



WILDLIFE

Managing Prairie Dogs

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Quick Facts...

Three species of prairie dogs are found in Colorado.

Prairie dogs and their burrows serve as important hosts for numerous other animals.

Prairie dogs can damage rangeland and occasionally carry plague.

Control problem prairie dogs by relocation, visual barriers, shooting, poison grain bait, and fumigation.

Three species of prairie dogs in Colorado occupy an estimated 2 million acres of rangeland. The black-tailed prairie dog lives on the eastern plains, the Gunnison prairie dog in the southwest third of the state, and the white-tailed prairie dog in the northwest third.

Prairie dogs are relatively large burrowing ground squirrels that weigh 1 1/2 to 3 pounds and are 14 to 17 inches long. Prairie dogs have reddish fur, large eyes, short ears and broad round heads.

Biology and Social Organization

Prairie dogs form colonies commonly referred to as prairie dog towns. Small groups, generally composed of one adult male, three adult females and six offspring, defend their territory within the larger town.

Prairie dogs live in burrows about 10 yards apart, 3 to 14 feet deep and 10 to more than 100 feet long. A mound 3 to 10 feet across and 1/2 to 1 foot high at the entrance of the burrow prevents water from rushing in and serves as a lookout station. A density of 35 black-tailed prairie dog mounds per acre is common, although up to 95 mounds have been reported. Burrow systems have one to three entrances.

Black-tailed prairie dog numbers vary from about five per acre in late winter to 20 per acre after the birth of pups in spring. Spring densities can be as high as 35 per acre.

Prairie dogs are active only during the day. White-tailed and Gunnison's prairie dogs hibernate from about October to March, depending on elevation. Black-tailed prairie dogs do not hibernate, but will stay below ground for several days during cold cloudy weather.

Prairie dogs have one litter of three to eight young per year in March or April. The gestation period is 28 to 34 days. The pups venture above ground when they are five to six weeks old. Dispersal of year-old juveniles and a few adults takes place in late spring. Most prairie dogs travel less than 2 miles, but a few migrate up to 6 miles.

Effects on Rangeland

The role of prairie dogs in reducing available range forage for livestock is unknown. Several factors can influence forage reduction, including geographic location, rainfall, dominant grass species and duration of prairie dog habitation. Recent research suggests a wide range of effects, ranging from 20 to 30 percent less forage to an increase in the percent of grass species preferred by livestock.

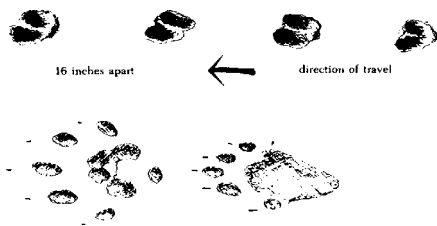


Figure 1: Ferret tracks. Top: in the snow. Bottom: Front and back feet. Illustration by Vivian Drewien.

Black-Footed Ferrets

It is illegal to kill a black-footed ferret, an endangered species that feeds almost exclusively on prairie dogs. It is estimated that one female ferret and her young require about 200 prairie dogs for food per year.

The black-footed ferret weighs 1 1/2 to 3 pounds and is 21 to 23 inches long. It has a black mask, black feet and legs, and a black-tipped tail. Sides are a pale yellow buff that is lighter toward the underside of the body. The forehead, muzzle and throat are almost white, whereas the top of the head and middle of the back are brown.

Do not confuse the black-footed ferret with the European ferret, which has longer and darker fur on the back with an entirely black tail; the mink, which usually is uniformly dark brown; or the long-tailed weasel, which is smaller and has a chocolate brown body with pale yellow underside.

Black-footed ferrets seldom are observed because they occur in low densities and primarily are active at night. However, their presence can be determined by the occurrence of ramps or ferret tracks (Figure 1).

Notify the Colorado Division of Wildlife or the U.S. Fish and Wildlife Service when black-footed ferrets are present.

Black-Footed Ferret Surveys

A black-footed ferret survey, following U.S. Fish and Wildlife Service guidelines, is required in most areas before aluminum phosphide tablets and gas cartridges can be used for prairie dog control. Two percent zinc phosphide also may be relabeled with the ferret survey requirement in the future.

Conduct the survey between July 1 through October 31 and less than 30 days before using a fumigant. Work at night using spotlights. Surveys can be conducted by biologists trained in black-footed ferret survey techniques. For a list of certified biologists, contact the U.S. Fish and Wildlife Service in Grand Junction at (970) 243-2778 or Denver at (303) 275-2370.

A landowner may be exempt from the survey if any of the following conditions exist: a survey was conducted and no ferrets were found; there are less than 80 acres occupied by black-tailed prairie dogs or 200 acres occupied by white-tailed prairie dogs within a 4.3 mile radius of the control site; or the control is conducted in an urban area.

As of February 1998, all of Denver, Jefferson, Phillips and Sedgwick counties and parts of Adams, Arapahoe, Boulder, Larimer, Logan and Weld counties are exempted from a survey. Contact the U.S. Fish and Wildlife Service to determine if an area can be exempted from a survey.

Control Methods

Several alternatives for prairie dog control are available. Landowners may conduct the control method themselves, hire a commercial firm, or get assistance from the Division of Animal Industry, Colorado Department of Agriculture, 700 Kipling, Lakewood, CO 80215; telephone (303) 239-4157. Control materials may be purchased through commercial vendors or from the Colorado Department of Agriculture.

Trapping and Barriers

Prairie dogs can be captured with double-door cage traps baited with a horse sweet mix, flushed from burrows with soap and water, or removed from burrows with a large vacuum truck. All three methods are expensive and their effectiveness is largely unknown. Survival of prairie dogs being flushed from burrows and those relocated to active towns also is unknown. However, releasing prairie dogs into an established colony likely will increase stress on resident and relocated prairie dogs.

Economic Importance

Prairie dog burrows serve as homes for burrowing owls, cottontail rabbits, rattlesnakes and other animals. In Oklahoma, 89 vertebrate species were associated with prairie dog towns. Prairie dogs are a major food source for predators, including the endangered black-footed ferret, badgers, coyotes, foxes, prairie falcons, ferruginous hawks, eagles and owls.

The burrowing activity of prairie dogs decreases soil compaction, increases water intake, aerates the soil and promotes soil formation. Prairie dogs also provide recreation for photographers, hunters and naturalists.

Health Risks

Prairie dogs are hosts for fleas, making them susceptible to bubonic plague. Plague is transmitted to humans via flea bites. Early symptoms of plague include swollen and tender lymph nodes, chills and fever. Early diagnosis and treatment is imperative. When walking through suspected plague areas, apply an insect repellent to socks and pant cuffs before tucking pants inside boots.

The biggest obstacle in relocation is finding release sites. A permit is required before prairie dogs can be relocated. Contact your nearest Colorado Division of Wildlife office to start the process.

Visual barriers constructed from burlap or windrows of small pine trees have slowed colony expansion. Barriers usually are constructed from a woven plastic material. The use of visual barriers is limited due to high construction and maintenance costs. Raptor perches, artificial cover for predators, and predator odors generally have been ineffective in reducing prairie dog numbers.

Shooting

Intensive shooting of small prairie dog colonies during February and March will sometimes control their numbers. It disrupts reproductive activities and removes individual animals. However, shooting may induce bait shyness.

Poison Grain Bait

Poison grain baits legal for prairie dog control in Colorado contain 2 percent zinc phosphide. Be careful with poison grain baits because bait placed outside burrows can kill non-target birds and mammals. For prairie dog control, zinc phosphide is registered for use only on rangelands. Product labels vary among manufacturers and with time. Carefully follow current label directions.

Zinc phosphide is a slow-acting toxicant that can be absorbed in small amounts through human skin. Poison grain baits are classified as restricted use pesticides. Landowners must obtain private certification from the Environmental Protection Agency before they can purchase or use these products. Certification information is available from Colorado State University Cooperative Extension county offices.

Poison grain baits are effective only when the prairie dog's most desirable food, green grass, has become dry and dormant. Fall baiting generally is most successful because prairie dogs eat grass seeds to build fat reserves for the winter. Spring baiting generally is unsuccessful because pregnant females often are not found above ground, unsettled weather is common, and bait acceptance is poor when grass starts to turn green.

Poison grain baits for prairie dog control are most effective during clear settled weather when temperatures are moderate. Rain will wash the toxicant from most baits.

Zinc phosphide application is restricted to July 1 through December 31. It is most successful when applied between September and November.

To increase the acceptance of treated bait and give better control, prebait with untreated oats, preferably steam-rolled, two to three days prior to baiting. Apply prebait and bait by hand on the edge of each mound where bare soil meets grass. Do not place bait on top of the mound or down the burrow.

Thinly scatter the treated bait in a 6-inch bait spot, preferably during early morning. Avoid placing treated bait in piles that may endanger livestock. Apply treated bait only after all or most of the prebait has been eaten and only to burrows where the untreated bait was consumed. If most of the prebait is not consumed after one day, postpone application.

The amount of poison grain should not exceed one heaping teaspoon (4 grams) of zinc phosphide bait per mound. A typical prairie dog town requires about 1/3 pound of zinc phosphide bait per acre. Application of excess bait will not improve control but will increase the risk to non-target animals. Apply poison grain bait only once per season because survivors of the first treatment tend to become bait-shy.

Because zinc phosphide is poisonous to all animals, store it away from humans and pets. Wear rubber gloves to avoid contact with the chemical. Take extra care to avoid breathing zinc phosphide dust.

Effects of Extermination

Extermination of prairie dogs does not guarantee the recovery of productive rangeland. Additional steps must be taken to rehabilitate the evacuated prairie dog towns.

To speed recovery, level mounds with a land plane, blade or offset disc set just above the ground surface. To allow the grass and root system to recover, exclude livestock from the area for at least one growing season. Reseed the area with grass.

Because prairie dogs do not thrive in tall grass, careful management of grass through proper stocking rates can discourage re-invasion by prairie dogs. Prairie dogs often establish colonies in areas where livestock congregate. To distribute grazing pressure evenly, move watering sites and place salt and minerals in areas that are underused by livestock.

When poison grain baits are applied according to directions, they usually result in an 80 to 90 percent reduction in prairie dog numbers. Unsuccessful control generally is due to the presence of green grass or failure to prebait.

Fumigants

Use fumigants when additional control is required. Aluminum phosphide and gas cartridges are legal for use in Colorado. Trade names for aluminum phosphide include Phostoxin, Gastoxin and Fumitoxin. Aluminum phosphide is classified as a restricted use pesticide and gas cartridges are classified for general use. Aluminum phosphide emits a poisonous gas (hydrogen phosphide), whereas gas cartridges produce a suffocating gas primarily composed of carbon monoxide. Fumigants are most effective when used in moist soils in early spring.

The hydrogen phosphide gas produced by aluminum phosphide tablets is toxic to all forms of animal life.

Product labels vary among manufacturers and with time. Carefully follow current label directions.

Aluminum phosphide is classified as a flammable solid. Transportation of aluminum phosphide is governed by the U.S. Department of Transportation rules and regulations. These regulations are subject to change. If you have any questions call Hazmat (Colorado State Patrol Hazardous Materials Section) at (303) 239-4546.

When using a fumigant as a follow-up to a baiting program, treat only active mounds. This greatly reduces the amount of fumigant used. To identify active mounds, shovel or blade the soil or place a dry cow chip over all holes. It is important to begin treatment the day after plugging holes because one prairie dog will uncover several holes in three or four days. Fumigants are most effective when soil moisture is high.

To use the gas cartridge, punch at least five or six holes in one end with a nail or ice pick. Insert the sharp point part way and rotate it to loosen the contents so the cartridge will burn more rapidly. Insert and light the fuse. Once the fuse is burning well, gently roll the cartridge as far back into the burrow opening as possible. Immediately plug the opening with moist soil or a plug of sod placed grass-side down to form an air-tight seal. Do not cover or smother the cartridge. As a general rule, gas cartridges will not give satisfactory control if the soil is dry.

Avoid using fumigants in burrows occupied by black-footed ferrets, burrowing owls, rabbits and other non-target wildlife.

To use aluminum phosphide, insert two tablets as far back into the burrow as possible. Then insert a wadded newspaper and cover as noted before. The newspaper prevents the fumigant from being covered and may deter prairie dogs from digging out before they die.

Aluminum phosphide appears to provide the best control when soil temperatures are above 60 degrees F. When applied properly, aluminum phosphide routinely provides greater than 90 percent control.

The hydrogen phosphide gas produced by aluminum phosphide tablets is toxic to all forms of animal life. Exposure through inhalation produces symptoms such as a pressing sensation in the chest, dizziness, nausea, vomiting, and a rapid onset of stupor. Expose affected people to fresh air and provide immediate medical attention.

Fumigation kills all wildlife in the burrows. Avoid using fumigants in burrows occupied by black-footed ferrets, burrowing owls, rabbits and other non-target wildlife. Burrows occupied by burrowing owls are identified by the white droppings, pellets and feathers found around the burrow opening.

Regulations

Place placards on all four sides of vehicle.

Carry shipping papers containing the following information: proper shipping name (aluminum phosphide), hazard class/division number (4.3), material identification number (UN1397), packing group designation (PG 1),

subsidiary hazards (poison 6.1 inhalation hazard), and amount of product in quantity and total gross weight.

Keep the aluminum phosphide in the original canister and box.

Keep a log book if transporting aluminum phosphide over 100 air miles. The log book is a record of duty for the day, recorded in 15 minute intervals. If transporting under 100 air miles, only a time record must be kept. This includes name of person transporting, date, time started on duty, and time going off duty.

Carry a fire extinguisher with a rating of 10B:C.

Prior to transporting aluminum phosphide, the driver must be satisfied that the vehicle is in safe operating order. At the end of the day that the material was transported, the driver must prepare a written inspection report. The following parts and accessories should be inspected and reported on: service brakes including trailer brake connections, parking (hand) brake, steering mechanism, lighting devices and reflectors, tires, horn, windshield wipers, rear vision mirrors, coupling devices, wheels and rims, and emergency equipment.

The report should identify the vehicle and list any defects or deficiencies found. If none are found the report should so indicate. Correct any defects or deficiencies before operating the vehicle again and note the corrections in the report. The report should be signed by the driver. Make two copies of the report. Keep one copy in the vehicle until the next time an inspection report is required, and keep one copy at the driver's place of business for at least three months from the date the report was prepared.

In addition to these pre- and post-trip inspections, a more in-depth annual inspection is required. Information pertaining to this inspection may be obtained by calling Hazmat at (303) 239-4546.

Have \$1,000,000 insurance if transporting aluminum phosphide in a vehicle with a greater than 10,000 pound gross vehicle weight rating or if transporting over a state line.

The driver must be over 21 years old.