



WILDLIFE

Coping With Snakes

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Quick Facts...

Most Colorado snakes are nonvenomous (nonpoisonous), harmless and beneficial to people.

Nonvenomous and venomous species can be easily distinguished from each other.

Discourage snakes from entering buildings by sealing all holes in foundations. Reduce cover and food supplies to discourage them from living in backyards.

Quickly seek medical attention for venomous snakebite victims. The most useful snakebite first aid kit is car keys and coins for calling the hospital.

Art and mythology show us that humans have interacted with snakes for thousands of years. In some cultures, snakes were a symbol of fertility and in others, they were servants of the dark world. People's reactions to snakes today are still as varied.

Although people have coped with snakes for centuries, ancestors of snakes appeared long before our human predecessors. Their roots date back to the Triassic period, approximately 190 million years ago (Hammerson 1982).

Snakes possess the following reptilian characteristics: they have scales; are ectothermic (they rely on external sources to control their body temperature); and, like most reptiles, lay eggs. Rattlesnakes, however, give birth in the autumn to five to 12 live young, each 10 inches or more in length (Klauber 1982). Contrary to its reputation of being slimy, snake skin is actually smooth and dry and will often be shed more than once each year to accommodate the growing body.

Because snakes are ectothermic, they avoid temperature extremes and prefer to hunt in mild conditions. They use their forked tongues and heat-sensitive facial pits to determine what exists in their environment and to acquire prey. It is important to remember that a dead rattlesnake, even if it has been decapitated, can still bite and inject venom (poison). This can occur because the snake's heat sensory pits are active until rigor mortis is complete. Therefore, placing a warm object, such as a hand, near the snake's mouth will trigger a biting response.

Most snakes prey predominantly on rodents, although some also eat bird eggs, nestlings, lizards, and insects. They in turn are prey for eagles, hawks, and humans.

Of the 25 species of snakes in Colorado, the western rattlesnake (*Crotalus viridis*) and the massasauga (*Sistrurus catenatus*) are the only venomous species. The western rattlesnake appears in most habitats throughout the state. The massasauga, however, is limited to the southeastern grasslands.

There are six basic ways to distinguish these two venomous snakes from their nonvenomous relatives:

1. Rattles at the end of the tail.
2. Fangs in addition to their rows of teeth.
3. Facial pits between the nostrils and eyes.
4. Vertical and elliptical pupils that may look like thin lines in bright light. (Nonvenomous snakes have round pupils.)
5. A single row of scales between the vent and the tip of the tail. (Nonvenomous snakes have two rows of scales.)
6. Broad triangular head and narrow neck.

Additional information on identification, distribution, and biology of snakes is contained in a 484-page, full-color book by Geoffrey A. Hammerson titled Amphibians and Reptiles of Colorado (2nd Edition). The book can be obtained from the Colorado Division of Wildlife, Attn: Colorado Outdoors, 6060 Broadway, Denver, Colorado, 80216 for \$29.95 (call for current postal charges). Make checks payable to Colorado Division of Wildlife. For faster delivery, call 303-297-1192 to order by phone using a credit card.

Problems

Snakes need cool, damp shelters and may take residence under and possibly inside buildings. This behavior may become more noticeable in the fall, when snakes seek areas to hibernate for the winter. Nonvenomous snakes do not pose any major problems except for possibly frightening people and being a nuisance. Venomous snakes, however, may cause a health hazard by biting people, pets, and livestock, so steps should be taken to exclude, and if necessary, remove them.

The Colorado Herpetological Society has a Web site, (<http://coloherp.org/geo/>), that can be used to identify Colorado snakes.

Prevention

There are four main ways to discourage snakes from moving into a yard or home:

1. Eliminate cool, damp areas where snakes hide. Remove brush and rock piles, keep shrubbery away from foundations, and cut tall grass.
2. Control insect and rodent populations (the snakes' primary food source) to force them to seek areas with a larger food supply. Put grains in tightly sealed containers and clean up residual pet food and debris.
3. In rattlesnake-infested areas, construct a snakeproof fence around the backyard or play area. Use 36-inch high galvanized hardware cloth with a 1/4-inch mesh and bury it 6 inches deep, slanted outward at a 30-degree angle. Make certain the gate fits tightly and swings into the play area. Keep all vegetation away from the fence to prevent snakes from climbing over it.
4. To prevent snakes from entering basements and crawl spaces, seal all openings 1/4 inch or larger with mortar, caulking compound or 1/8-inch hardware cloth. Check for holes or cracks around doors, windows, water pipes, electrical lines, etc.

Repellents

Dr. T's Snake-A-Way (7 percent naphthalene and 28 percent sulfur), a commercial snake repellent, was not successful in repelling gopher snakes (Marsh 1993), western rattlesnakes (Marsh 1993), brown tree snakes (McCoid et al. 1993), and plains garter snakes (Ferraro 1995). Naphthalene and sulfur used individually were also not effective in repelling plains garter snakes (Ferraro 1995).

Several potential home remedies were evaluated to determine if they would repel black rat snakes. Treatments tested included gourd vines, moth balls, sulfur, cedar oil, a tacky bird repellent, lime, cayenne pepper spray, sisal rope, coal tar and creosote, liquid smoke, artificial skunk scent, and musk from a king snake (they eat other snakes) (San Julian and Woodward 1985). None of these remedies repelled black rat snakes.

Currently, there is not enough conclusive data to recommend these repellents for snakes.

Removal

Snakes may seek shelter in basements, sheds, or crawl spaces in cold weather. If it becomes necessary to remove a snake, several humane methods are available.

- A good way to remove a nonvenomous snake is to sweep it into a large bucket with a broom and then release it outdoors.
- Damp burlap sacks covered with dry sacks to retain moisture are attractive denning sites when placed along a wall in a basement or crawl space. Check the bags daily and remove snakes with a shovel.

To relocate any snake off your property you need to first contact the Colorado Division of Wildlife at 303-297-1192.

First Aid for Snake Bites

Recommended By the Rocky Mountain Poison and Drug Center:

1. Remain calm so as not to increase circulation and thus the spread of the venom.
2. Immediately remove anything from the body that may cause increased swelling below the bite area (i.e., rings, watch, shoes, tight clothing, etc.)
3. If possible, wash the wound with soap and water. If available, a Sawyer Extractor Pump may be used to remove some of the venom. Be familiar with the procedure and instructions before you need to use it.
4. Immobilize the bite area, keeping it in a neutral to below the heart position.
5. Get to the hospital immediately. Do not wait for the pain to get severe. The use of approved antivenom is the most effective treatment for envenomation. If possible, have another person drive, and call ahead to the hospital and the poison center.

What **NOT** To Do:

- Do not use a tourniquet.
- Do not make an incision at the bite site.
- Do not suck out the venom with your mouth as this may increase the risk of infection.
- Do not pack the limb in ice.

To learn more about treatment methods or if you have questions about first aid procedures for snake bites, call the Rocky Mountain Poison & Drug Center at the following numbers:
Colorado Toll free: (800) 332-3073;
Denver Metro: (303) 739-1123;
Hearing Impaired TTY: (303) 739-1127;
National Toll free Number: (800) 222-1222.

- Glue boards or glue trays are effective to remove snakes from buildings (Knight 1986). They are made of heavy cardboard or plastic rectangles coated with a tacky substance (similar to fly paper) that traps snakes that move across them. Fasten about 144 square inches of glue boards to a 1/4 x 24 x 18-inch piece of plywood and place it along the wall where snakes are likely to cross. For humane reasons, check glue boards at least daily and do not leave snakes on them any longer than necessary. To harmlessly release the snake, pour vegetable oil over it to break down the glue. Place glue boards where pets or other nontarget species will not get caught. If you are unable to find glue boards locally, visit www.coopext.colostate.edu/wildlife and look under “vendors”.
- Use drift fence and funnel traps to capture rattlesnakes at dens or open areas (Figure 1). Roll a 3 x 4-foot piece of 1/4-inch hardware cloth into a tube about 1 foot in diameter and 4 feet long with one end closed and the open end, with a funnel leading into it, facing the den. The slope of the funnel makes it difficult for snakes to crawl out. If a box is placed inside the trap, snakes usually will hide in it instead of trying to find a way out. If you need to trap in an area away from a den, a drift fence on both sides of the funnel will channel snakes into the trap. The fences should be of 1/4-inch mesh and extend vertically for about 2 feet. Because nontarget animals are vulnerable to this trap, use it primarily at den sites.

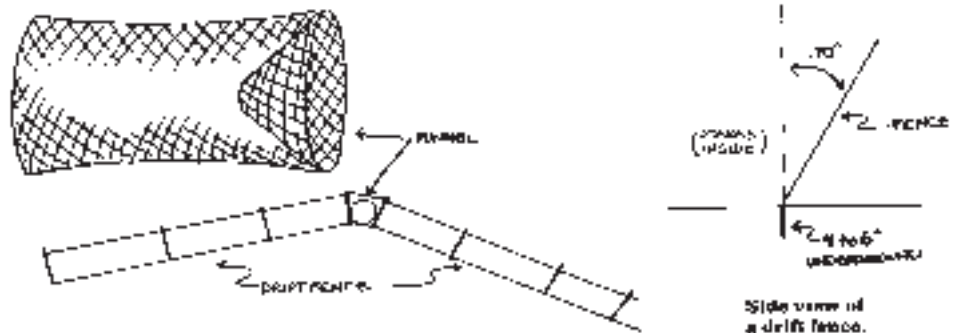


Figure 1: A funnel trap with a drift fence can be used to capture rattlesnakes. Adapted from Byford (1983).

Be Prepared

The best safety measure against venomous snakes is to be prepared for a possible encounter with them, especially if hiking in their habitat. Be able to recognize the venomous snakes in the area.

In areas inhabited by rattlesnakes, wear long, loose pants and calf-high leather boots, or preferably snake guards. Rattlesnakes generally are nonaggressive toward people unless they are startled, cornered, or stepped upon. Alert them of your approach by sweeping grassy areas with a long stick before entering. Never jump over logs, turn over rocks, put your hands in rock crevices, or sit down without first carefully checking for snakes. Remember, rattlesnakes do not always shake their rattles before striking, so do not rely solely on your sense of hearing. If you are confronted with a rattlesnake, remain calm and still at first, then try to back away slowly and carefully.

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Web sites:

Colorado State University Cooperative Extension, www.coopext.colostate.edu/wildlife

Colorado Herpetological Society, <http://coloherp.org/geo/>

Rocky Mountain Poison and Drug Center, www.rmpdc.org

Bites

If you are bitten by a rattlesnake, remain as calm as possible. Venomous snakes do not always release venom when they bite. If venom is present, panic will only increase the heart rate which will cause the poison to circulate more quickly throughout your body. Do not try to kill the snake because it may lead to additional bites and delay your arrival at the hospital for professional treatment. There is antivenin available for use against all native pit vipers in the United States, so it is helpful but no longer imperative, to determine the species of rattlesnake.

According to the Rocky Mountain Poison & Drug Center, CroFab is the newest and preferred antivenom to use to neutralize rattlesnake venoms in North America. It is a sheep-derived antivenom (approved by the FDA in October 2000) that produces significantly less adverse reactions than its predecessor. For more information about CroFab see: www.rmpdc.org.

Immediately after being bitten, check the injured area. If it is a venomous snake bite, there may be one or two visible fang marks in addition to teeth marks. The common and fairly quick reactions to venom are swelling and pain in the bite area, followed by a black and blue discoloration of the tissue and possibly nausea. Painful swelling of lymph nodes in the groin or armpit usually occurs within one hour if the bite is on the leg or arm.

The most useful snakebite first aid kit consists of car keys and coins for calling the hospital and/or poison center.

Legal Status

According to the Colorado Division of Wildlife, it is legal to kill rattlesnakes when necessary to protect life or property, provided that the method used is in accordance with city and county ordinances. Call your local police and animal control departments for details. The most common method to kill a rattlesnake is clubbing or shooting. The midget-faced rattlesnake (a subspecies of the western rattlesnake), the massasauga, and all nonpoisonous snakes are classified as nongame wildlife and are protected by state law, except as noted above.

Effective snake control begins with prevention. Make your property an undesirable home for snakes and be prepared for possible encounters. Learn the distinguishing characteristics between venomous and nonvenomous snakes and which species reside in your location. For thousands of years snakes have been an important part of the ecological food chain and should be left alone to fill their niche unless they create a health hazard for people.

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