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Irving J. Mork

Extension Wildlife Conservationist, North Dakota State University, Fargo, North Dakota

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GROUND SQUIRRELS AND HOW TO CONTROL THEM

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Presented by:

Irving J. Mork
Extension Wildlife Conservationist
North Dakota State University
Fargo, North Dakota

The Richardson ground squirrel, otherwise known as the flickertail or gray gopher, is common over most of North Dakota north and east of the Missouri River, although they were never common in the immediate Red River Valley.

Flickertails were once distributed over the prairies in great numbers, doing no harm until grainfields encroached on their range. Vernon Baily, writing in North American Fauna No. 49--A Biological Survey, said, "In places the prairie seemed alive with them and they could be seen scampering about together and standing up like picket-pins, while their shrill whistle was heard on all sides. With each call-note their short little tails are flipped up and down, a farewell twinkle being given as they disappear down the burrow, hence the popular name of 'flickertail'."

An idea of the original numbers that once inhabited North Dakota can be gained from a letter written by a resident of Cando in 1890: "An old gentleman here killed 1,500 'gophers' by actual count, before the first of June. From the first of June to the middle of July, he and a cotton broker from St. Louis, who spends the summer here on his farm, calculated that they killed over 2,500 more. One forenoon they killed 135, as shown by the tails they had captured. These 4,000 animals were killed on and around the outer edges of one section of land."

During the summer flickertails eat much green vegetation--largely the stems of grain, grass, and a great variety of succulent plants. Late in the summer and into the fall, when the seeds of prairie plants and grasses begin to ripen, they constitute the principal food supply. An important part of the flickertail's summer food consists of insects such as grasshoppers, crickets and caterpillars. However; when grain is available it seems to be the favorite food.

Flickertails can be seen gathering grain in their cheek pouches to deposit in their burrows. The cheek pouches are so large that when filled they make the head look more than double its normal size.

Flickertails bear their young in early May in litters of six to 10. They are born blind and naked, but grow rapidly. By the middle of June they are about 1/3 grown and can be seen playing near the burrow. It is strictly a daylight animal, seldom found outside its den after dark unless disturbed.

Like all small animals, the flickertail has many enemies. Longtailed weasels, badgers, hawks and owls all prey on ground squirrels.

As the land became developed for agriculture, the original habitat was destroyed by the plow, so the Richardson ground squirrel is now confined chiefly to pasture areas. The flickertail is no longer an economic pest, although they occasionally become a nuisance along the edges of grain fields and in sunflower fields.

North Dakota has long been called the Flickertail State. This is a fitting reminder of the days when these interesting little rodents inhabited the state's rolling grasslands by the millions.

From a scientific standpoint, the ground squirrels belong to the order Rodenta, or gnawing mammals. They belong to the same family that includes woodchucks, prairie dogs, chipmunks, tree squirrels and flying squirrels.

All ground squirrels live in burrows, which they dig themselves. All ground squirrels have one characteristic in common--they stand on their hind legs to view the world, trying to distinguish between friend and foe or to catch an alarm signal from their neighbors.



The thirteen-lined ground squirrel, often called the striped gopher, is found in all areas of North Dakota. It gets its name from the 13 white lines, some broken by brown spots, running lengthwise over the back and sides. The base color varies from light to dark brown. The lines do not extend over the head and face.

The striped ground squirrel prefers areas of short grass. It is a solitary animal that is abroad only during the daylight hours. The openings of its burrows are usually concealed and seldom have tell-tale mounds of dirt around them. Many dens have more than one opening.

It feeds on seeds and other vegetable materials, insects, mice, eggs of ground nesting birds and an occasional small bird.

During August and early September the striped ground squirrels can be seen carrying full cheek pouches of nesting material and food into their burrows as they prepare for six to seven months of hibernation. In late September as the weather gets cooler, den entrances are plugged up and the ground squirrels spend the winter below the frost line.

They usually come out of hibernation in mid-April. One litter of six to 10 young is born in May or early June. The young are born naked and blind, but they develop rapidly and become independent within a month of birth.

The striper seldom if ever drinks water. It gets its moisture from what it eats and presumably from dew.

The striped ground squirrel is a generally beneficial animal because its main diet consists of weed seeds and harmful insects, although it has been accused of pulling sprouted grain from the ground.

Ground Squirrel Control

There are several ground squirrels native to the plains states. Under favorable conditions, many of them can become nuisance animals. The Richardson ground squirrel is most often considered an economic pest. Therefore control of *Richardsonii* only will be considered.

The Richardson ground squirrel, *Spermophilus richardsonii* is often mistakenly called the prairie gopher; it also goes by the common names gray gopher, yellow gopher, flickertail, and gopher. It is found in colonies all across the plains states.

Description

When full grown, this animal is about 12 inches long and varies in color from tawny to a "near" white.

The richardson ground squirrel is a prairie-inhabiting rodent and lives in the ground. The burrows, which are used for shelter, vary in depth and length depending upon the soil type and time of year.

The usual burrow entrance consists of an opening on one side of the mound that contains the soil removed from the burrow. This mound serves both as a protection for the burrow entrance and as an observation post for the animal.



Life History

The life history of this rodent is simple. The hibernating animals appear in March or April, depending on the weather. Soon after they emerge, mating takes place. The period of gestation is about 20 days and the young are born hairless. The young can fend for themselves one month after birth. Six to 12 are born to a litter and there is only one litter per year. Young ground squirrels become noticeable during June. The young ground squirrels establish their own burrows at about two months of age.

During the late summer adult males and females make preparations for hibernating, and each animal busies itself in collecting grass for its nest and a store of seeds, roots and bulbs for food. The material gathered during these foraging trips is carried to the nest. Mature adult males and females go underground between late June and early July but individuals of that year's litter remain above ground and enter hibernation in late August and early September. At the first sign of cold weather, the majority of these animals are in hibernation.

Ground squirrels have definite periods of time which they spend in the open. These periods are usually devoted to feeding, and to the collecting of material to carry them through the winter. In North Dakota, the first period of daily activity starts a few hours following daybreak and lasts for approximately two hours. The next period continues from about 10 to 2, and the final period extends from about 4 to 8. At these times the animals can be seen sitting up like "picket pins" or dashing back and forth in their search for food.

Though ground squirrels are mainly vegetarians, they are also particularly fond of such insects as crickets, grasshoppers, caterpillars and cutworms.

The ground squirrel has a long list of natural enemies. Of these, the main ones are hawks, weasels, badgers and man.

Ever since the first settlers began to cultivate the land, the Richardson ground squirrel has been recognized as a serious agricultural pest because of its habit of invading grain fields and vegetable gardens where it feeds on and destroys seeds, seedlings, forage and grain. Since 1938 ground squirrels have assumed a place of importance in regard to human health, as brought to light by the activities of the Alberta Rocky Mountain spotted fever and sylvatic plague survey. The importance of this animal to human health takes two forms: (1) directly, through the carrying and transmitting of bubonic (sylvatic) plague infection; and (2) indirectly through acting as a host to spotted fever ticks, D. andersoni, which carry and transmit Rocky Mountain spotted fever and tularemia.

Four methods of control have been practiced successfully: poisoning, trapping, fumigation or gassing and shooting. Each method has certain good features and gives excellent results under ideal conditions. Poison treated grain is the most common and effective method used on farms and ranches. For large areas and numerous animals, it is the only practical control method known today.

Poisoning

Poisoned oats or barley is the cheapest and most effective method for controlling ground squirrels. Oats is preferred over barley by the animals. Large grains are less likely to be taken by smaller, seed-eating birds than cracked wheat or grass seed.

Due to EPA restrictions and control of strychnine powder, it can no longer be obtained for bait mixing by the layman. Strychnine grain bait must be obtained from a bait mixing plant. Available grain bait sources vary in each state. To avoid confusion investigate the procedure for obtaining poisoned grain bait in your state.

Poisoned grain is best used in early spring and late summer when squirrels are "bouching" - that is, gathering seeds in their cheek pouches to store or to carry to some favorite eating place. At other times of the year, the squirrels take scattered seeds as found, eating each kernel after quickly removing the hull, and the strychnine coating usually does not have a chance to affect them.

The poisoned grain should be scattered with a spoon on hard bare ground close to the cleared surface of squirrel runways. It is less likely to be found and eaten if dropped in tall grass or on the soft earth around burrows. About 1/2 tablespoon should be scattered at each spot. Grouse, pheasants, and domestic poultry can withstand relatively large doses of strychnine. Poisoned grain should be handled and placed with care at all times, to avoid poisoning of seed-eating birds, pets, livestock and young children. DO NOT REMOVE POISONED BAIT FROM ORIGINAL CONTAINER WHEN STORING.

Trapping

Trapping is effective in gardens and around buildings. A No. 1 jump or spring trap is usually recommended. The trap should be set in the burrow entrance; bait is not necessary. The trap should be attached to a wooden drag. This will prevent the animal from dragging the trap into the burrow. Check all traps daily to prevent undue suffering of the trapped animals, and also to make the traps more effective through resetting. Gopher traps may be obtained from most hardware outlets.

Fumigation

Carbon bisulphide is EPA approved and has been used successfully on open fields with contact (dry) soils. This is a true gas and should be used only by experienced operators. Carbon monoxide has also given effective results. It too should be used with care. This gas is generated by an older automobile engine and may be introduced into the burrow by means of one-inch hose attached to the car exhaust. About 10 minutes is required to gas the average burrow system with all exit holes plugged with soil.

Shooting

Small numbers of ground squirrels in fields or other open areas may be selectively destroyed with a .22 caliber rifle. Shooting is most successful on bright, sunny days during the periods of greatest activity.

There are times when other ground squirrels inhabiting the plains states become a problem. Control of those animals is the same as for Richardsonii.

