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Pocket Gophers

Natural History

Two species of pocket gophers live in Minnesota. The plains pocket gopher *(Geomys bursarius)* is the larger animal and covers more territory than the northern pocket gopher *(Thomomys talpoides)* which is restricted to west central and northwestern counties.

Pocket gophers inhabit vast areas of range and pasture lands yet are seldom seen. Gophers lead a solitary life and prefer the relative safety of burrows. These creatures have several adaptations for moving around easily underground: small eyes, inconspicuous ears, long claws on the front feet, and powerful forequarters. These gophers have large incisors on both the upper and lower jaw and these teeth are used to dig as well as gather food. Specially formed lips close behind the incisors and prevent soil from entering the gopher's mouth.

Pocket gophers were named for the animal's fur-lined external cheek pouches used for transporting food but not soil. Adult plains pocket gophers can be anywhere from 10.5 inches to 12 inches long and weigh up to 1 pound. Coat color ranges from sandy brown to dark chocolate. In Minnesota, females normally bear one litter each year of from one to six young. It is usual for animals in Minnesota's southernmost counties to have two litters a year and in some southern states more than two litters.

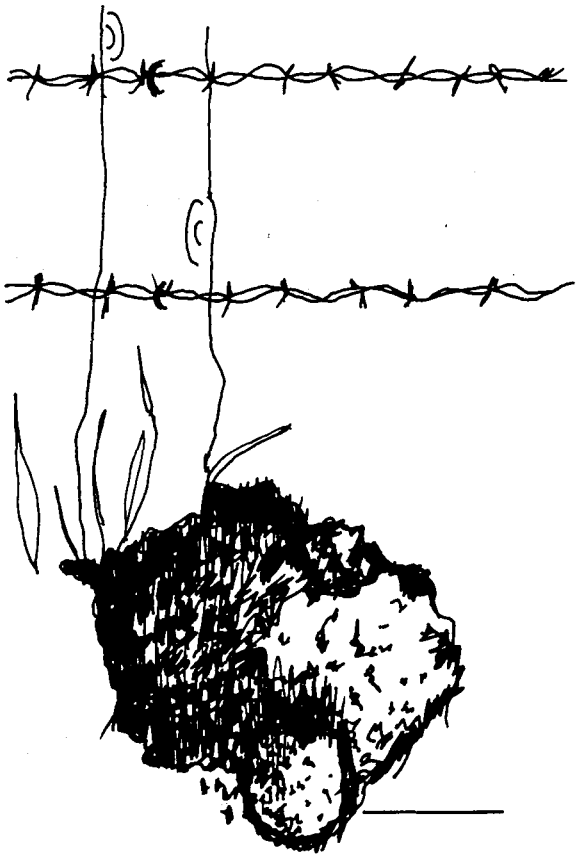
The northern pocket gopher looks like the plains pocket gopher, but is smaller. A look at the teeth, the upper incisors, will distinguish the two. The northern pocket gopher has smooth incisors while the plains pocket gopher has two longitudinal grooves on each incisor.

Circles indicate the two row clusters of pocket gopher mounds. These two clusters point to the presence of at least two adult pocket gophers (or two families). Count the clusters of mounds to get an idea of the number of gophers inhabiting the area.

Burrowing and Mound Building

The presence of pocket gophers is first noticed by the mounds of soil pushed to the surface during burrow building. These mounds are different from mounds of moles or ground squirrels. Gopher mounds are usually fan shaped, 12-18 inches wide and 4-6 inches high. Newly formed mounds will show the location of the burrow entrance as a slight horseshoe-shaped depression on the perimeter of the mound. On old or weathered mounds the burrow entrance is not obvious. Except when actively moving soil, gophers will not leave the burrow entrance open. Conversely, ground squirrels always leave the burrow entrance open. Moles, like gophers, close burrow entrances but because of a difference in how the soil mound is formed, the entrance outline is seldom visible. Mounds built by moles are considerably smaller and fewer in numbers than gopher mounds. In addition, moles form slight pressure ridges in the soil as they burrow; these can be seen and felt as one walks over them. Gophers are deep burrowers so these pressure ridges don't show.

Except during the breeding season, gophers lead solitary lives and each adult occupies its own system of burrows. One adult may build as many as 100 mounds a year, moving as much as 2.25 tons of soil to the surface. The burrow system is two-story and may be as long as 200 feet. Tunnels are parallel with the soil surface and vary in depth by soil type from 6-24 inches for the feeding burrows to 5 or 6 feet for food storage and living chambers.



Note the horseshoe-shaped burrow entrance.

Value to People

As with most wild animals, pocket gophers cannot be called all bad or all good. Values must be judged by the desired uses of the land on which gophers live. The northern pocket gopher's diet includes a high proportion of forbs. So, this species may be of considerable help in reclaiming overgrazed rangelands. Since gophers eat troublesome weeds this allows more desirable perennial grasses to become established. However, northern pocket gophers in an alfalfa field would cause a severe yield reduction. Nebraska research results indicate that plains pocket gophers can reduce alfalfa yields up to 25 percent; losses due to northern pocket gophers would probably be greater.

On the basis of crop loss it would appear that pocket gophers ought to be eliminated. But there are some hidden factors to consider. Gophers loosen compacted soil which allows better aeration and increased water infiltration. This serves other purposes such as reduced surface runoff, reduced water erosion, and improved soil moisture. In addition, gopher activity increases soil fertility and tilth by adding excrement and by burying vegetation. These are long term benefits and may occur slowly, going unnoticed at first, but eventually appearing as increased vigor in stands of native grasses.

Control

Great horned owls, barn owls, coyotes, foxes, badgers, weasels, rattlesnakes, and bull (gopher) snakes are a few natural enemies which help control gopher population. Predator action, however, does not severely limit or reduce gopher numbers. Disease and starvation also cause some mortality. Natural control mechanisms, while effective in terms of long-range population control, are usually insufficient for the short run.

On small acreage (10 acres or less) hand application of poison bait (strychnine alkaloid coated grain) during the fall is usually effective. Depending on the source of labor and the priority of control, initiation of a fall trapping program to complement baiting would give added control. Trapping would also be effective in the spring following a fall baiting program. Special pocket gopher traps are available at most nurseries, farm supply, and large hardware stores.

Machine baiting with the use of a burrow builder is the most practical means of control on areas larger then 10 acres. Fall and spring applications give the greatest control. The soil must be moist enough to allow the torpedo tube easy passage and to hold a neat burrow shape when compressed. Artificial burrows may vary in depth and that is less important than forming a neat tunnel. A tunnel depth of approximately 10 inches is desirable. Completely enclose the field to be protected by parallel rows of artificial burrows. Space these burrows at intervals of 25-40 feet: wide in spring, narrow in fall. Within three weeks of application 85-90 percent control can be attained by proper application of bait. Reapplications may be needed at two to four year intervals.

Strychnine is toxic to all animals and must be handled and applied according to label instructions. *All* applications must be below ground. Clean up all spilled bait. One pound of bait per acre of treated land is sufficient to gain control, additional bait beyond this rate is wasted.

Many counties own burrow building machines. To schedule the use of one, check at the county office of your Agricultural Extension Service, Soil Conservation Service, or Soil and Water Conservation District.

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