

Controlling Nuisance: Meadow Mice

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Department of Conservation

U.S. Fish and Wildlife Service

Meadow mice, also called meadow moles, are small, chunky, ground-dwelling rodents. Mature meadow mice are about seven inches long. The tail is less than two inches long, the hind feet shorter than one inch. They are chestnut-brown mixed with black, with dark gray underparts. Feet are brownish, and the thinly haired tail is dark on the upper surface shading to a lighter gray beneath. Eyes are small and black. The ears are furred and do not project much above the hair. Young are uniformly gray.

Meadow mice have other common names, including round moles, field mice and meadow moles. These terms frequently lead to confusion in identification. It is important that small mammals be identified correctly before starting control activities, since materials or methods effective against one species may not be useful against another.

People frequently confuse meadow mice with moles, shrews and pine mice. Moles have greatly enlarged front feet with prominent digging claws. Shrews have long, pointed snouts and pointed front teeth. Meadow mice have rounded, somewhat blunt, snouts, and their front teeth are chisel-shaped. The distinction between meadow and pine mice is less obvious. The best way to compare them is by hind foot and tail length. The hind foot of the pine mouse is about the same length as its tail; the tail of the meadow mouse is twice the length of its hind foot.

Meadow mice flourish in extensive grassy or weedy areas such as old fields and moist swales with rank growths of succulent green plants. Stream and pond banks, orchards, pastures, hay fields and fence rows also provide suitable habitat for these mammals, and they occasionally invade lawns, gardens and nurseries. They are strict vegetarians.

Meadow mice are active year-round. They create and use systems of surface runways, keeping them free of obstructions. Overhanging vegetation provides cover as they travel along these runways. Such travel lanes, about 1-1/2 inches wide, are reliable indicators of meadow mouse activity.

Bits of freshly cut vegetation and accumulations of mouse droppings in the runways indicate they are being used. Vegetation, small roots, or mold in the paths indicate that mice no longer use them. Meadow mice build and use underground tunnels and often will use subsurface runs made by moles or pine mice. Under the cover of snow, meadow mice can travel freely without fear of being seen and captured. Usually the mice leave with the melting snow, and the lawn recovers.

Meadow mice spend nearly all their time at or below ground level. However, in periods of snow or flooding, they sometimes climb small trees and shrubs.

Meadow mice nests are globular structures of dry grass about six to eight inches in diameter. Nest cavities usually are located on the ground surface, under old boards, discarded metal, logs, or other such cover. In winter, above-ground nests sometimes are made in deep snow; these temporary nests are vacated when the snow melts.

Mating begins in the spring, as soon as weather moderates and plant growth starts, and continues into the fall. Females are capable of reproducing at the age of three weeks, and litters of two to nine young are produced monthly. Natural forces control the number of meadow mice. Coyotes, foxes, weasels, skunks, hawks, owls, dogs and cats all prey on meadow mice. In the absence of mice, these predators might turn to other prey more valued by man.

In unfarmed areas where woody plants encroach on grasses and weeds, habitat for meadow mice is less hospitable. Fires, floods and crop rotations also take heavy tolls of meadow mice.

Regardless of limiting factors, meadow mice can become so plentiful that they damage crops and ornamental plants. Normal foods include native grasses, legumes and herbaceous weeds. But cultivated crops, ornamental shrubbery, vegetables and flowers, especially bulbs, are also eaten. During the colder months when green vegetation is scarce, mice sometimes eat the bark of trees and shrubs. If permitted to continue, such feeding can result in complete girdling and death of plants. This is particularly true in the case of apple trees; apple bark is a winter favorite of mice. Tree seedlings are sometimes completely severed, the small stumps appearing as though they had been cut by miniature beavers.

Damage of this sort usually occurs at ground level, but under cover of heavy snow, damage may occur well above the ground surface. In orchards, mice are especially damaging, since they live in deeper underground burrows and feed heavily on tree roots.

Control

Cultural. Keep vegetation away from trees for a distance of two feet, through mowing, herbicide application, cultivation, or the use of a layer of crushed stone or gravel 2 to 3 inches deep. Mow orchard sod at 3 to 6 inches height. Scrape dead vegetation away from trees, since it often serves as cover and nesting material for meadow mice.

Mechanical. Wire guards made of 3/8-inch mesh hardware cloth will help prevent meadow mouse damage to small trees and shrubs. Wire cylinders 18 to 24 inches high and about 6 inches in diameter set into the ground around the trunk will keep mice from girdling the stem. These guards also will protect against rabbit damage. Because mice and rabbits travel on snow, wire guards are not reliable when snow depth is greater than the height of the wire.

Trapping. Mouse-size snap traps are effective in reducing the number of mice, and trapping is the safest way to remove mice around homes. Set traps at burrow openings or in runways near ornamental shrubbery, flower beds, gardens, or rock walls. Traps should be lightly sprinkled with rolled oats and baited with peanut butter or small cubes of fresh apple. Set traps so the trigger lies across the runway and cover the trap with grass, leaves or an inverted cardboard box of appropriate size. Allow space for the trap to operate freely under the covering. Check traps morning and evening, and reset traps until mice are no longer captured.

Pesticides. For large acreages such as orchards and Christmas tree plantations, the careful use of rodenticides is suggested.

The most selective and effective is hand-baiting mouse runs and holes with treated baits. Since few growers can afford to spend the necessary time to seek runs or holes, treated baits may be distributed by broadcasting selectively into mouse cover. Try to anticipate several days of fair weather when distributing the bait, because rain and snow reduce its effectiveness. Orchards could have both pine mice and meadow mice. Most rodenticides are registered for both species.

Rodenticides are effective in controlling meadow mice in nurseries. Broadcast treated bait to take care of the immediate problem. Bait stations, properly distributed and tended, are a good method of making bait available to mice that move into the nursery after the initial broadcast treatment. You can make bait stations from discarded beverage cans. Enlarge the opening in the end of the can to about 1-1/2 inches in diameter. Dent the side of the can. Place a tablespoon of treated bait in the can, then place the can, dented side down, in the area to be protected.

Placement of the bait container should be marked with a stake or flag so it can be located easily for refilling or removal. Check occasionally to be sure that a supply of fresh bait is present.

This bait is protected from weather and is not readily available to desirable wildlife. Since mice are not attracted to the bait from any distance, it is necessary to place a sufficient number of stations so that all mice find some bait. Use one container for each 80 square feet of nursery bed, and place bait stations under grass or other vegetation since mice avoid bare ground.

Mouse repellents are not suggested because of inconsistent results.

Missouri Wildlife Code Rule — 3CSR10-4.130

Owner May Protect Property. Subject to federal regulations governing the protection of property from migratory birds, any wildlife except deer which beyond reasonable doubt is damaging property may be captured or killed by the owner of the property being damaged, or by his agent, at any time and without permit, but only by shooting or trapping except by written authorization of the director. Wildlife may be so controlled only on the owner's property to prevent further damage. Wildlife so captured or killed may not be used, transported, sold or given away but must be reported to an agent of the commission within twenty-four (24) hours and disposed of in accordance with his instructions. Deer that are causing damage may be killed only with the permission of an agent of the commission and by methods authorized by him.

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