

## Rattlesnake Management and Control

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Prairie rattlesnakes are found statewide in Colorado below 8000 feet elevation. The *buzz tails* are a permanent and moving part of the landscape, absent only from intensively watered and farmed urban and agricultural lands. In native prairies, foothills, and sun-exposed sides of mountains up to 8000± feet, people should expect to encounter them and be on the lookout to avoid them. Where there are prairie dogs, there are also rattlesnakes. Sometimes the density of rattlesnakes in prairie dog colonies will reach over 100/acre, more than the prairie dogs.

Dwellings built in rattlesnake habitat encourage rather than discourage snakes for several reasons including providing more water, rodent and bird food sources, and places to rest and hide in ornamental plantings, landscaping rocks and timbers, wood and junk piles, and hibernation locations. It is advisable in developing a building site and landscaping to plan snakes *out* of the picture as completely as possible.

### The big picture of rattlesnake control

Large and natural developments of homes and landscaping results in a large shift in the utilization of the vegetation that fixes the sun's energy. Instead of large herbivores (horses, cows, sheep, goats, deer, and antelopes) eating the annual production of grass and seeds, rodents, rabbits, birds, and insects eat it. Populations of rodents, rabbits, and insects can become astronomical, thousands of animals per acre. What eats these critters? Coyotes, foxes, badgers, and raptors eat many but do not tolerate enough numbers of each other to seriously reduce the rodent numbers. Bull snakes eat pocket gophers, ground squirrels, and other rodents. Hog-nosed snakes specialize in toads and lizards. Rattlesnakes eat birds and all of the small rodents up to the size of rabbits and prairie dogs.

To reduce the rattlesnake population by indirect control means lowering the food sources, i.e., rodents and/or removing the vegetation producing the rodents' food and protection cover for the snakes. That involves mowing, baling, or burning on open space areas or cultivating.

Eliminating and keeping prairie dogs out is very important to keeping rattlesnake numbers down. Prairie dog burrows and colonies are grocery stores for buzz tails. Rattlesnakes eat prairie dogs and all of the other rodents and rabbits associated with them. Snakes live in burrows; they escape to them and hibernate in prairie dog holes.

From about October 20th to March 20th, rattlesnakes hibernate. They do this in two ways: (1) The adult males and roughly half of the females collect in prairie dog colonies or rock outcroppings in huge numbers, spending the winter together in these below-frostline caverns

(hibernaculums). On 72°± days, scores of them will crawl out and sun themselves around the hibernaculum entrance. Sometimes these locations can be found and many rattlesnakes collected and removed. We have located two of these hibernaculum areas roughly 3 and 4 miles northeast of Beebe Farms, and we have removed about 150 snakes during the last five years. (2) About ½ of the adult females and their recently born young hibernate by themselves away from the larger hibernaculums. These females will return to the large hibernaculums every other year.

It is important to not destroy the hibernaculum so the snakes continue to use them and they are available to find and collect the snakes. Destroy these and new ones are established and are difficult to locate.

Several species of snakes will hibernate together with the rattlesnakes. It is beneficial to keep these other snakes around.

Mice, voles, kangaroo rats, and ground squirrels can be safely controlled with one type of poison—zinc phosphide on wheat. When applied correctly, this poison is available only to those species, is quickly picked up and eaten, then is deactivated with the first snow or rain. The water in the rodents detoxifies the zinc phosphide as it kills them. The rodent carcasses are not toxic to raptors, scavengers, dogs, or cats.

With rodent population reduction and removal of denning populations of rattlesnakes, approximately 60 to 85 percent of the snakes can be eliminated.

Fumigation of prairie dog burrows kills rattlesnakes. Fumigating prairie dogs after October 20th will eliminate snakes and prairie dogs.

One potential control method we would like to try is reptile drift net traps during the fall and spring migrations of snakes to and from the hibernaculums. This technique is used by herpetologists to capture research snakes and appears to have applications for control and removal. The snakes that would be captured would be the important adult breeders and could considerably lower future rattlesnake encounters.

## **On the homeowners level, what can you do to solve your own rattlesnake problems?**

### **1. Habitat modification**

From the buildings outward 4 feet, install a black plastic skirt covered with ½ to 1-inch gravel 4 inches deep. Let no vegetation grow there so these 4 feet get the sun, without shade. Snakes will avoid it. It is great fire prevention as well.

Keep landscaping open and low, providing little shade or places to hide. Cut lower branches of shrubs and trees at least 18 inches up from the ground level. Keep watered lawns cut low—2 to 2.25 inches. Mow surrounding grasslands down to 4 inches and remove posts, wood piles, plastic, metal, and wood shelters for snakes.

Pick up cat/dog droppings and remnants of dog food and grains for horses and other livestock. Rodents are attracted to birdseed, dog and cat feces, etc., which then attracts rattlesnakes. Keep rodent bait boxes supplied with rodenticide baits in garages, barns, under porches, etc. to keep rodent populations low.

## **2. Exclusion**

Rattlesnakes can be fenced out with ¼-inch hail screen/rabbit hutch wire, solid metal fencing, and sturdy canvas. Place the bottom of the fencing in a trench 6 inches wide and 4 inches deep. Bend the bottom 6 inches of the wire flat into the trench and fill the trench and tamp the dirt. Place support posts 8 to 10 feet apart inside the fence (toward the house) so snakes have no leverage to climb against the post. Use 48 inches or higher fencing and bend a 45° overhang in the fencing away from the house so the snake cannot climb over it. This fence will also keep out bull snakes, rabbits, and skunks. Construct gates and openings so when they will be completely closed snakes cannot get through. It is important that the weeds and other vegetation are not allowed to grow around the fence or blow into the fence and remain.

Be sure that all doors, garage doors, pet doors, entry holes for utilities, window screens, etc. all seal up tightly to prohibit snake entry.

## **3. Repellents**

There are several snake repellents available, with limited effectiveness. Most are hydrocarbons, like mothballs. Snakes do not like hydrocarbons. Diesel fuel and gasoline mixture (3 parts diesel to 1 part gasoline) sprayed in a 3-foot wide band out around the mowed edge of the yard, is effective at keeping snakes away. Repeat every 2-3 weeks, depending on rain and heat. Place far enough away from the house so you don't have to smell it.

## **4. Toxicants**

There are no toxicants registered for snakes. Rattlesnakes eat only what they kill or find dead in a fresh condition. Old chlorinated hydrocarbon insecticides like Toxiphene were deadly to snakes. They are no longer available.

## **5. Fumigants**

Aluminum phosphide, magnesium phosphide, and gasoline are effective fumigants for snakes in burrows, culverts, in confined places. If a rattlesnake is spotted crawling into a hole, 1 cup of gasoline poured onto an old towel and stuffed into the hole is an effective fumigant.

## **6. Traps**

Rattlesnakes can be trapped at hibernaculums rather easily. Individual snakes on summer home territories are difficult to trap. Glue boards constructed to exclude rabbits, cats, dogs, and kids may be effective around houses. We are open to test traps if any homeowners would like to try it and pay the expenses.

## **7. Shooting and mechanically killing**

.22 rifles with birdshot or any shotgun are effective for killing rattlesnakes. Shoot to destroy the head. Then pick up and place the carcass in a bucket using a hoe, rake, or any 4-foot+ implement.

Discard or bury in a safe place. The rattlesnake's head stays alive and can bite for many minutes after it is severed. With 2-4 inches of neck, the head can turn and strike the hand holding it. So, keep the snake and/or head away from any contact with a hand or foot. Keep a firearm and shot cartridges handy so to be available when needed.

### **8. Dogs**

Some breeds of dogs are great rattlesnake alerts. Many dogs will bark when a snake is near. Some learn how to kill snakes. Vet bills to save snake-bit dogs are high so consider it carefully.

### **9. Turkeys and hogs**

Both eat rattlesnakes, but are not practical for Beebe Draw.

### **10. Notification, alerts, and identification**

Educate all adults and kids as to what rattlesnakes are and to avoid them unless they are capable of killing and removing them.

Always use flashlights to illuminate any trail when night walking. Wear footwear that will stop a snake strike when in snake habitat. Look where you walk, sit, roll, play, and place your hands before you contact a rattlesnake.

Rattlesnakes are not aggressive! They are often curious and may approach a person, but will move away when they sense the size of the person. They strike when they are threatened, touched, surprised, or teased. They have a range three-quarters the length of their bodies where they can successfully strike.

### **11. What to do if bitten?**

Dial 911! All area hospitals are prepared and have knowledgeable staff to deal with rattlesnake bites. The bites are life threatening so don't dither around. Get to a phone and get emergency help notified and ready for you immediately.

Don't cut and suck, apply ice, drink whiskey, apply tourniquets, none of that.

Some snakes do warning strikes where no venom is injected. Some drop a small dose; some unload the whole reservoir. You won't know how much you got. You have an hour normally before you can't function, depending on where you were struck and how much venom you got. Discuss your plan with the family. Have phone numbers ready.

## Snake identification: common snakes at Beebe Draw Farms, Pelican Lake



**Rattlesnake**

- Pit under each eye
- Triangular head
- Rattles
- Short and squatty stature



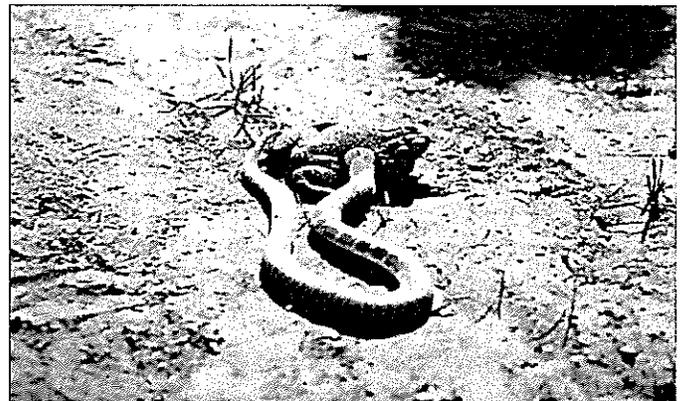
**Bull snake**

- No pits under eyes
- Long and slender
- Egg-shaped head
- No rattles



**Yellow-bellied racer**

- No diamond pattern on skin
- Green upper and yellow belly colors
- No rattles
- No pits under eyes
- Egg-shaped head, slender stature



**Hog-nosed snake**

- No pits under eyes
- No rattles
- Stature and shape similar to rattlesnakes
- Egg-shaped head with shovel-shaped nose
- Black colored belly

**Garter snake**

- Long and slender with side-striped coloring
- No pits, rattles or diamond pattern
- Slender and fast moving

