

Mole Control

Scott R. Craven



Although they are rarely seen, moles are common in Wisconsin. They make their presence known by the raised tunnels and mounds of soil they leave behind in lawns, gardens, fields and pastures.

There are two species of moles in the state—the common, eastern or prairie mole (*Scalopus aquaticus*), found mainly in the western and southern parts of the state, and the star-nosed mole (*Condylura cristata*) which dwells primarily in the northern half. Both are small, stout mammals about 7–8 inches long. Moles are often confused with mice, but they are not rodents. They lack the long, curved incisor teeth of rodents and are equipped instead with small sharp teeth suited to their diet of insects, grubs and worms. They have small, poorly developed eyes and ears.

In the hand, you can distinguish moles from other small mammals by their soft, velvety fur and huge, flattened front feet armed with large broad claws for digging. Moles and shrews are closely related, but are not alike in habits or appearance. The prairie mole is silvery gray, while the star-nosed mole is charcoal gray to black. The star-nosed mole is readily identified by the fleshy tentacle-like projections on the tip of its nose that give it its name (see illustration). Both moles have short tails compared to mice; the prairie mole's is 1–1½ inches long and the star-nosed mole's is 2–3 inches.

Moles tunnel and live beneath the surface of the soil. The star-nosed mole prefers moist soils near water. It is an excellent swimmer and can often be found in the water. Because of its habitat preference, it rarely causes a problem.

The prairie mole favors drier upland soils that are loose and free of rocks. It is the major problem species. The prairie mole digs tunnels at several levels and can move through loose soil with surprising speed. The surface tunnels seen in lawns and open areas are feeding tunnels. The mole's nest and permanent residence are in tunnels 6–18 inches beneath the surface.

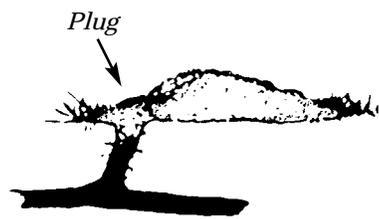
Do not confuse moles with pocket gophers! Pocket gophers also live in western Wisconsin. The damage they cause is more severe and widespread than that of moles. Tunnels visible as raised ridges are the work of moles. A mole “hill” results when a mole pushes soil up and out of a tunnel through a vertical shaft. This creates a circular mound with round “ripple marks” made by each new load of soil that is pushed out (see illustration). In contrast, a gopher mound results from soil that has been pushed in one direction from an inclined shaft. It tends to be heart- or fan-shaped and the hole is usually plugged with soil. Gopher tunnels are not visible at the surface.



Eastern or Prairie mole



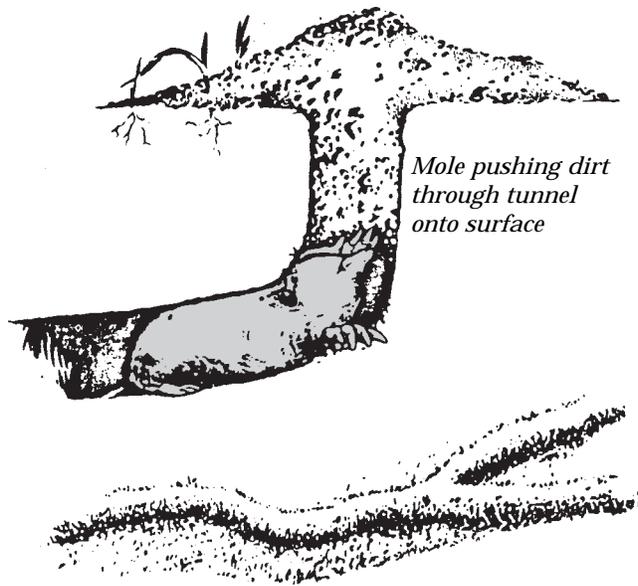
Star-nosed mole



Gopher tunnel and mound



Mole tunnel and hill



Only moles tunnel near the surface of the ground leaving raised ridges of soil or pushed-up sod.

Mole problems

Moles are often blamed for the destruction of bulbs, seeds and garden plants. In fact, moles rarely consume plants or plant parts, though they will occasionally take a few seeds. They dig their tunnels in search of earthworms, grubs and other small creatures of the soil. Mice, ground squirrels and insects that also inhabit the mole's network of tunnels usually do the actual damage by eating or gnawing on plant parts.

Moles are not entirely blameless, however. Their raised tunnels cause problems, particularly in well-manicured lawns in parks, golf courses and yards. The tunnels interfere with mowing and expose roots to the air, killing grass and leaving a twisting yellow strip in an otherwise green lawn. Plants are frequently killed when a mole tunnels directly under a row of garden seedlings. The action is not malicious; the mole merely finds the going easier with more moisture and food in the freshly cultivated soil. Moles feed on both beneficial creatures, such as earthworms, and on harmful vegetable pests like grubs, and other insect larvae or adult insects. During the winter, moles are not a problem.

Shallow, winding trails that appear in lawns when the snow melts are the work of meadow voles, not moles (see Extension publication *Meadow Mouse Control* A2148).

Control

Poisons are often publicized as the solution to a mole problem. Peanuts, grains or other non-animal food materials are used as carriers for the poisons. However, since moles feed almost entirely on insects and worms, they do not readily take poisoned baits. In most cases, the resulting control is poor.

Mole poisons sometimes create the false impression of being effective simply because they cause moles to abandon surface tunnels. A mole might abandon a tunnel if it is frightened by the disturbance associated with placing poisoned baits or by the odor of the baits, or if the poison kills the mole's food supply. Dry weather also sometimes forces moles into deeper tunnels in search of food.

Gas cartridges can sometimes be used successfully to fumigate a mole's tunnel system. Cartridges should be lit and inserted quickly into the tunnel, one every 15–20 feet, and the tunnel sealed with a piece of sod. Cartridges are available at some hardware stores and garden centers. The moles will be killed if you catch them in their surface tunnels while you are fumigating. When using either poisons or fumigation, read and follow all label instructions carefully for safety and best results.

Indirect control

A serious mole problem indicates that moles have an abundant food supply. If the food supply can be eliminated or reduced, the moles will be forced to leave the area. There are several pesticides available that kill white grubs (June beetle larva), other insects and even earthworms. Inquire at your county Extension office or garden center about an appropriate pesticide.

There are several disadvantages to this approach. First, the necessary chemicals may be expensive, relative to other control options. Second, there is a delay of several weeks before you can expect any effect on the moles. Third, beneficial creatures like earthworms may be killed and the food supply for ground-feeding birds may be reduced.

Small gardens, raised beds and other small, highly valued areas may be protected with a mole barrier. Use 24-inch widths of sheet metal or hardware cloth to create a fence dug 12 inches deep into the soil, with the bottom bent outward at a 90° angle for 6–8 inches. Only a few inches need to remain above the soil surface. Such a barrier will require a significant excavation.

Repellents

A commercial repellent called “Mole-Med” has been tested successfully in Michigan. “Mole-Med” is based on castor oil and is applied via a hose-end applicator or sprinkling can to turf areas. A pint bottle will treat 5,000 square feet. This product was first marketed in Wisconsin in 1995 with promising results. Since then, other similar products have become available. Check with a local garden center or hardware store to see what is available in your area.

A plant called “Gopher Purge” or “mole plant” (*Euphorbia lathyris*) has been advertised in Wisconsin as a way to repel gophers and moles from a large area. This plant’s ability to repel has not been substantiated, and it has the potential to become a problem weed. It is also poisonous.

Trapping

Trapping is an effective and efficient method of mole control in terms of time and cost. At first glance, the highly specialized mole traps that are available look brutal and dangerous to the user. In fact, the sudden death of the mole in such a trap is quite humane, and a reasonable amount of caution will prevent accidents to the trapper.

You’ll have better trapping success if you are mindful of moles’ habits and behavior. For instance, a mole will become suspicious if its sensitive nose encounters something foreign in its runway. It’s likely to back up and burrow around or under an ordinary trap set in its tunnel. But it won’t be suspicious of dirt blocking a runway because farm machinery, people and animals frequently close burrows. A mole will usually push its way into such a dirt blockade, open it and continue on its way.

This habit makes the animal vulnerable to specially designed traps that straddle or encircle the runway—or are held suspended above it—with a trigger pan resting on or hidden in a dirt blockade. With this arrangement, the unsuspecting mole can’t detect the trap and, in retunneling through the dirt obstruction, either lifts the trigger pan or pushes the dirt against the hidden trigger arm, releasing the trap.

Another thing to remember is that the mole is extremely sensitive to anything unnatural in its environment. Never tear up large sections of a mole burrow trying to locate a good spot for a trap. A poorly set trap is a detour sign for a wary mole.

Two good traps for catching moles are (1) the choker type; and (2) the harpoon type. These traps are available at most garden supply or hardware stores or through garden catalogs. They are about equally effective. The harpoon type is more popular than any of the various styles of choker traps because it is easier to set.

Selecting a trap site

Another key to trapping moles is to place your trap in a frequently used tunnel. Traps must be placed in hunting tunnels, which are close to the surface and recognizable by their conspicuous ridges. Remember that these surface tunnels are made for the primary purpose of finding food. Many of them are not used more than once, while others serve as regular travel routes. Ordinarily, a tunnel that takes a more or less straight course for some distance, or seems to connect two systems of tunnels will be used frequently. On the other hand, a tunnel that has mouse holes or other openings is not being used; moles invariably repair such surface openings. You can identify tunnels in use by poking small holes in them or by stepping on them and determining next day which ones have been repaired.

Setting a choker trap

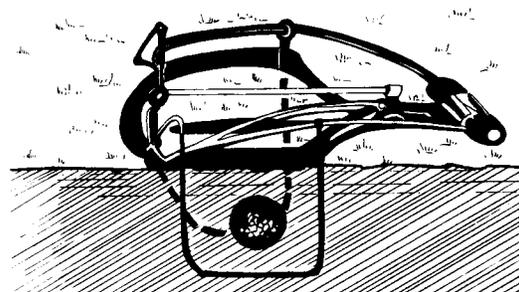
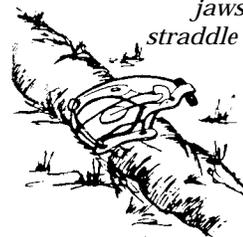
In setting a choker trap (see illustration), it is usually necessary to make an excavation across the tunnel. Make it a little deeper than the tunnel and just the width of the trap. A garden trowel is handy for this. Note the exact direction of the tunnel from the open ends and place the set trap so that its jaws evenly straddle—or its loop encircles—this course. Block the excavated section with loose, damp soil from which all gravel and debris have been removed. Pack the soil firmly underneath the trigger pan with your fingers and settle the trap so that the trigger rests snugly on the built-up soil. Finally, fill the trap hole

Setting a choker trap



Make an excavation across the burrow.

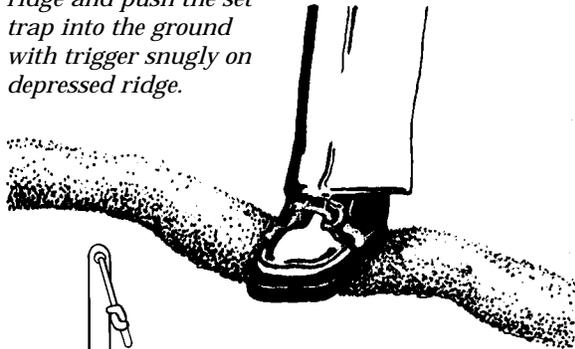
Place set trap so jaws evenly straddle course.



Block section with damp soil, settle trap, and fill with loose dirt.

with enough loose dirt to cover the trap level with the trigger pan and to exclude all light from the mole burrow. If the trap fails to produce after two days, it can mean (1) the mole has changed its habits; (2) the runway was disturbed too much; or (3) the trap was improperly set and the mole detected it. In any event, move the trap to a new location.

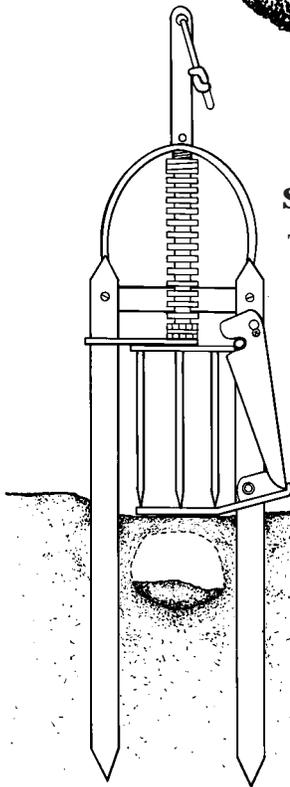
Pack down the runway ridge and push the set trap into the ground with trigger snugly on depressed ridge.



Setting a harpoon trap

To use a harpoon trap (see illustration), merely pack down the tunnel ridge with your foot and push the set trap (with safety catch in place) into the ground so that the trigger pan rests snugly on the depressed ridge and the two pointed supports straddle the tunnel evenly.

Release the safety catch, and the setting is complete. If the ground is hard or gravelly, spring the trap once to make sure that the impaling spikes penetrate into the soil for their full length. If they do, reset the trap without changing its position. If they don't, select a new place.



For more information

To learn more about controlling moles, contact your county Extension office or the USDA Animal Damage Control Office in Waupun (1-800-433-0688) or Rhinelander (1-800-228-1368).

For further reading, *The Mammals of Wisconsin* by H.H.T. Jackson is available in most bookstores and libraries.

Much of the information about trapping techniques in this publication came from *Controlling Problem Moles* by F. Robert Henderson, Cooperative Extension Service, Kansas State University.



Author: Scott Craven is a professor of wildlife ecology at the University of Wisconsin-Madison and a wildlife specialist with the University of Wisconsin-Extension, Cooperative Extension.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, University of Wisconsin-Extension, Cooperative Extension. University of Wisconsin-Extension provides equal opportunities in employment and programming, including Title IX and ADA requirements. If you need this information in an alternative format, contact the Office of Equal Opportunity and Diversity Programs or call Extension Publishing at (608) 262-2655.

© 2000 by the Board of Regents of the University of Wisconsin System doing business as the division of Cooperative Extension of the University of Wisconsin-Extension. Send inquiries about copyright permission to: Director, Cooperative Extension Publishing, 201 Hiram Smith Hall, 1545 Observatory Dr., Madison, WI 53706.

You can obtain copies of this publication from your Wisconsin county Extension office or from Cooperative Extension Publications, 45 N. Charter Street, Madison, WI 53703, (608) 262-3346. Outside Madison, call our toll free number: 1-877-WIS-PUBS (947-7827). Before publicizing, please check on this publication's availability.

To see more Cooperative Extension publications, visit our web site: <http://www.uwex.edu/ces/pubs/>

Mole Control (G3200)

SR-9/2000-2M-100

UW
Extension