

## IVS Management Training Program

Meadow Vole-Fact Sheet  
Mary McKinney

**Scientific Name:** *Microtus pennsylvanicus*

**Common Name:** Meadow vole: Other names:  
meadow mice, field mice

**Image:** Adult.

**URL:** [https://naturalhistory.si.edu/mna/full\\_image.cfm?image\\_id=151](https://naturalhistory.si.edu/mna/full_image.cfm?image_id=151)

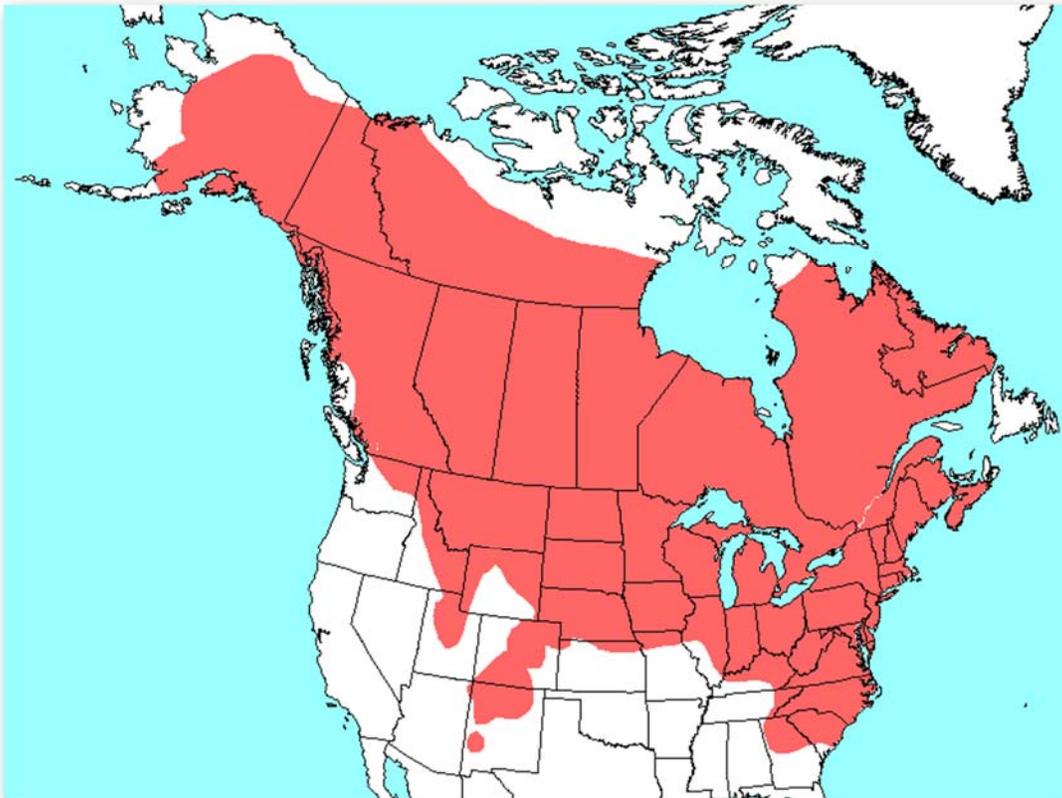


**Native Range:** Meadow vole-*Microtus pennsylvanicus* is a native to northern most parts of North America except OR, CA, NV, AZ, OK, TX, AR, LA, AL, MS, FL and all but the very upper portion of the Northwest Territories of Canada.

**Image:**

Distribution in North America

**URL:** [https://naturalhistory.si.edu/mna/full\\_image.cfm?image\\_id=1008](https://naturalhistory.si.edu/mna/full_image.cfm?image_id=1008)



**Description:** The meadow vole is the most widely distributed *Microtus* species in the United States. Meadow voles are smaller than squirrels and pocket gophers but a little bigger than a mouse. Meadow voles are most commonly found in grasslands, but prefer moister areas and are also found in wooded areas. Meadow voles are common in hayfields, pastures, and along irrigation ditches.

A small rodent, meadow voles grow between 5 to 7 1/2 inches with gray to yellow-brown fur, (with black-tipped hairs). Northern subspecies may also have some red in their fur. Underbellies are gray, silver or buff. The tail is bicolored. Males and females are similar in both size and color. Eyes are small and ears are small. Incisors are constantly growing prompting constant gnawing to keep the length in check. Meadow voles are active year-round during both day and night. Breeding occurs throughout the year mostly in spring and summer. Females have from 1-5 litters per year with each litter having from 1-11 young with average being 3-6. The gestation period is about 21 days. Young are weaned by 21 days old with females maturing in 35 to 40 days. Lifespans are short, probably ranging from 2 to 16 months. There is a high incidence of mortality during the first month of life. Nests are constructed of woven grass and serve other purposes besides nurseries as they are also used as resting areas, and as protection against weather. Nests are usually below ground or are constructed under boards, rocks, logs, brush piles, hay bales, fence posts, or in grassy areas. Meadow voles may dig shallow burrows with nests built in enlarged chambers. During the winter nests are often constructed under the snow on the ground surface.

**Image:** "Not My Bucket List"



**URL:**

[https://www.inaturalist.org/guide\\_taxa/335872](https://www.inaturalist.org/guide_taxa/335872)

**Image:** Adult Meadow vole



**URL:**

<https://www.crittercontrol.com/services/voles/types-of-voles>

### Ecological Impacts:

(Although the Meadow vole isn't considered a true invasive species-they can cause considerable damage to agriculture crops, residential landscapes, and gardens.) A native species, the Meadow vole plays an important ecological role in their natural un-inhabited range. The species is an important food source for many predators, and disperses mycorrhizal fungi. The Meadow vole role as a consumer and nutrient distributor, it can contribute to habitat restoration after a fire. After disruptive site disturbances such as forest or meadow fires, the meadow vole's activities contribute to habitat restoration. It's preference for open areas makes it a food source for predators such as coyotes, snakes, hawks, owls, and weasels; however, predators do not normally control vole populations.

### Economic Losses:

Because they breed rapidly they can experience population outbreaks every few years leading to densities in hundreds of voles per single acre of land. As the Meadow Vole is mostly vegetarian, feasting on grasses, seeds, garden vegetables, tree bark, fruits, clover, and alfalfa puts them at odds with property owners. The most easily recognized sign of voles is 1- to 2-inch wide runways and tunnels in lawns or gardens and damage to root crops such as potatoes, carrots, beets, and turnips. Voles also cause extensive damage to trees and ornamental plants by girdling. Look for irregular patterns of gnaw marks at the tree base that are about 1/8-inch wide, 3/8-inch long, and 1/16-inch deep. Most tree damage occurs in winter. Young trees are preferred, but any



age tree may be targeted when food is scarce. With increasing populations, damage increases. Voles at high densities can damage crops in production agriculture, and runways and tunnel systems can divert and disrupt irrigation that can lead to system failures. Be alert for signs of vole damage like bark stripped from the base of trees or damaged bulbs, seeds, and tubers. These behaviors devastate crop yields and vegetation growth to the point where farmers and gardeners may incur substantial financial losses because of voles.

**Image:** Meadow vole lawn damage

**URL:**

<http://www.uwyo.edu/barnbackyard/file/documents/magazine/2015/summer/07/2015bbvoles.pdf>

### Management Strategies:

Integrated management plans that include all available tools should be utilized. The most successful strategy involves *prevention!*

- **Habitat modification.** Keep a clean house i.e.; mow, till, graze or apply herbicide to remove tall grass, weeds, and other vegetation from within and around windbreaks, crop fields, lawns and landscaped areas. Remove piles of wood or construction debris, rock piles, etc. that may provide cover. Don't provide a comfortable home!

- **Exclusion.** Effective only for small areas/trees. Use ¼-inch mesh hardware cloth or tree protectors around seedlings and young trees. Bury 6 inches to keep voles from burrowing underneath and extend 18 inches above ground. This same method can also protect small vegetable and flower beds.
- **Repellants.** Effectiveness uncertain. Includes the fungicide Thiram or capsaincin (the “hot” in chilis). Timing important.
- **Trapping.** Placing baited (peanut butter is a good choice) snap traps perpendicular in runways. For small populations may be effective.
- **Toxicants.** Poison baits such as zinc phosphide or anti-coagulant types provide short term effectiveness. Fall applications are best. Strict label requirements for proper application and bait placement. *These pesticides may require an applicators license to purchase.*



**Image:** Trunk protector

**URL:**

<http://ipm.ucanr.edu/PMG/M/V-MA-MSPP-MC.007.html>

#### **Notes:**

*There are 23 vole species in the United States. Wyoming is home to seven species of them-4 common: Prairie, Meadow, Long-tailed, and Montane vole. Voles pose no major public health hazard because of their infrequent contact with humans; however, they are capable of carrying disease organisms, such as plague (*Yersinia pestis*) and tularemia (*Francisilla tularensis*). Be careful and use protective clothing when handling voles.*

*Always read and follow any pesticide labels as they are requirements! Wear proper personal protective equipment. University Extension, Weed and Pest Districts, or other land management agencies are good resources for more information on choosing the proper control methods for your specific need.*

#### **Other Online Resources:**

<http://icwdm.org/handbook/rodents/voles.asp>

<http://ipm.ucanr.edu/PMG/PESTNOTES/pn7439.html>

<https://www.fs.fed.us/database/feis/animals/mammal/mipe/all.html>

<http://fieldguide.mt.gov/speciesDetail.aspx?elcode=AMAFF11010>

[http://www.uwyo.edu/barnbackyard/\\_files/documents/magazine/2015/summer/072015bbvoles.pdf](http://www.uwyo.edu/barnbackyard/_files/documents/magazine/2015/summer/072015bbvoles.pdf)