

# Coyotes

Prepared by the National Wildlife Control Training Program. <http://WildlifeControlTraining.com>

Research-based, certified wildlife control training programs to solve human – wildlife conflicts.

One source for training, animal handling and control methods, and wildlife species information.



Figure 1. Coyote (*Canis latrans*). Photo by Paul D. Curtis.

## Species Overview

### Conflicts

Coyotes can prey on waterfowl and livestock, and may attack pets, especially small dogs. In rare instances, they will attack people. Coyotes may carry rabies, so if a person or pet is bitten or scratched, consult your local health department. Coyotes habituated to food are more likely to come into contact with people and create problems.

### Legal Status

The legal status of coyotes (*Canis latrans*) varies depending on state and local laws. In South Carolina, there is no closed hunting season for coyotes on private lands with a valid hunting license. From the last day of February to July 1, if the landowner provides notification to the South Carolina Department of Natural Resources (SCDNR) at least 48 hours in advance, coyotes may be hunted at night with artificial lights and nightvision devices using any legal firearm, bow,

or crossbow. Contact your local SCDNR field office or [www.dnr.sc.gov](http://www.dnr.sc.gov) for additional rules and regulations regarding night hunting for coyotes.

It is lawful to trap coyotes from December 1 of each year to March 1 of the following year with a valid Commercial Fur Harvesters License.

Nuisance coyotes can also be taken year-round with a **Depredation Permit**. A depredation permit is not required when controlling nuisance furbearers within 100 yards of a property owner's residence. This permit is issued by the S.C. Department of Natural Resources. To obtain a permit call your local wildlife management office or law enforcement field office.

## Identification

The coyote (Figure 1) is a member of the dog family. Historically, coyotes were most common on the Great Plains, but their range has spread eastward since the 1920s.

## Physical Description

Coyotes resemble small German shepherd dogs with erect, pointed ears, a slender muzzle, and black-tipped, bushy tail. They may vary greatly in size, color, and appearance. Many coyotes are brown-gray with a light gray or cream-colored belly. Overall color varies greatly from nearly black, to red, to nearly white in some individuals and populations. Most individuals have dark guard hairs over the back and tail. Differences in coloration may be due partially to past hybridization with wolves. In western states, adult male coyotes weigh 25 to 45 pounds, and females 22 to 35 pounds. In eastern states, coyotes are larger, with males averaging 45 and females 30 pounds.

## Health and Safety Concerns

Coyotes typically are not considered a threat to humans, although several documented attacks have occurred, including a few that resulted in death. Children are at the greatest risk. Researchers have created an ascending scale that may be useful in evaluating the likelihood of attacks by coyotes in some situations. The risk of an attack increases as you progress from the first to the last item on the list.

1. Is there an increase in numbers of coyotes on streets and in yards at night?
2. Is there an increase in numbers of coyotes approaching adults or taking pets at night?
3. Are coyotes observed early in the morning and late in the afternoon on streets and in parks and yards?
4. Are coyotes observed chasing or taking pets during the daytime?
5. Do coyotes attack and take pets on leash or in proximity to their owners?
6. Do coyotes chase joggers, bicyclists, or other adults?
7. Are coyotes seen in and around play areas, school grounds, and parks during the day?
8. Do coyotes act aggressively toward adults during mid-day?

Coyotes suffer from various diseases, including distemper, hepatitis, parvovirus, heartworm, and demodectic and sarcoptic mange (caused by parasitic mites, Figure 2). Rabies and tularemia also occur, and may be transmitted to other animals and humans. Coyotes also harbor numerous parasites including mites, ticks, fleas, worms, and flukes. Rabid coyotes may be very aggressive, so if a person or pet is bitten or scratched, consult your local health department.



**Figure 2. Coyote with mange. Note the substantial loss of hair. Photo by John Consolini.**

## Economic Damage

Coyotes may kill family pets in suburban areas. A wildlife control operator may need to be hired to remove problem animals. The expense may be borne by individual landowners, or the community. In addition, coyotes may kill sheep and poultry on small farms.

## General Biology, Reproduction, and Behavior

### Reproduction

Coyotes become sexually mature in about 12 months. They usually breed between January and March and produce one litter per year. Gestation lasts about 63 days. Females sometimes breed during the winter following their birth, particularly if food is plentiful. Average litter size is 5 to 7 pups, although a litter of 13 has been reported. Pups frequently are moved between multiple dens if the family group is disturbed.

On rare occasions, more than one litter may occupy a single den, which may be from two females that are mated to a single male. Adult male and female coyotes bring food to their young for several weeks.

Pups begin emerging from the den by 3 weeks of age, and within 2 months, will follow adults to hunt or feed on carrion. Pups normally are weaned by 6 weeks of age. The adults and pups usually remain together until early winter, when pups become independent. Occasionally, pups are found in groups until breeding begins. Pups

may disperse 50 miles or more from their natal home ranges.

### Nesting/Denning Cover

Coyotes bed in sheltered areas, but may seek shelter underground during severe weather or when closely pursued. Dens usually are used for raising young. Coyotes often will dig or enlarge holes dug by smaller animals. Dens vary from 3 to 50 feet long and may have several entrances. Dens usually are found in protected, concealed areas (e.g., steep banks, crevices in rocks, sinkholes, and underbrush), typically less than a mile from water.

### Behavior

Coyotes bear young in the spring and raise them through the summer, a process that demands an increase in food for both the mother and young. The peak in reported coyote complaints often occurs in mid-summer. Conflicts may also increase during late fall or winter, when young coyotes disperse from their home ranges and establish new territories.

Coyotes are most active at night and in early morning during hot summer weather. Daytime activity is more likely during the mating and breeding seasons, during periods of low human activity, and cool weather. Coyotes commonly hunt alone or in pairs. Extensive travel is common during hunting forays. If food is plentiful, coyotes will hunt in the same area regularly. They occasionally bury (cache) remains of food for consumption at another time.

Coyotes are adaptable, and can do well in urban areas. Recent research has demonstrated that coyotes are compensatory breeders, meaning that they increase reproduction and immigration in response to human-induced killing of coyotes. Mortality is highest during the first year of life, and few coyotes survive for more than 5 years in the wild.

### Habitat

Coyotes exist in virtually every type of habitat in North America. Coyotes live in deserts, swamps, tundra, grasslands, brush, and dense forests. They may live at altitudes below sea level, on mountains, and all altitudes in between. Coyotes are abundant near urban and suburban areas such as Los Angeles, Pasadena, Phoenix, Denver, New York City, and Chicago.

### Food Habits

Coyotes are opportunistic feeders that hunt the most abundant prey species in their territory. Common food items include carrion, rodents, ungulates, insects, livestock, and poultry. Coyotes are omnivores, but eat mostly meat during winter and spring. During late summer and fall, more than half of their diet may consist of plant material. Coyotes readily eat fruits such as watermelons (Figure 3), persimmons, and berries. Coyotes may exploit food associated with humans, including garbage and pet food.



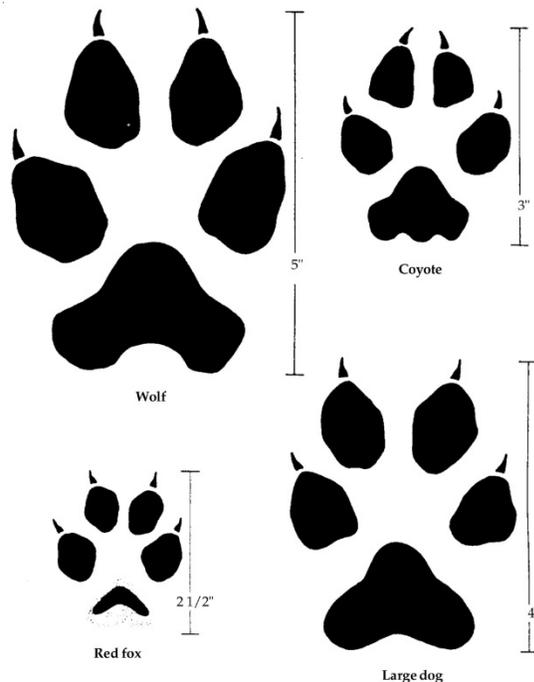
**Figure 3. Coyotes eat watermelon. Photo by the University of Nebraska-Lincoln (UNL).**

### Voice, Sounds, Tracks, and Signs

Coyotes are very sociable and use vocalizations to communicate. Coyotes mostly vocalize with a bark or a flat howl, both of which have many variations. Other sounds include a yip, warble, laugh, and irregular howl. Two coyotes that are howling together can give the impression of many more, which may lead to a skewed estimate of the size of the population in a given

area. Coyotes in urban areas do not always vocalize.

Tracks of coyotes can be difficult to distinguish from those of a domestic dog (Figure 4). Coyote tracks, however, tend to be narrower and the nails point toward the middle of the track. In contrast, the toes and nails in tracks of domestic dogs tend to splay outward.



**Figure 4. Footprints of canine predators. Image by Prevention and Control of Wildlife Damage (PCWD).**

## Damage Identification

### Damage to Landscapes

Coyotes are not known to cause landscape damage.

### Damage to Crops and Livestock

Coyotes may damage watermelons. They also will eat fallen and rotting fruit, and may bite plastic tubing for maple sap collection or irrigation lines.

Livestock predation by coyotes is generally more severe during spring and summer, when

coyotes are rearing young. While coyotes frequently are blamed for losses of domestic animals, they often will scavenge animals that were killed by other means. The observation of droppings and tracks of coyotes near a carcass is not sufficient to prove predation by coyotes. Once a coyote has killed livestock, it probably will continue to do so if given the opportunity.

### Damage to Structures

Coyotes are not known to damage structures.

### Damage Prevention and Control Methods

The focus of management should be on preventing damage, and targeting individual coyotes that cause conflicts. It is neither necessary nor practical to kill all coyotes. Use a variety of methods to manage damage as no single method is effective in every situation. Success usually involves an integrated approach that combines removing food attractants with effective lethal removal of individual offending animals.

### Habitat Modification

Changing the habitat may help in some areas, depending on the season and the growth of crops. In general, areas that are more open are less likely to have problems with coyote predation or damage to crops.

Piles of junk located near farms are good habitat for rabbits and other prey, and may bring coyotes into proximity with livestock. Eliminate sources of cover and food to make yards and landscapes less attractive to coyotes.

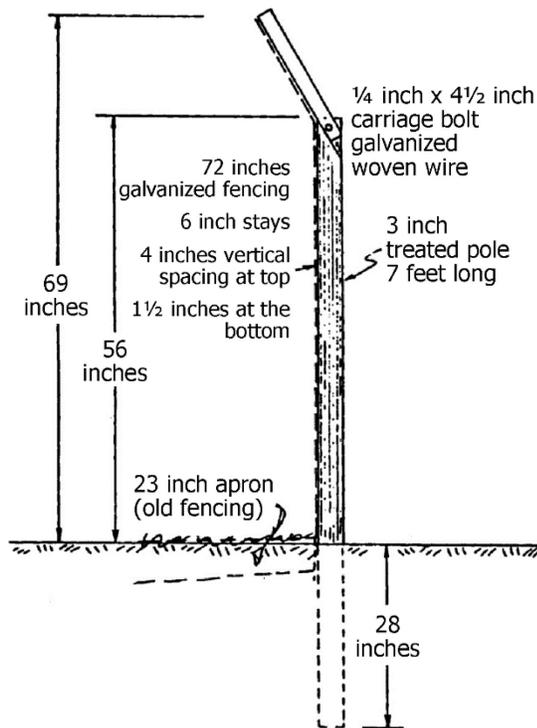
Eliminate intentional and unintentional feeding of coyotes. Bury livestock carcasses, as carcass dumps are attractive food sources for coyotes. Do not allow small pets outdoors unsupervised, especially at night.

### Exclusion

Most coyotes readily cross over, under, or through conventional fences for livestock, or those in residential areas. The response of a coyote to a fence is influenced by various factors, including the experience and motivation of the coyote. Total exclusion, especially from large areas, is unlikely. Some coyotes learn to dig under or climb over fences of almost any size.

The success of fences ranges from poor to excellent. Fences are most likely to be cost-effective where predation is high, there is potential for a high stocking rate, or electric modification of existing fences can be used.

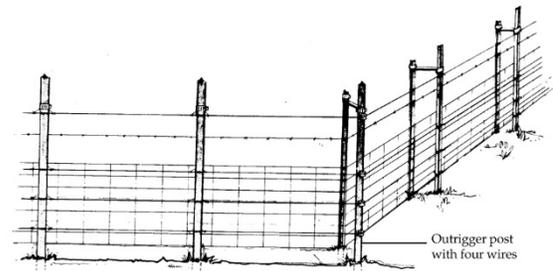
Net-wire fences in good repair can deter many coyotes from entering a field or pasture. Horizontal spacing of the mesh should be less than 6 inches, and vertical spacing less than 4 inches. Coyotes can be discouraged from digging under a fence by a barbed wire placed at ground level or with a buried wire apron. A fence should be at least 5½ feet high to discourage coyotes from jumping over it (Figure 5).



**Figure 5. Barrier fence with wire overhang and buried apron. Image by PCWD.**

The amount of labor and the techniques for installation vary with each type of fence. High-tensile wire fences require bracing at corners and over long spans. Electric fences are easiest to install on flat, even terrain. Labor to install a high-tensile, electric fence may be 40% to 50% less than for a conventional fence for livestock. The amount of labor required to keep electric fences functional can be significant.

Another option is electric modification of existing fences. Where existing fences are in good condition, the addition of wires can significantly improve the ability of the fence to discourage predators and its effectiveness for controlling livestock (Figure 6). A charged trip wire placed 6 to 8 inches above the ground and 8 to 10 inches outside the fence often is effective in preventing coyotes from digging and crawling under. This addition to an existing fence often is the most economical way to fortify a fence against coyotes.



**Figure 6. Woven-wire fence for livestock that has been modified with electrified wire. Image by PCWD.**

The advent of safe, high-energy chargers has led to the development of portable electric fences. Most are constructed with thin strands of wire that run through polyethylene ribbon (polytape), which is more visible than wire run through polyethylene twine (polywire). Both are available in single and multiple wire rolls, or as mesh fencing. Portable electric fences allow for the setup of temporary pens to hold livestock at night, or during activities to control predators. Animals that are not accustomed to being

fenced may be difficult to contain in a portable electric fence.

Consider modifying chain link and other non-electric fences. Coyotes normally do not jump 6-foot fences. Instead, they grab the top of the fence and pull themselves over (Figure 7).



**Figure 7. Coyotes are capable of climbing chain-link fences. Photo by Ron Case.**

The Coyote Roller™ (Figure 8) is marketed as a device to prevent coyotes from climbing fences. The spinning action of a Coyote Roller™ prevents coyotes from gaining a foothold. The Coyote Roller™ is suitable for fences at least 6 feet tall. The fences must be secured to the ground to prevent coyotes from digging underneath.



**Figure 8. The Coyote Roller™ installs on top of chain link and solid fences. Image by Coyote Roller, Inc.**

### Frightening Devices

Devices that frighten coyotes are useful for short periods of time. Avoid habituation and increase the effectiveness by varying the position, appearance, duration, or frequency of the stimuli, or use them in combinations.

Some devices provide both audio and visual stimuli to frighten coyotes out of an area. Combinations of lights and noisemakers are common. The Electronic Guard incorporates a strobe light and siren that are activated by a light sensor to turn on at dusk and off at dawn. One Electronic Guard can effectively deter coyotes from a 20-acre area of pasture.

Yelling, waving arms, throwing things, blowing whistles, or other hazing may temporarily frighten coyotes in residential areas. Be sure the coyote makes eye contact with you to ensure that the coyote understands humans are a threat. Harass or chase coyotes until they are out of sight to reinforce fear of humans. To be effective, these techniques must be widespread, consistent, and combined with removal of food sources.

### Repellents

No repellents are registered by EPA for the control of coyotes.

## Toxicants

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No oral toxicants are registered for coyotes in the southeastern US.

## Shooting

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In South Carolina, there is no closed season on coyotes for private landowners with a valid hunting license. A free depredation permit may be issued to landowners who do not possess a hunting license. Go to [www.dnr.sc.gov/](http://www.dnr.sc.gov/) for additional information.

In urban areas, shooting may not be a viable option. Consult your local ordinances before discharging a firearm.

## Trapping

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In South Carolina, the legal trapping season is December 1 – March 1 for licensed trappers, however a private landowner may apply for a free depredation permit outside of the regular trapping season or if they do not have a trapping license. Permits can be obtained from any South Carolina DNR office or conservation officer.

Go to [www.dnr.sc.gov](http://www.dnr.sc.gov) for more information.

Many people oppose trapping, especially in urban situations. The most common objections to trapping include the perception that traps are cruel and inhumane, and concern over catching non-target animals, especially pets. When used properly, traps are effective, selective, and safe, especially when used by an experienced trapper. For best and quickest results, have an experienced professional perform trapping.

## Disposition

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### Relocation

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Relocation of coyotes is not permitted in South Carolina.

### Translocation

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Translocation of coyotes is not permitted in South Carolina.

### Euthanasia

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A .22-caliber rim-fire shot to the head is a good method for euthanasia of coyotes, if allowed. Do not shoot a coyote in the head if it must be tested for rabies.

Carbon dioxide also is an appropriate method used by professionals. Use a snare-pole to control the coyote, and transfer the animal from the trap into a suitable CO<sub>2</sub> chamber.

## Web Resources

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<http://dnr.sc.gov>

<http://wildlifecontroltraining.com>

<http://icwdm.org/>

<http://wildlifecontrol.info>

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