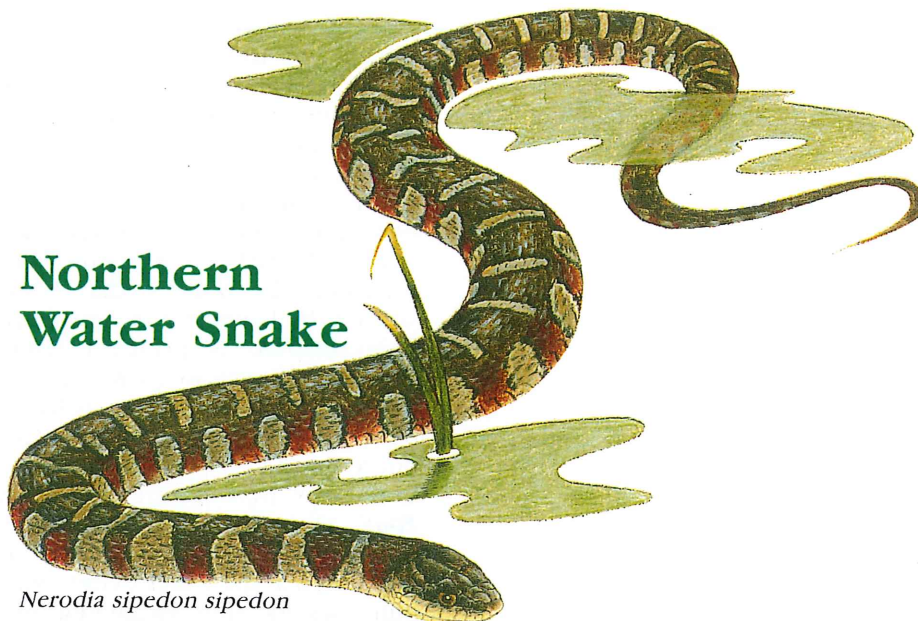


Northern Water Snake



Nerodia sipedon sipedon

General characteristics. This is the largest of Pennsylvania's three water snakes, reaching an adult size that may range from 24 to over 50 inches. The male is usually smaller than the female.

Often killed by people out of fear, the northern water snake is not a water moccasin and it is not poisonous. The water moccasin, or cottonmouth, common to the South, is not found naturally in Pennsylvania and does not appear farther north than extreme southern Virginia.

The northern water snake has a tendency to display a nasty disposition and becomes quite formidable when angered. It flattens its head and heavy body when striking, and although it flees if it can, it strikes repeatedly if cornered. It has strong jaws, powerful enough to inflict a severe bite. Bites by the northern water snake also may bleed profusely due to an anticoagulant quality of the snake's saliva. It does not inject a poisonous venom.

The northern water snake is active both day and night and appears in sufficient numbers to be seen on a regular basis.

Identification. It is possible to see the northern water snake in an array of colors. On some adults, the patterns may even become obscure, blending into the background color. Generally, the northern water snake is reddish, brown or gray to brownish black. There are dark crossbands on the neck region. These bands become dark blotches, alternating in position from the back to each side as they progress down the body and onto the tail. The dark patterns are wider than the spaces between them. White, yellow or gray covers the belly, which is interspersed with reddish-brown or black crescent-shaped spots. The head of the northern water snake is distinct, well-defined from the neck. Its scales are keeled and it has a divided anal plate.

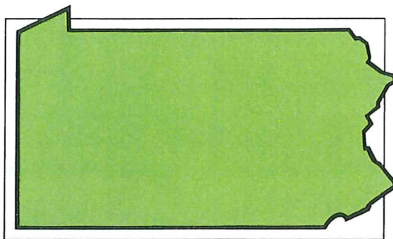


Range. The northern water snake can be found from Maine, across Quebec, reaching down to Colorado in the west. It extends south to North Carolina. All of the state's 67 counties are host to the northern water snake.

Habitat. Scattered statewide, it is possible to encounter one of these aquatic-loving animals when hiking near a stream or lake, or fishing or boating. It prefers quiet water. Still, the northern water snake is found in fast-moving streams as well as lakes, ponds, bogs and swamps and rivers or slower streams. Submerging, it swims underwater seeking protection among the pondweeds and other aquatic plants. When basking, it likes to drape itself over the branches of a nearby shrub or gather the warmth from a sun-baked rock near the water's edge. It may seek relief from the hottest days of summer by becoming at least partially nocturnal.

Reproduction. As springtime temperatures warm the air, the northern water snake stirs from its winter home in pursuit of its mate. Mating could occur as early as April or as late as June. The northern water snake gives birth to living young. An average litter of 25 young water snakes is produced during the period of August to October. Measuring six to 12 inches at birth, they are a brighter color than the parents.

Food. The northern water snake hunts most of its food in the water. On occasion it leaves the water to search for frogs among the grasses and other vegetation at the water's edge. Salamanders, crayfish and other crustaceans, minnows and slow-swimming, usually sick or disabled fish add variety to the menu of the water snake. Even small mammals have been known to fall prey to this water snake. Rounding out the predator-prey relationship, young northern water snakes are in turn eaten by the larger sport fish.



Rough Green Snake

Opheodrys aestivus

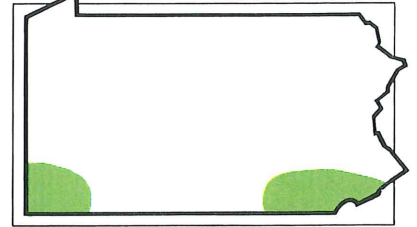
Threatened Species

General characteristics. It is easy to understand why this snake carries the nickname "vine snake," considering its color, slight build and penchant for climbing through brush. The rough green snake is a graceful animal, liquid-like in its movements from one tree branch to another. It is mild-tempered and not easily aroused when confronted. At 22 to 32 inches, it is the largest of the state's two green snakes.

Identification. The rough green snake has a slender body with a long, tapering tail. Its body is a consistent light or pale green throughout except for a white to yellowish-green belly. Its color is uniform throughout, and it has

no markings. The divided anal plate is evident, and the scales are sharply keeled, hence its name, the rough green snake.

Range. The rough green snake is found only in two small areas of the state, in each of the southern corners. It extends south to the Florida Keys and west to Kansas and Texas. From here, its range continues into a portion of Mexico. In Pennsylvania, it's a threatened species.



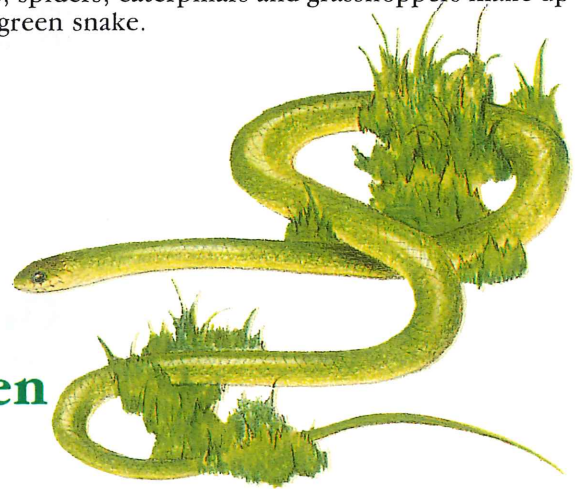
Habitat. It is arboreal because it spends most of its time in brush, trees and vines such as greenbriers. It especially likes dense growth near a stream or lake. It is an excellent climber and it blends well with its background, its green color easily melting into the surrounding foliage. But the rough green snake is also a good swimmer and does not hesitate to glide quickly and silently into the water if disturbed.

Reproduction. The rough green snake locates a suitable mate in spring or fall. It is oviparous, which means that it lays eggs rather than gives birth directly to live young, as do some other snakes. The eggs are deposited in June through August, usually in a depression beneath a well-placed stone or rock. Three to 12 eggs are laid. They are hard and shaped like a capsule about 1½ inches long. They hatch in five to 12 weeks, revealing young grayish-green snakes seven to just under nine inches in length.

Food. The rough green snake forages for food as it moves gracefully through the inner branches of a basket willow or other small tree or shrub. But it seeks prey on the ground as well, moving slowly through the grasses in search of a meal. Crickets, spiders, caterpillars and grasshoppers make up the main diet of the rough green snake.

Eastern Smooth Green Snake

Opheodrys vernalis vernalis



General characteristics. Commonly known as the “green grass snake,” the eastern smooth green snake spends most of its time on the ground. It is the terrestrial cousin of the arboreal rough green snake and is slightly smaller. Adult sizes range from 14 to 20 inches. It is said to be the most gentle of all North American snakes.

Identification. The eastern smooth green snake is small and streamlined in appearance with the body ending in a long, tapered tail. Its body is a bright



grass-green above with a plain white belly tinged with just a touch of pale yellow. The anal plate is divided and the smooth scales (keeled scales on the rough green snake) depict the name of the eastern smooth green snake.

Range. From Pennsylvania, the range of this snake extends south through parts of Virginia and West Virginia and north to Canada's Maritime Provinces. Minnesota marks its western boundary. Unlike the rough green snake, the eastern smooth green snake is distributed almost entirely statewide. The only exceptions may be the two small locations where the rough green snake resides.



Habitat. The eastern smooth green snake is largely terrestrial, spending more time on the ground than above it. It can be found in meadows, grassy marshlands, moist, grassy fields and even along the edges of forests. Hikers and others might encounter the eastern smooth green snake because it is most active during the day. A good eye may be necessary, however, because the color and build of the eastern smooth green snake provide excellent camouflage in its grassy domain.

Reproduction. Waiting for the sun to move a bit more northward, the eastern smooth green snake is one of the last to emerge from winter's hibernation. Mating occurs in spring to late summer. Three to about 10 eggs are laid in July to August under a sun-warmed stone, which helps them incubate. Thin-shelled and cylindrical, the eggs hatch in four to 23 days. The snakes that emerge are four to six inches long and dark olive-gray. It is not unusual to find several females sharing the same nesting area.

Food. The eastern smooth green snake is unusually insectivorous, feeding on a variety of insects and larvae. People should consider the eastern smooth green snake a good friend, given its partiality for insects.



Queen Snake

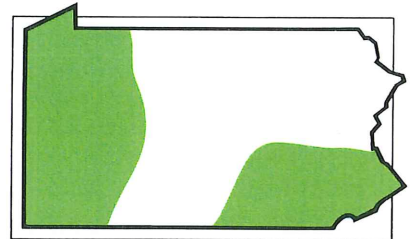
Regina septemvittata

General characteristics. Another of Pennsylvania's snakes categorized as "water" snakes, the queen snake in some local areas may be known as the "willow" snake or "leather" snake. It is very much an aquatic animal and an excellent swimmer. If disturbed by an intruder it does not hesitate to slip

quickly into the water for safety. Adult queen snakes are 15 to 36 inches in length.

Identification. The queen snake is an attractive snake and a study in contrasts. The body color can be tan to shades of brown or almost black. A yellow stripe accents the lower side of the body and the belly is yellow with four well-defined brown stripes running its length. Two of these stripes are located near the center. Two larger stripes stretch along the sides of the belly. Some specimens may also have three faded stripes continuing down the back. The scales are keeled and the anal plate is divided.

Range. In Pennsylvania, the queen snake is found in about the western third of the state between the northern and southern borders. The range then splits, jumping the Allegheny Mountains to appear in the southeastern corner, where it extends as far west as Franklin County. Its range takes it to the Gulf Coast. It also is found in the Great Lakes region.

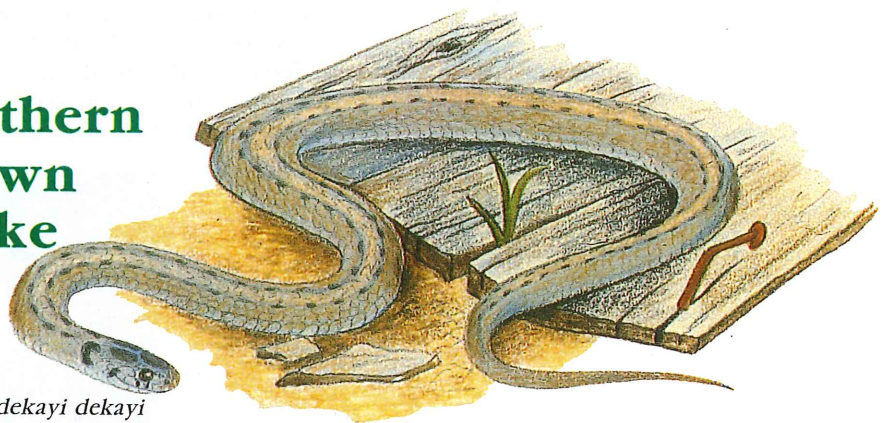


Habitat. The queen snake prefers streams and small rivers as opposed to lakes or ponds, with a preference for those waterways amply strewn with rocks along their bottoms and sides. It does not emerge to bask as much as other water snakes. More often it can be seen swimming along the surface of the moving water or found under shoreline rocks.

Reproduction. The queen snake selects its mate in April or May. The eggs develop internally and the female gives birth to her young in late August to early September. The young may number from five to just over 20 individuals. The newborns range from 7½ to about nine inches in length. They look much like the adult queen snake except that the belly stripes tend to be more clearly defined.

Food. The queen snake has a definite preference when it comes to finding a meal. Considering its aquatic habitat, it's no surprise that the queen snake feeds almost exclusively on crayfish and especially those in the soft-shelled stage.

Northern Brown Snake



Storeria dekayi dekayi

General characteristics. Every so often someone might refer to the northern brown snake as “Dekay’s” snake, referring to James Edward Dekay, an early New York zoologist for whom this reptile was named.

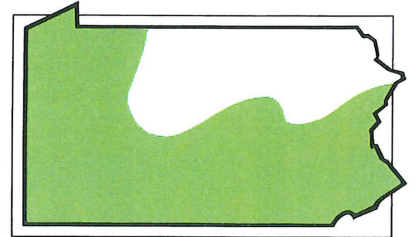
Like so many other snakes, the northern brown snake is secretive, prefer-



ring to keep its whereabouts unknown. It is also one of the state's smallest snakes, reaching adult sizes of only nine to 13 inches. For the most part, the northern brown snake is most active during the day. However, when warm weather sets in, it becomes more nocturnal, choosing to roam over its somewhat limited range after the sun has set.

Identification. The northern brown snake is a small snake but with almost disproportionately large eyes. Its back and sides range in color from gray to yellowish brown, brown or reddish brown. It has two parallel rows of small dark spots bordering a wide but indistinct stripe that runs down the center of the back for its full length. The belly can be pale yellow or brown, even pinkish, and it is edged with small black spots. In some specimens, a dark bar extends from just behind the eye downward to the upper lip. The scales of the northern brown snake are keeled and the anal plate is divided.

Range. The northern brown snake is abundant in a major portion of the state, and although this snake is thought to be distributed statewide, that may not be the case. Reported sightings are absent in the northern half of the state east of the Allegheny Mountains. Its natural range begins in Maine and continues south to Virginia.



Habitat. The northern brown snake is usually found near water or areas that remain damp most of the time, settling into moist upland woodland or lowland marshes. Margins of swamps or bogs are acceptable habitat and it has showed up in gardens, even golf courses, parks and other urban environs. Wherever it resides, the northern brown snake takes refuge under downed logs, flat rocks and even trash, if need be.

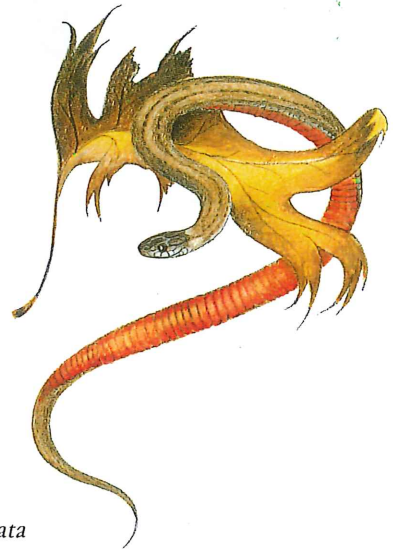
Reproduction. Mating in either the spring or autumn, the northern brown snake gives birth to three to 30 live young in July through September. Barely three inches to perhaps nearly five inches long at birth, the young Dekay's snake is only a sixteenth of an inch in diameter. The newborn is a bit darker than its parent and has a yellowish collar across the neck. It assumes the adult colors during its first summer.

Food. Food consists mainly of worms, slugs and snails, prey that is usually easy to find in a damp environment. Not much else is consumed by the northern brown snake, which in turn is preyed on by skunks, hawks and owls.

Figure VI-19



When possible, hawks and other large birds of prey feed on the brown snake and other small reptiles.



Northern Redbelly Snake

Storeria occipitomaculata occipitomaculata

General characteristics. A snake of small proportions, the northern redbelly snake rarely exceeds eight to 10 inches. It is secretive and often goes undetected by anglers and others who regularly spend time outdoors.

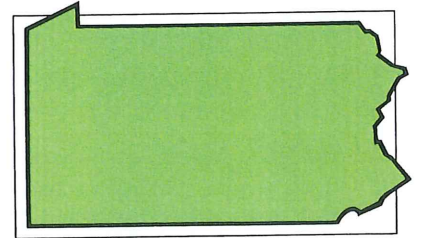
Identification. The northern redbelly snake may be gray, black, brown or rusty red with stripes that vary in number. A single broad, light stripe may run down the back. Four faint, narrow, darker stripes may be present. In some cases, all five stripes appear. The head has a blackish cast over the body color, and there are three distinct light spots on the nape of the neck. The belly, reddish in most cases, also may be orange or yellow or even blue-black. The belly is unmarked and can be distinguished from Kirtland's snake, which has a double row of black spots down the belly. The scales are keeled and the anal plate is divided.

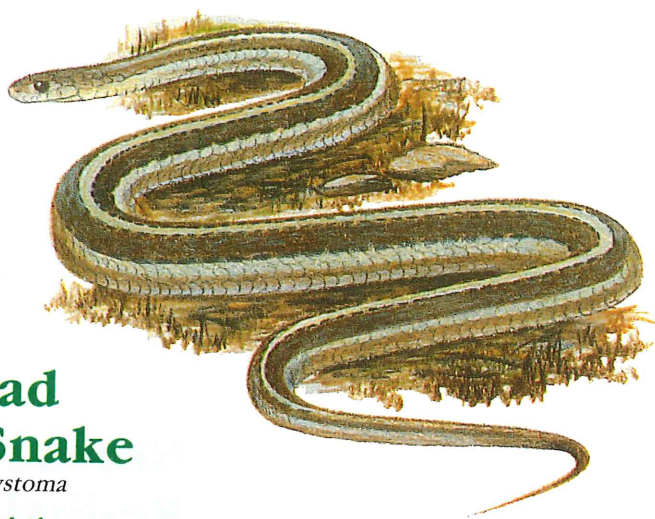
Range. The northern redbelly snake is most common in the northern tier counties and in other mountainous regions of the state. It is found to a lesser extent west of the Allegheny Mountains. Except for Florida, it is found over nearly the eastern half of the United States. It extends into parts of Canada.

Habitat. The northern redbelly snake likes forested areas, residing in densely covered mountains or hilly woodland. It is also known to dwell in bogs, apparently content in habitat that may range from quite wet to only slightly moist. It hides under a variety of debris and could be found in seclusion among lumber, stone and other objects piled around houses.

Reproduction. The northern redbelly snake comes out of its hiding place during the spring or fall in search of a mate. After breeding, from one to 20 young are born in early June to September. When born, the young redbelly snakes measure from just under three inches to about four inches in length. They mature in two years. The young reptiles resemble their parents in appearance, although the juveniles may be a bit darker, and show more contrast in the pattern.

Food. The northern redbelly snake prefers to feed on slugs and worms.





Shorthead Garter Snake

Thamnophis brachystoma

General characteristics. There are three garter snakes that make Pennsylvania their home, the eastern garter snake, the shorthead garter snake and the ribbon snake. The shorthead garter snake, at 14 to 18 inches, averages a bit smaller in size than the eastern garter snake and is not as widely distributed. Still, the shorthead garter snake is quite common in its range. It congregates in large colonies.

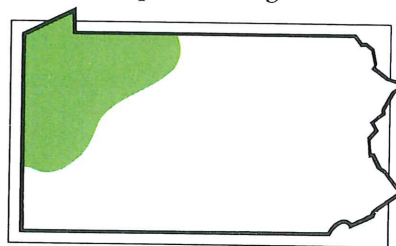
Identification. Taking a clue from its name, one could correctly assume that the head is short. Most people would find it difficult to distinguish where the neck ends and the head begins because both are the same diameter. The shorthead garter snake is blackish to dark shades of brown, accented with a well-defined light brownish or tan stripe down the middle of the back and a stripe along each side near the belly. At times, these side stripes are bordered by narrow black lines. The rows of black spots that occur between the stripes on other garter snakes are absent on the shorthead garter snake. The scales are keeled and the anal plate is single.

Range. Northwestern Pennsylvania is included in the original range of the shorthead garter snake. It extends into only a small portion of southwestern New York.

Habitat. It is found in the uplands, preferring old fields, meadows and pastures. The shorthead garter avoids woodlands, which its cousin the eastern garter snake will not. It takes shelter in piles of stone and under other debris in open areas, often near water.

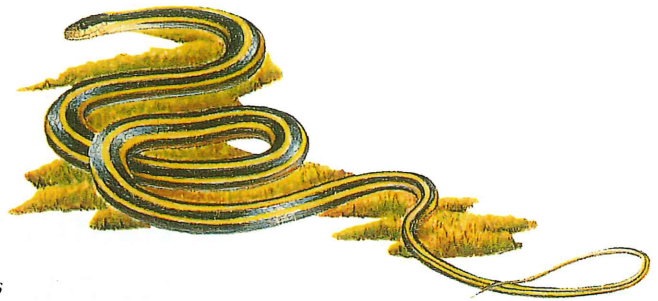
Reproduction. The shorthead garter snake seeks its mate in March or April. By late July through September, the female gives birth directly (it does not lay eggs) to five to 15 juveniles. Five to six inches long at birth, they're already one-third their adult size.

Food. Worms make up the primary diet of the shorthead garter snake. Insects and small amphibians round out the menu.



Ribbon Snake

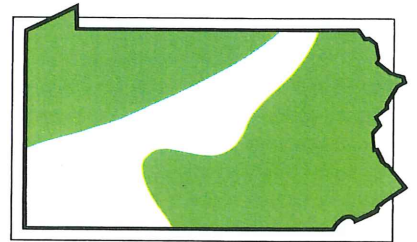
Thamnophis sauritus



General characteristics. This animal is a close relative of the eastern garter snake and shorthead garter snake, but it is considered more aquatic. It attains a size equal to its cousin, the eastern garter snake, roughly 18 to 26 inches. Very agile, the ribbon snake moves quickly and with little effort through thick vegetation. In the water, the ribbon snake glides swiftly across the surface. It rarely dives in the manner of true water snakes. Two subspecies are found in Pennsylvania. The eastern ribbon snake (*Thamnophis s. sauritus*) and the northern ribbon snake (*Thamnophis s. septentrionalis*).

Identification. This snake is slender, with fluid lines and a tail that is quite long. Three bright-yellow stripes, one on the back and one on each side, contrast sharply with a dark body that is reddish brown on the northern ribbon snake and black on the eastern ribbon snake. A dark-brownish stripe marks the margin of the belly. The belly itself is yellowish or greenish and has no markings. There appears just a touch of yellow under each eye. Close examination reveals keeled scales and a single anal plate.

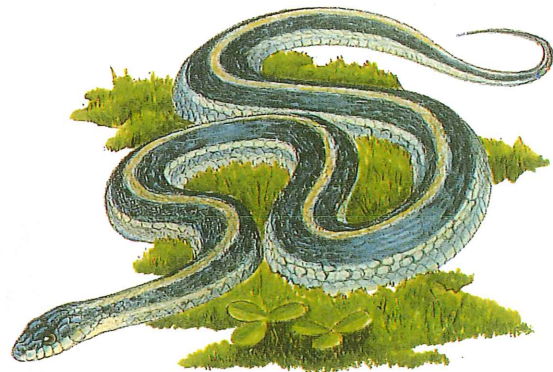
Range. The ribbon snake can be found within a split range in Pennsylvania. The northern ribbon snake resides in the northwestern part of the state. The eastern ribbon snake is found in the balance of the range. Appearing west and east of the Allegheny Mountains, this colorful creature has not populated the mountains or plateaus themselves. It extends south into Georgia and the Gulf Coast.



Habitat. It is at least semi-aquatic, so one could expect to find the ribbon snake in wet meadows, bogs and marshes. It likes the weedy shorelines of lakes and shallow, meandering streams. It normally avoids deep water. It often suns itself draped on the branches of overhanging shrubs or trees. From here it can drop quickly to the water if startled. The ribbon snake seldom wanders far from its watery environs.

Reproduction. Soon after emerging from hibernation in the spring, male ribbon snakes begin looking for a suitable mate. The young are born by late summer, usually July through August. The litter can include anywhere from three to 25 juveniles. They measure seven to nine inches at birth and mature within two to three years.

Food. It should be expected that the ribbon snake would eat animals sharing its aquatic-related habitat. Thus, frogs, salamanders and small fish are the main staple of its diet. Interestingly, the ribbon snake normally does not consume earthworms, a favorite of others of the garter snake group.



Eastern Garter Snake

Thamnopsis sirtalis sirtalis

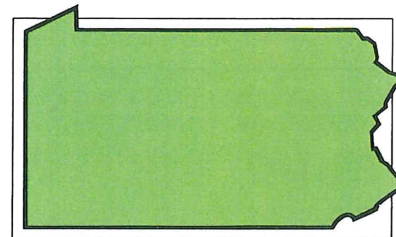
General characteristics. The chances are very good that anyone who has spent any time at all outdoors has seen an eastern garter snake at least once. It is the most widely distributed and familiar snake in North America. Adults attain lengths of 18 to 26 inches, a bit larger than the shorthead garter snake, but about equal to the ribbon snake, a close cousin.

Doing most of its traveling and foraging during the day, the eastern garter snake is active over a longer period than most other snakes. Able to tolerate colder temperatures, it leaves the den first in the spring and it's the last to hibernate in the fall.

A built-in defensive mechanism consisting of musk glands may cause potential attackers to have second thoughts. Discharge of a repugnant odor from the gland located in the vent would repel all but the most determined. The garter snake also may assume a defensive posture by flattening its body, hugging itself against the ground as do the water snakes, to which it is related.

Identification. The eastern garter snake is dark greenish to black across the body. Stripes, normally three, trail down the back and sides. They can be yellowish to brown or greenish, but regardless, usually are well-defined. A double row of spots commonly appears between the stripes. The belly of the eastern garter snake varies from greenish to shades of yellow and includes two rows of indistinct black spots. Like the shorthead garter snake, the eastern garter snake displays keeled scales and a single anal plate.

Range. The eastern garter snake appears over a wide range. It is found from Florida and the Gulf Coast north to well inside Canada. It goes as far west as eastern Texas and Minnesota. A statewide resident, the eastern garter snake has been found in all of Pennsylvania's 67 counties.



Habitat. This snake is often seen near water, where it locates some of its favorite food. The eastern garter snake also likes wet meadows, marshes and damp woodlands. It is a frequent visitor to farms and parks where it might be seen hunting food in the midst of moist vegetation. Even an urban area, especially where moisture or damp ground is found, could be a host to this well-known reptile.

Reproduction. The eastern garter snake mates sooner than most other snakes, beginning as early as late March and in some cases continuing into early May. In some instances, it may even mate in the fall. Mating occurs at or near the den where the winter was spent in hibernation. The male



searches for a suitable mate using sensory organs located in small tubercles on the chin. The progeny are born alive from late June to August and could number from as few as seven to as many as 85. In many cases, however, only a few survive. Those that do make it through the early weeks mature in about two years and are ready to mate by their third spring. The young garter snake is five to nine inches long at birth. It subsists on earthworms almost exclusively until its first hibernation.

Food. Even as an adult, the principle food of the eastern garter snake is earthworms. But after emerging from the den its first year it begins to take other food as well. Frogs, toads and salamanders add variety to the diet, as do insects, small mice and an occasional bird.



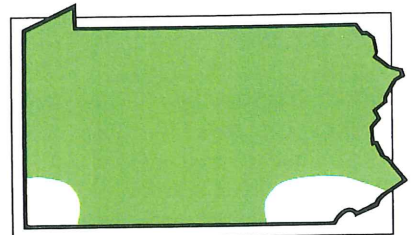
Smooth Earth Snake

Virginia valeriae

General characteristics. At a maximum seven to 10 inches long, the smooth earth snake competes with the eastern worm snake for the “smallest snake in the state” title. In fact, a subspecies is often seen in southeastern Pennsylvania with the worm snake with which it shares similar habitat. A good time to look for the smooth earth snake is immediately after a rainfall. It seems to enjoy a moist if not wet environment. The smooth earth snake is represented in Pennsylvania by two of three subspecies, the mountain earth snake (*Virginia valeriae pulchra*) and the eastern earth snake (*Virginia v. valeriae*).

Identification. The smooth earth snake is reddish brown to gray and has no distinctive markings other than possibly widely scattered small dark flecks over the body; on the eastern earth snake, flecks appear in rows on the back. The belly is unmarked and can be grayish, off-white or yellowish. On occasional specimens there may be a dark area between the eye and nostril. The scales are smooth on the eastern earth snake and very slightly keeled on the mountain earth snake. The anal plate is divided.

Range. In Pennsylvania, the mountain smooth earth snake is distributed along the Allegheny Mountains, beginning in Somerset and Fayette counties. Its range branches out in a funnel-shaped pattern as it goes northward. It extends south into West Virginia. The eastern earth snake appears in the extreme southeastern corner of the state, where its range extends south to Georgia and to the Gulf Coast.

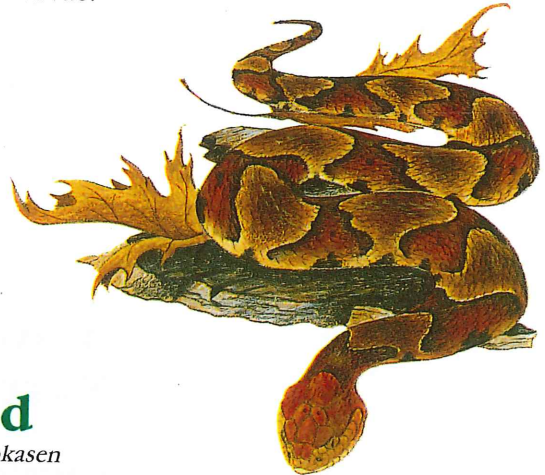


Habitat. Like the worm snake, the smooth earth snake prefers damp areas, especially when associated with a deciduous forest. It also is found in abandoned fields, as well as moist hillsides covered with rocks and timber.



Reproduction. The young of the species are born in August or September, with two to 14 unmarked reptiles included in the litter. They are three to slightly over four inches long at birth. Highly secretive, the smooth earth snake stays underground for long periods, emerging after a cool, heavy rain. Hiding under rocks or stones warmed by the sun is another favorite retreat.

Food. The diet of the smooth earth snake consists of earthworms, soft-bodied insects and their larvae.



Northern Copperhead

Agkistrodon contortrix mokasen

General characteristics. One of only three venomous snakes common to Pennsylvania, the northern copperhead is a close cousin of the cottonmouth or water moccasin found in more southerly aquatic environments. Reflecting its preferred habitat, the copperhead sometimes is referred to as the “upland” or “highland” moccasin. However, the cottonmouth is not indigenous to Pennsylvania.

The copperhead is a quiet creature—some would say almost lethargic—and usually does its best to avoid trouble, quietly stealing to a safe retreat whenever it can. If threatened, and it feels the need to protect itself, the copperhead is capable of striking out most vigorously. If the strike hits its intended victim, poison may be injected through two hollow fangs connected to glands located on each side and toward the rear of the head (See Figure VI-15). The venom-injecting apparatus is similar to that found in the rattlesnake, although the copperhead’s fangs tend to be a bit shorter. The venom is a hemotoxin, but with a trace of neurotoxin and as such primarily affects the bloodstream. The bite and resultant injection of venom is painful. But with prompt medical attention, it seldom poses any serious threat to life.

Identification. The copperhead, reaching an average adult size of 24 to 36 inches, is a stout-bodied snake, perhaps heavier than most harmless snakes of a similar length. The body color is copper or hazel-brown, sometimes accented with a tinge of pink or orange. Bold chestnut or reddish-brown crossbands are narrowest across the midline of the back and wider at the sides. They present the appearance of a dark hourglass if one imagines them stretched out flat. There may be small, dark spots between these bands. The crossband patterns on the copperhead are dark, but on the milk snake, a snake often confused with the copperhead, the hourglass-shaped cross-



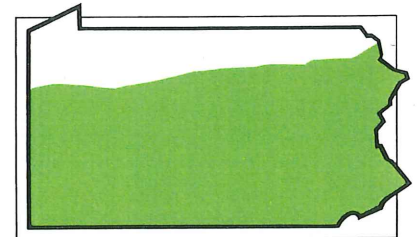
bands are a lighter color. Thus, the dark pattern on the milk snake is at its widest across the midline of the back, compared to the narrower dark band on the midline of the copperhead.

The belly of the copperhead is a mottled pattern of white to gray. This feature also can be used as an aid in separating the copperhead from the milk snake, which has a black and white belly pattern roughly resembling a checkerboard (See Figure VI-18). The unmarked head, somewhat triangular, is covered with large copper-colored scales.

The pupil of the eye is vertically elliptical (similar to a cat's pupil). It is a feature that can be used to distinguish all of Pennsylvania's poisonous from its nonpoisonous snakes (See Figure VI-14). The pupil is rounded on the nonpoisonous snakes common to Pennsylvania. The copperhead also has the facial pit located between the eye and nostril, common to Pennsylvania's three poisonous snakes. This heat-sensitive organ is missing from the nonpoisonous species in Pennsylvania (See Figure VI-14).

The scales on the copperhead are only weakly keeled. The anal plate is single and the scales on the underside of the tail are in single rows for most of its length, not divided into two rows as they are on the nonpoisonous snakes in Pennsylvania.

Range. The copperhead inhabits the lower two-thirds of the state. Its range generally follows the southern limits of huge glaciers that eons ago scraped and ground their way into the northern hemisphere. Its range extends somewhat southwesterly through the Carolinas into Georgia, Tennessee, Kentucky and southern Illinois.



Habitat. The northern copperhead likes wooded hillsides, especially those that feature rocky outcrops standing guard above a stream or swampy area. The copperhead is attracted to stone walls, piles of rock and other similar debris and is a frequent visitor around farms and abandoned lumber operations. It is fond of curling up in sawdust or rotting logs, and it likes the protection offered by large, flat stones, especially those located near water.

The copperhead, like so many other reptiles and amphibians, enjoys a day in the sun and often basks on a favorite rock, especially on a warm day in the spring or fall. During the hotter days of summer, the copperhead seeks relief from the piercing rays of the sun and becomes more nocturnal in its habits.

Reproduction. Recent studies indicate that the mating period for the copperhead can be anytime from spring to autumn, with the peak time probably mid-summer. One to 14 live young are born in August to early October. Seven to 10 inches long at birth, the young copperhead matures in two to three years. The young snakes learn early in life to fend for themselves by using the tip of their tail as a built-in lure. Usually bright yellow, the tail tip is held upright. Wriggled enticingly, it attracts curious prey to a hungry youngster. By the time it is one hour old, the juvenile copperhead has venom strong enough to paralyze a mouse.

Food. A young copperhead's first food is normally insects, but it soon seeks rodents, the main staple of its diet. Birds, cicadas when available, large caterpillars and an occasional frog or lizard help diversify the menu.



Timber Rattlesnake

Crotalus horridus

Candidate Species

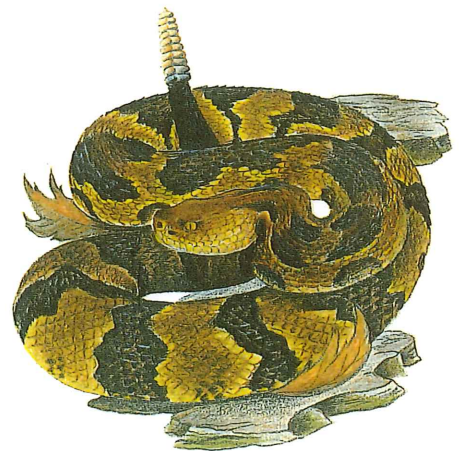
General characteristics. Though not the largest snake found in Pennsylvania, the timber rattlesnake has the distinction of being the largest of our three poisonous species. It may reach adult sizes of 36 to 54 inches. It is sometimes called the “banded” rattlesnake or “velvet-tail” rattler.

Like the copperhead and other snakes, the timber rattlesnake would just as soon be left alone. It is not an aggressive creature. The timber rattler is prone to lie quietly or crawl away to safety if given the chance.

The timber rattler stands its ground (like many other animals) if it feels threatened and unable to escape. When striking, venom may be released from glands located in the head and injected into the victim through modified front teeth referred to as fangs. It should be noted that a defensive strike does not always include a release of venom. Venom primarily is used to disable prey.

Contrary to popular belief, the timber rattlesnake does not always sound its familiar alarm before striking. In fact, when striking because of fear or the need to defend itself, more often than not the snake strikes without an audible warning. The “rattle,” from which this snake obviously gets its name, is an organ of loosely attached, hollow horny segments fastened to the tail. Rapidly vibrating the tail causes these button-like segments to strike one another, producing an unmistakable buzzing sound. The rattle may grow by two to four segments annually, because new segments are added each time the skin is shed. Thus, the number of segments on the rattle, or “cloche,” as it is called, cannot be used to determine the age of the snake. However, the larger the snake, the louder the buzzing.

Identification. Timber rattlesnakes are found in two different color phases, black and the less common yellow phase. Each phase is permanent. Coloration does not change



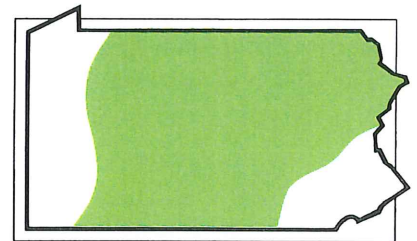


from one phase to the other on any individual snake. On a yellow specimen, black or dark-brown crossbands contrast against a yellow background that might range from dull to a deep lemon. In some cases, the “yellow” tends to be brownish or grayish, but always lighter than the black phase. The crossbands are often V-shaped and tend to break up toward the rear of the body to form a row of dark spots down the back and along each side.

The more common black phase timber rattlers have a heavy stippling or flecking of very dark browns or blacks that covers most of the lighter or yellowish pigments. Completely black specimens are not all that rare in some areas.

The unmarked head of the timber rattlesnake is covered with numerous small, keeled scales. The facial pit is located as usual between the eye and nostril, confirming the timber rattlesnake to be one of the pit vipers (See Figure VI-14). The pupil of the eye is elliptical, not rounded as it is on Pennsylvania’s nonpoisonous snakes (See Figure VI-14). The tail is black regardless of the color phase of the body. Unlike our nonpoisonous species, which have two rows of scales on the underside of the tail, the poisonous snakes have one row. The timber rattlesnake is no exception to this rule.

Range. The range of this reptile begins in the north in New Hampshire, extending southward to Georgia. It appears from Illinois to Arkansas and northeast Texas. The timber rattlesnake is found in the central two-thirds of Pennsylvania. Its range does not extend into the counties bordering Ohio or into the extreme southeast. The range follows roughly the major mountain ranges that move diagonally across the state.



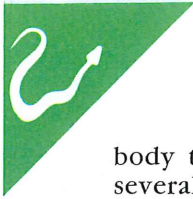
Habitat. This snake is at home in timber-covered terrain, especially that of second-growth woodland where an abundance of rodents may be found. It likes wooded hillsides accented with rock outcrops where ledges of stone might provide opportunities for basking (See Figure VI-20). When winter sets in, fissures in these places provide passage to deep dens for hibernation. Slopes with a southern exposure are preferred.

The timber rattlesnake seeks winter protection below the frost line, preferably in dens that maintain a temperature of around 50 degrees. In the spring, as daytime temperatures approach 60 degrees, the rattlers begin to emerge to bask near the den site. Although later they may travel some distance from the den to take up residence in more open areas, shaded areas will always be nearby to provide protection as summer temperatures turn hot. Each fall the timber rattlesnake returns to its original den, even though it may have wandered several miles during the summer months.



Basking in the warm rays of the sun is an important and necessary function. By causing the

Figure VI-20
Warm temperatures entice this timber rattlesnake from its den.

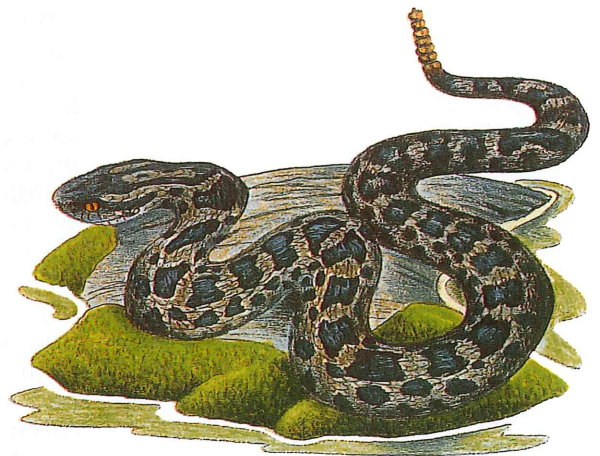


body temperature to increase, the snake ensures proper functioning of several organs while ridding the body of disease and parasites. The female's basking also allows for full, proper development of eggs and embryos.

Reproduction. Breeding takes place in July, August or September with the female giving birth to live young in August or September of the following year. Five to 17 young are born, reaching 10 to 13 inches in length. The brood may include individuals of both yellow and black color phases.

The female matures in four to five years and breeds for the first time at five or six years of age. The female breeds only every two to three years and thus may bear a litter perhaps 10 to 15 times in her lifespan of 30 to 50 years. The intervening years are needed to store sufficient body fat to sustain her during the second summer the progeny are developing. It is believed she does not feed during the summer of her year-long gestation period. While carrying her young, she consumes only rainfall, gathering the precious liquid from small deposits caught by leaves or depressions in rocks. Decreasing populations have made it a candidate species.

Food. Mice and other rodents make up the majority of the food eaten by the timber rattlesnake. Squirrels, rabbits, chipmunks and even small birds add variety to the diet, as do frogs or lizards on rare occasions. The prey is captured as it wanders into striking range of the hunter, coiled and ready and usually hidden near a log or other object. Venom injected into the prey becomes an effective tool in satisfying the need for food.



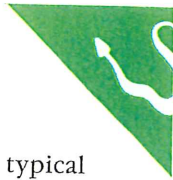
Eastern Massasauga

Sistrurus catenatus catenatus

Endangered Species

General characteristics. The eastern massasauga is a rattlesnake. It is the smallest of Pennsylvania's three poisonous snakes, but the one with the biggest problem. Reflecting concern for its dwindling numbers, this reptile has been placed on Pennsylvania's List of Endangered Species. It is illegal to possess, kill, sell or offer for sale this or any other animal on the endangered list.

The biggest problem facing this small rattlesnake is loss of habitat. A resident of swampy areas, much of its habitat has been drained or dried up. In some cases, new or widened highways encroached into its wet domain and with each new lane of traffic, acres of vital habitat were lost. Its common name, *massasauga*, is said to be derived from a Chippewa

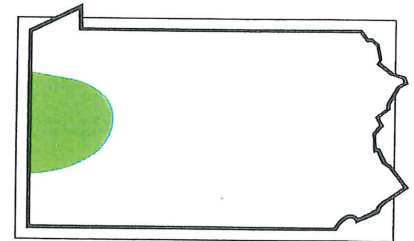


Indian word meaning *great river mouth*. It alludes to what was typical Chippewa country, which often included swampland surrounding the mouths of rivers.

Identification. Reflecting its preferred habitat, the massasauga rattlesnake sometimes is referred to as the “swamp” rattler. It does not grow much larger than 20 to 30 inches.

The massasauga is brownish gray to almost black on its back and sides with a row of rounded, dark-brown or black blotches running down the middle of the back. Usually three rows of smaller and lighter blotches or spots stretch along each side. A dark bar, bordered with a lighter color, extends from the eye to the rear of the jaw, and several dark bars start at the top of the head and flow onto the neck. The facial pit is in its usual position between the eye and nostril. The belly is black with scattered white or yellowish markings. Nine plates (actually large scales) cover the crown of the head, compared to the timber rattlesnake’s numerous small scales. The tail is stocky or stout, ending in a moderately developed rattle. The underside of the tail has a single row of scales, similar to the other poisonous snakes in Pennsylvania. The anal plate is single; the scales over the back are keeled.

Range. In Pennsylvania, the eastern massasauga is found in portions of only five or six counties in the westcentral section of the state. It extends into Ohio and as far as Illinois and Iowa. It runs northward to Wisconsin and Michigan.



Habitat. It shows a distinct preference for marshy areas with swampland, flood plains and other wet areas adjacent to drier old-field uplands providing favorite haunts. Even so, there are occasions when the massasauga may stray from these areas and be found in dry woodlands.

Typical of most cold-blooded animals, the massasauga suns itself on mild days, allowing the warming rays of the sun to raise the body temperature to levels beneficial to its functioning. During the hottest part of the summer, the massasauga becomes crepuscular, taking advantage of the cooler twilight hours to roam and feed.

Reproduction. The massasauga breeds primarily during July and August, giving birth to its young between July and early September. A typical litter contains two to nearly 20 youngsters measuring six to nine inches long. At birth, these young rattlers are well-patterned, although a bit paler than the adults. The juveniles have an unmistakable yellowish tail tip.

Food. As might be expected, given its favorite habitat, frogs and other amphibians top the massasauga’s menu. Although amphibians may be preferred, lizards, small rodents and small birds are taken from time to time as well. This rattler uses much the same method as that used by the timber rattlesnake in capturing its prey. Venom is injected to immobilize the prey before it is swallowed. The only difference is that the venom produced by the massasauga is not quite as toxic as the venom of its larger cousin.

