



Timber rattlesnakes are extremely well camouflaged and difficult to spot in the forest vegetation.

AVOIDING & TREATING SNAKEBITES

A snakebite from a chance encounter between timber rattlesnakes and people on State Forest land is rare. The snake is generally secretive and docile and normally chooses to move away, hide, or issue a warning in order to avoid a confrontation with an intruder.

When cornered, surprised, or touched, the possibility of a rattlesnake striking in defense (sometimes without warning) becomes more likely.

Maintaining a 3-foot buffer around even the largest timber rattlesnakes is sufficient to avoid an effective strike.

Due to the complexity of snake venom and the variables involved in bites and victims, reactions to timber rattlesnake bites vary accordingly: from a “dry bite” (no venom injected in 30% of cases) to a life-threatening situation.

In the rare event of a snakebite:

- Remain calm and reassure the patient. There have been no deaths in Pennsylvania attributable to timber rattlesnake bites for at least the past 25 years.
- If possible, immobilize the affected area and transport the patient immediately to the nearest medical facility.
- Do not attempt first aid measures such as incision, suction, tourniquets, alcohol, or drugs.



Pennsylvania Bureau of Forestry

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Pennsylvania Bureau of Forestry RATTLESNAKES

in Pennsylvania State Forests



What you should know about timber rattlesnakes and the possibility of encounters

Commonwealth of Pennsylvania
Edward G. Rendell, Governor
Department of Conservation and Natural
Resources
Michael DiBerardinis, Secretary
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Pennsylvania’s State Forests Timber Rattlesnake Habitat

Pennsylvania Department of Conservation and Natural Resources (DCNR) Bureau of Forestry’s 2.1 million acres of State Forest lands provide the largest blocks of timber rattlesnake range remaining in the Northeastern states. These forests are managed according to the principles of ecosystem management, with the realization that all the different species must be present to sustain a healthy, functioning forest.

The presence of timber rattlesnakes is one of the components that gives a wild flavor to State Forest land. The largest populations of timber rattlesnakes occur in the remote, heavily forested regions of Pennsylvania.

Worldwide, the importance of venomous snakes is being recognized not only for their role as both predator and prey but for their medical value. Recent promising breakthroughs in treatments for hypertension, heart attack, and cancer are attributed to snake venom research.

Pennsylvania experienced a major decline in its timber rattlesnake population during recent decades attributed mainly to unrestricted commercial and sport hunting, den raiding, and land development. This decline prompted the Pennsylvania Fish & Boat Commission (charged with fish, reptile, and amphibian management) to implement regulations to check the uncontrolled exploitation of the species. DCNR urges all State Forest users including recreational visitors, camp lessees, logging, mineral, and rights-of-way contractors, fuelwood cutters, and passers-through to exhibit a tolerance for the timber rattlesnake and abide by all applicable regulations:

- Persons who hunt, capture, kill, or possess timber rattlesnakes must have an Individual Timber Rattlesnake Hunter and Rattlesnake Possession Permit.
- Damage to denning areas is prohibited.
- Selling timber rattlesnakes or parts thereof is prohibited.
- Timber rattlesnakes are protected under specific regulations by the Pennsylvania Fish & Boat Commission. For more information, consult the most recent “Pennsylvania Summary of Fishing Regulations and Laws” (supplied with fishing licenses) or direct questions to: Nongame and Endangered Species Unit, Pennsylvania Fish & Boat Commission, 450 Robinson Lane, Bellefonte, PA 16823 <www.fish.state.pa.us>

TIMBER RATTLESNAKE LIFE HISTORY

SCIENTIFIC NAME: *Crotalus horridus*

COLOR PHASES: yellow (light phase), black (dark phase)

MATING SEASON: primarily July and August

BIRTHING: litter of 8-12 in late August through mid-September

MATURITY: 5-7 years

LONGEVITY: 30+ years

MORTALITY RATE: 10-12% annual mortality in adults, possibly higher for immature snakes



The head of a yellow phase timber rattlesnake showing a pit for heat sensing. These pits help the snake locate its prey.

Prompted by favorable indicators of ground and air temperatures, Pennsylvania timber rattlesnakes emerge from their six-month long hibernation during late April or early May. The denning areas are usually associated with rock outcroppings having sunny exposures in largely forested areas. There, when the required components of sunlight, fissures, and surface rocks are available, the snakes, upon emergence, can safely bask in close proximity to their frost-free dens.

Basking is necessary to ward off parasites and infection and to restore vital functions upon emergence. It also facilitates shedding (1-3 sheds per season) and is crucial to gestating females. Emergence



The distinctive tail of the timber rattlesnake is sometimes used as a warning to avoid potential conflicts. The snake rapidly vibrates the tail, giving off a “buzz.”

basking may last from several days to several weeks, depending upon the weather and individual needs. Then the rattlesnakes begin dispersing into the surrounding forest where they forage—some will mate—during the course of a summer.

A timber rattlesnake's pattern of movement through the summer range is loop-like, starting at the den with the spring emergence, reaching the apex in July at a mile or so out, and returning to the den in the fall. Along the way, the rattlesnake stops periodically to forage throughout a small area for several days. An adult rattlesnake will typically travel along a similar pathway and through the same general area during each active season of its life.

Foraging timber rattlesnakes are primarily sit and wait predators, stationing along rodent runways to ambush mice, voles, and other small mammals. In an ambush posture typical of Pennsylvania rattlers, the snake positions its head on the surface of a downed snag or fallen branch, often used as runways by rodents.

The strike, injection of venom, and release of prey seem instantaneous, serving to protect the snake from a retaliatory bite. The stricken prey may hobble out of sight, but shortly succumbs; the rattlesnakes easily follows the scent trail to find its meal, already partially digested by the venom.

The frequency of encounters between humans and timber rattlesnakes escalates in July and August when the male snakes actively seek mates. Mature males may travel far and wide (up to 6 miles) in an effort to intersect scent trails of receptive females. This activity, coinciding with Pennsylvania's hot and dry season, is the basis for the misconception that the rattlesnakes are “coming down for water.”

During June, pregnant females (having mated the previous summer) remain at a basking area near their home den through the summer, where optimal thermoregulation conditions help to ensure embryonic development. Around the end of August, pregnant females give birth to live, fully-developed young.

Within about 10 days of birth, the newborn snakes shed their skins and disperse for several weeks of foraging. Although venom-equipped, they are vulnerable to a wide range of predators. Survivors follow the adults' scent trails to the denning sites by mid-October. Rattlesnakes usually return to the same den in successive years throughout their entire life.

With its folding-fang venom delivery system, heat-sensing pit organs, and keratin warning device (rattle), the rattlesnake is the most specialized reptile in the world. It's the subject of many a campfire story in the hills of Penn's Woods. With your cooperation, timber rattlesnakes will remain a valuable component of Pennsylvania's State Forest lands.

DEALING WITH NUISANCE RATTLESNAKES

Rattlesnakes that take up temporary residence in high use areas such as in or near cottages, residences, and parks should be removed. It is best to contact the local Conservation Officer of the Pennsylvania Fish & Boat Commission to move such snakes.

According to a recent scientific study, displacing a timber rattlesnake 110 yards from its suspected direction of travel is a reasonable solution, considering the well-being of both the snake and the person. The study's subject snakes were able to get their bearings and continue on, not returning to the incident sites. Displacing rattlesnakes long distances has been shown to drastically affect behavior and jeopardize survival.

SAFETY PRECAUTIONS

In known timber rattlesnake territory, during the active season of April to October, common-sense precautions will minimize serious encounters with timber rattlesnakes.

- **When walking through unmowed grass and brushy areas, wear loose-fitting, full-length pants and high-topped (8”) leather boots. Walk at a normal pace so you will not surprise a snake.**
- **Look for rattlesnakes before you sit down, reach into, over, or under bushes, logs or rocks.**
- **Be aware that rattlesnakes are attracted to certain structures to hunt for mice and to bask such as a pile of rocks, logs, or boards. They may also be found around a shed or equipment.**
- **Never attempt to pick up a rattlesnake, even one that appears to be dead.**