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Managing prairie dogs in Colorado

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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.
Problem prairie dogs are controlled by shooting, using poison grain bait and fumigation.

Description and Distribution

Three species of prairie dogs in Colorado occupy an estimated 2,000,000 acres of rangeland. The black-tailed prairie dog occupies the eastern plains; the Gunnison prairie dog, the southwest one-third of the state; and the white-tailed prairie dog the northwest one-third of the state. Prairie dogs are relatively large burrowing ground squirrels that weigh 1.5 to 3 pounds and are 14 to 17 inches long. Prairie dogs are identified by their reddish fur, large eyes, short ears and broad round head.

Biology and Social Organization

Prairie dogs live in colonies commonly referred to as prairie dog towns. Small groups generally composed of one adult male, three adult females, and six offspring display territorial behavior toward adjacent groups in the town.

Prairie dogs live in burrows approximately 10 yards apart, 3 to 14 feet deep and 10 feet to over 100 feet long. A crater-like mound 3 to 10 feet across and 0.5 to 1 foot high found 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 per acre have been reported. Burrow systems have one to three entrances.

This information provided by:

1. Colorado State University Cooperative Extension wildlife specialist and associate professor, fishery and wildlife biology. 8/93.

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Colorado State University Cooperative Extension

Black-tailed prairie dog densities vary from about five per acre in late winter to 20 per acre after the birth of pups in spring, although spring densities of up to 35 per acre have been reported.

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

Prairie dogs have one litter of three to eight young per year born in March or April. The gestation period is 28 to 34 days. The pups venture above ground at an age of five to six weeks. Dispersal of year-old juveniles and a few adults takes place in late spring. Most prairie dogs disperse less than two miles, but a few disperse up to six miles.

Economic Importance

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

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, which are hosts for fleas, occasionally carry 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.

Effects on Rangeland

The effects of prairie dogs on the reduction of available rangeland forage for livestock currently is unknown. Reduction can be influenced by several factors including geographic location, rainfall, dominant grass species and duration of prairie dog inhabitation. Recent research suggests a wide variety of effects ranging from a 20 percent to 30 percent reduction in available forage to an actual increase in the percent of grass species preferred by livestock.

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 reproductive 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 in length. It is characterized by a black mask, black feet and legs and a black-tipped tail. Their sides are 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 is 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 a 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). Before initiating prairie dog control, look for ferret ramps. Black-footed ferrets are the only animal known to leave a soil ramp after digging in a prairie dog burrow. These ramps are 3 to 5 inches wide and 1 to 10 feet long.

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.

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

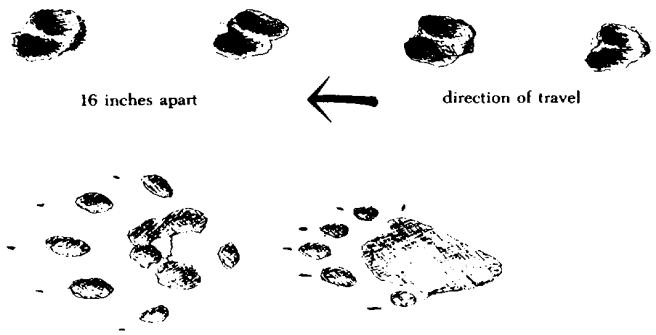

Figure 1: Ferret tracks. A: In snow. B: Front and back feet. Illustration by Vivian Drewien.

Control Methods

General

Several alternatives for prairie dog control are available to landowners who may wish to 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, Colorado 80215, (303) 239-4157.

Intensive shooting of small prairie dog colonies, when conducted during February and March, will sometimes control their numbers because it disrupts reproductive activities and removes individual animals. However, shooting may induce bait shyness. The Colorado Division of Wildlife or Colorado State University Cooperative Extension wildlife specialist may be able to provide names of people who control prairie dogs by this method.

Toxicants

Use caution with toxicants for prairie dog control because poison grain baits placed outside burrows kill a wide variety of birds and mammals, and fumigation kills all wildlife in the burrows. Prairie dog control materials may be purchased through commercial vendors and the Colorado Department of Agriculture.

Poison Grain Baits

Poison grain baits legal for prairie dog control in Colorado contain 2 percent zinc phosphide. Use caution with poison grain baits because bait placed outside burrows can kill non-target birds and mammals.

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

Poison grain baits are effective only when the prairie dog's most desirable food, green grass, becomes dry and dormant. Fall baiting generally is most successful because prairie dogs actively 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 from July 1 through December 31; however, it is most successful when applied between September and November.

Prebaiting with untreated oats, preferably steam-rolled oats, two to three days prior to baiting will increase the acceptance of treated bait and result in significantly better control. Apply prebait and bait by hand on the edge of each mound where bare soil and grass interface. 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 of the prebait and bait.

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 and take extra care to avoid breathing zinc phosphide dust.

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

Fumigants

Fumigants are used when additional control is required. Gas cartridges and aluminum phosphide are the two fumigants legal to use for prairie dog control in Colorado. Trade names for aluminum phosphide include: Phostoxin, Rotox, Fumitoxin, and Gastoxin. Aluminum phosphide is classified as a restricted-use pesticide and gas cartridges are classified for general use. Aluminum phosphide emits a poisonous gas, whereas gas cartridges produce a suffocating gas primarily composed of carbon monoxide. Because fumigants are expensive, laborious to apply and hazardous to wildlife, they should be used only on small acreages, as a follow-up to poison grain baits on large acreages or where grain baits are prohibited by label.

Aluminum phosphide is classified as a flammable solid. Transportation of aluminum phosphide is governed by the U.S. Department of Transportation. Individuals transporting aluminum phosphide are required to comply with the title 49 Code of Federal Regulations for motor carrier safety and transportation of hazardous materials. These regulations require individuals to:

* place placards on their vehicle
* carry shipping papers
* keep the aluminum phosphide in the original canister and box
* follow designated routes
* keep a log book if transporting aluminum phosphide over 100 miles
* carry a fire extinguisher
* pass a Department of Transportation written exam and physical
* have a vehicle safety inspection before or after the trip
* have $1,000,000 of insurance if transporting aluminum phosphide in a vehicle greater than 10,000 pounds gross vehicle weight
* be over 21 to drive a vehicle.

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 next 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 burns 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.

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 wadded newspaper, placed in the burrow after application of the aluminum phosphide tablets, 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 Fahrenheit. 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.

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.

Prairie dog control materials may be purchased through commercial vendors or the Colorado Department of Agriculture, (303) 239-4157.

Black-footed Ferret Surveys

A black-footed ferret survey, following U.S. Fish and Wildlife Service guidelines, is required before aluminum phosphide tablets or gas cartridges can be used for prairie dog control. A nighttime survey, using spotlights, should be conducted from July 1 through October 31 and is required less than 30 days before using a fumigant. Surveys can be conducted only by biologists trained in black-footed ferret survey techniques. Contact the U.S. Fish and Wildlife Service for a list of certified biologists: Grand Junction, (303) 243-2778), and Denver, (303) 231-5280.

A landowner may be exempt from conducting a 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; and the control is conducted in an urban area.

As of August 1993, 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 (see above numbers) to determine if an area can be exempted from a survey.

Effects of Extermination

Extermination of prairie dog populations does not guarantee the recovery of productive rangeland. Additional steps must be taken to rehabilitate the evacuated 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 dog town with an electric fence for at least one growing season and reseed the area with grass. Because prairie dogs do not thrive in tall grass, careful management of grass can discourage reinvasion by prairie dogs.

Resources

Part of this fact sheet was adapted from Managing Prairie Dogs (1984) by William F. Andelt, Cooperative Extension, Kansas State University, Manhattan, KS.