

## Wildlife Damage Management Series

# Venomous Snakes



USU Extension in cooperation with:

CNR—Quinney Professorship for Wildlife Conflict Management  
Jack H. Berryman Institute  
Utah Division of Wildlife Resources  
Utah Department of Agriculture and Food  
USDA/APHIS Animal Damage Control

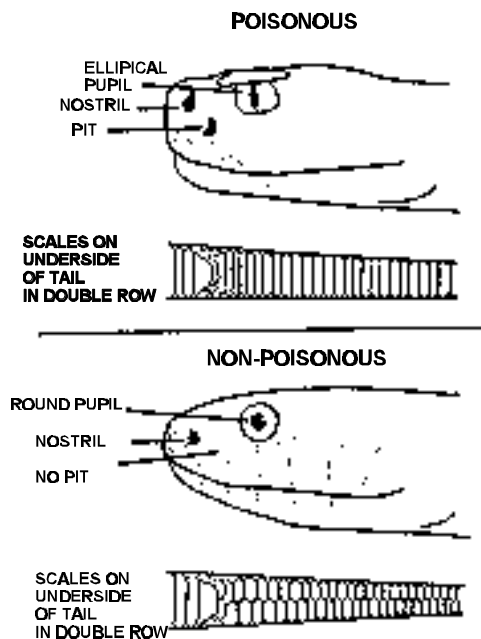
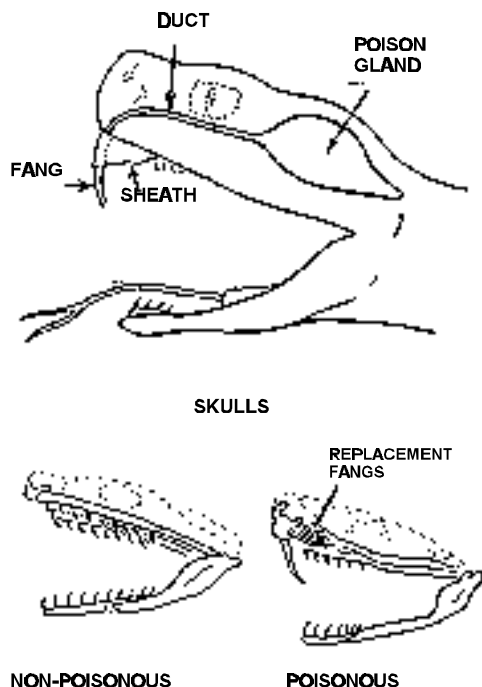
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Utah is home to 31 species of snakes. Of these, seven are venomous. The seven Utah venomous snakes are members of the Viperidae family and are commonly called pit vipers because of the pit located between their nostrils

and eyes. (See Figure 1.) These Utah venomous snake species include: the sidewinder (*Crotalus cerastes*), speckled rattlesnake (*C. mitchellii*), mojave rattlesnake (*C. scutulatus*), western rattlesnake (*C. viridis*), Hopi



**Figure 1. Poisonous snakes have vertically elliptical pupils (cat's eyes), facial pits between the nostril and eye. Non-poisonous snakes have round eye pupils and no facial pits between the nostril and eye.**

rattlesnake (*C.V. nuntius*), midget-faded rattlesnake (*C.V. concolor*), and the Great Basin rattlesnake (*C.V. lutosus*).

Since most snakes in Utah are non-venomous, most snake encounters are generally not dangerous. However, an encounter with a venomous snake can be very dangerous. Therefore it is important that a person knows how to identify the difference between venomous and non-venomous snakes. In any case, it is best to leave any snake encountered alone. Most snake bites occur when the victim tries to capture or kill the snake. Even dead snakes have been known to bite by reflex action.

There are three basic ways to determine the difference between poisonous and non-poisonous snakes (Figure 1). As a general rule, poisonous snakes have elliptical pupils and a single row of scales on the underside of their tail. Pit vipers (which are all poisonous) have a pit midway between their nostrils and their eyes. Non-poisonous snakes have round pupils and two rows of scales on the under side of their tail.

Most pit vipers found in Utah will have tails equipped with a series of rattles, hence the name rattlesnake. When these snakes are encountered or disturbed, the rapid vibration of their tails will make a characteristic rattling sound to warn the intruder of their presence. However, not all rattlesnakes will “rattle” when disturbed. For this reason when you are in areas where rattlesnakes are known to occur, you should pay close attention to where you walk, sit, and place your hands.

## BIOLOGY AND BEHAVIOR

Snakes are reptiles and are considered “cold blooded” animals, which means that they maintain body temperatures at approximately that of their environment. When environmental temperatures drop below 50 degrees F, snakes seek shelter in areas where the temperatures are maintained above freezing. Suitable shelters may include spaces under rocks or rock piles, in holes, below ground, in or under tree stumps, dense shrubs or trees, wood piles, debris, or many man-made structures. These locations can be used for temporary shelter or for winter hibernation. Some snakes will use the same sites annually to hibernate. Several hundred snakes may also occupy the same denning sites. Some snakes lay eggs (oviparous), while others give birth to live young (viviparous). All Utah rattlesnakes bear live young which are left to fend for themselves after birth.

All snakes shed their skin as they grow. A snake may shed its skin several times throughout the year. When shedding their skin, snakes will become temporarily blinded until the old skin splits at their head and they are able to crawl out of it.

Snakes have forked tongues which contain receptors similar to taste buds. They use their tongues to sample odors in the air. Snakes can also use their tongue to “sense” their way in the dark as well as locate prey. Pit vipers have an additional sensory mechanism, the pit located between their nose and nostrils can detect heat which helps them locate prey.

Snakes’ hinged jaws allow them to consume food that is larger than their body. Snakes will eat any live animal or eggs small enough to swallow. Common prey items of venomous snakes include insects, rodents, birds, eggs, and other snakes. Their prey is injected with venom to immobilize it, relocated after it dies, and then swallowed whole. The venom consists of enzymes that actually start to break down the food item before it is swallowed. Snakes store food as fat and can live off this fat reserve for extended periods of time.

Rattlesnakes have two large movable fangs in the front of their upper jaw. Their fangs are hollow and are used to deliver venom into their victims. When biting, the fangs move forward from their folded position of rest, puncturing the victims fur or skin, and the venom is injected.

As mentioned previously, rattlesnakes are often heard before they are seen. When alarmed they make a rattling sound by rapidly moving their tail. Volume of the rattle may vary due to the size of the snake. The rattle acts as a warning to let the intruder know that the snake is present. If you hear a rattlesnake “rattle,” stand still until you can locate where the sound is coming from. **DO NOT TRY TO JUMP OR RUN.** If you do this, you may end up within the snake’s biting range.

Rattlesnakes can be found throughout Utah in sagebrush, pinon-juniper woodlands, sand dunes, rocky hillsides, grasslands, and mountain forests. They occur at elevations that range from sea level to timberline.

## LEGAL STATUS

Snakes are classified as non-game animals and are protected by Utah state laws. A person cannot collect or possess a live wild snake without receiving a Certificate of Registration from the Utah Division of Wildlife Resources. With human or domestic pet and livestock safety concerns, a venomous snake may be killed without a certificate.

## CONTROL

### Identification of Damage

Venomous snakes living close to urban and rural areas can be very dangerous if they come in contact with

people, their pets, or livestock. Over 7,000 venomous snake bites of humans are reported every year in the United States. Of these, 9–15 are fatal. More than half of the reported snake bites were a result of someone trying to handle or kill the snake. It is always best to leave any areas where you encounter a venomous snake. This will greatly reduce your risk of being bitten.

### **Snake Bite**

Non-venomous snake bites are harmless. The only concern may be for potential infection. If bitten, clean and sterilize the wound much like you would a cut or abrasion. Bites from venomous snakes will almost instantly show signs of swelling and discoloration of the surrounding tissue. Other symptoms will include a tingling sensation, nausea, rapid pulse, loss of muscle coordination, and weakness. Also, bites from pit vipers (rattlesnakes) will show two characteristic fang marks (punctures) as well as other teeth marks.

**WHAT NOT TO DO.** When someone has been bitten by a venomous snake there are several things that should not be done:

- **Do not allow the person to engage in physical activity such as walking or running. Carry them if they need to be moved.**
- **Do not apply a tourniquet to the area above the wound.**
- **Do not apply a cold compress to the bite area.**
- **Do not cut into the bite.**
- **Do not give the victim stimulants or pain medications unless instructed by a medical physician.**
- **Do not give the victim anything by mouth.**
- **Do not raise the bite area above the level of the victim's heart.**
- **Do not try to suction the venom—doing so may cause more harm than good.**

**FIRST AID.** All venomous snake bites should be considered life-threatening. When someone has been bitten by a venomous snake, time is of the essence. If possible, call ahead to the emergency room so anti-venom can be ready when the victim arrives. Do the following:

1. **Keep the victim calm, restrict movement, and keep the affected area below heart level to reduce the flow of venom.**
2. **Wash the bite area with soap and water.**
3. **Remove any rings or constricting items; the affected area will swell.**
4. **Cover the bite with clean, moist dressing to reduce swelling and discomfort.**
5. **Monitor the vital signs (pulse, temperature, breathing, blood pressure) of the victim. If there are signs of shock, lay the victim flat and cover with a warm blanket.**
6. **Get medical help immediately.**
7. **Bring in the dead snake if this can be done without further risk of injury.**

### **Habitat**

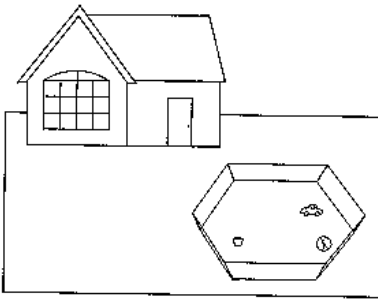
Probably the best method of control for snakes around Utah homes, farms, and ranches is to make the area unattractive to them. Snakes require food and shelter, if these elements are not present, snakes will not be attracted. Keep lawns cut, weeds and other vegetation thinned, and remove wood piles, rock piles, and other debris piles. Removing these and other potential snake or rodent hiding places will also help to reduce food supplies. If rodent populations (ground squirrels, rats, and mice), are high, a rodent reduction program can be considered. Contact your local Utah State University county extension office for assistance in planning and conducting these programs.

### **Exclusion**

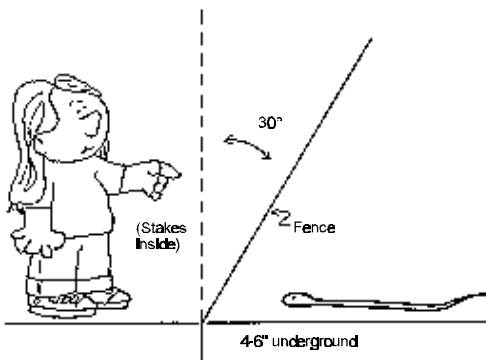
Snakes may enter buildings in search of food and shelter. The best way to exclude snakes from buildings is to close any entrances that they can use. To do this, check the foundation for cracks and openings larger than 1/4 inch, and fill these openings with caulk or concrete mortar. Metal screen or hardware cloth can also be used to close the openings. Pay special attention to areas where pipes or wires enter the building. Also, check around doors and windows for openings and repair any openings. Consider using screens around doors and windows to reduce the chance that snakes may enter through these areas. These modifications can also help to exclude rodents and insects.

In extreme cases, a homeowner may feel more at ease if a snake-proof fence is constructed around their property. This exclusion method is costly, yet it can be very

effective at keeping all snakes out of your yard (Figures 2 and 3).



**Figure 2. Though fairly expensive, a properly-constructed snake-proof fence can keep snakes from entering a given area.**



**Figure 3. This is the side view of a snake-proof fence to exclude snakes.**

### Toxicants and Repellents

There are no registered toxicants or repellents used for snake control.

### Trapping and Removal

If snakes continue to frequent an area, even though you have modified the habitat, it may be necessary to trap and remove them. Remember that snakes are protected in Utah and that they should not be killed without cause. **In the case of venomous snakes, this work should be done only by trained personnel from the Utah Division of Wildlife Resources or USDA Wildlife Services.** (See the addresses provided in this bulletin.)

### FOR FURTHER INFORMATION, CONTACT

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### Additional Reading

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