

Microtus californicus:

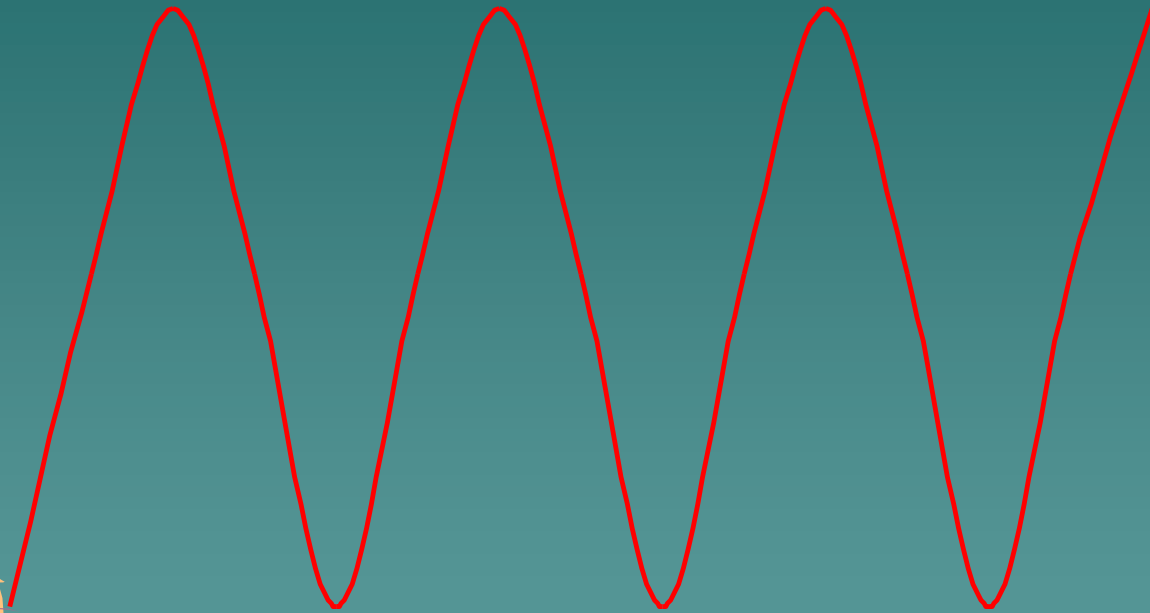
the California vole
(Meadow mouse)

Voles (*Microtus* spp.)





Dramatic population fluctuations...



Biology...



- 5 to 10 litters per year

- 3 to 6 young per litter



Behavior...



- Nocturnal and diurnal
- Social
- Dig shallow burrows
- Prefer high cover
- Habitual mover
- High dispersal



Damage...



vole damage to brussels sprouts



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Management options....



- Habitat modification
- Exclusion
- Trapping
- Poison baits

Voles prefer lush vegetation

Therefore, make habitat less suitable by...

- Grazing
- Mowing
- Burning
- Cultivating
- Clearing buffer strips

But these practices improve
the habitat for
California ground squirrels!

exclusion techniques



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Hardware cloth fence, $\frac{1}{4}$ -in mesh, ~10" high, slightly buried



Hardware cloth attached to existing fence

Mouse traps



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Trapping....



Trapping as an Activity Indicator:

- ◆ Snap traps (baited with apple slices)
- ◆ set in runways and near burrows
- ◆ Use 50 or 100 traps
- ◆ $\geq 10\%$ trap success generally indicates a rodenticide bait application is warranted.



Vole trapping kit - www.traplineproducts.com

Registered toxicants:

- ◆ Zinc phosphide
- ◆ Chlorophacinone
- ◆ Diphacinone
- ◆ Aluminum phosphide (fumigant)

Some are Restricted Use Pesticides

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VOLES (MEADOW MICE)

Integrated Pest Management for Home Gardeners and Landscape Professionals

Six species of voles of the genus *Microtus* occur in California. They are collectively called meadow mice or voles. Two species of voles are responsible for the majority of damage. The California vole (*Microtus californicus*) is the most widespread vole in the state, found in the Owens and Central valleys and nearly the entire length of the coast range. The montane vole (*M. montanus*) inhabits northeastern California and the eastern Sierra slope. Voles do not commonly invade homes, and should not be confused with the house mouse, *Mus musculus*.

Voles are intriguing small mammals because some populations regularly go through cycles from low to high numbers with occasional eruptions that can send numbers soaring (up to several thousand per acre).

IDENTIFICATION

Voles are mouse-like rodents somewhat similar in appearance to pocket gophers (Fig. 1). They have a compact, heavy body, short legs, short-tufted tail, small eyes, and partially hidden ears. The long, coarse fur is blackish brown to grayish brown. When fully grown they can measure 5 to 8 inches

multiple burrow openings that are each about 1 1/4 to 2 inches in diameter. The runways are easily found by pulling back overhanging ground cover. Fresh clippings of green grass and greenish-colored droppings about 7/8 inch long in the runways and near the burrows are further evidence of voles. With age, the droppings lose the green coloring and turn brown or gray.

BIOLOGY AND BEHAVIOR

Voles are active day and night, year-round. They are normally found in areas with dense vegetation. Voles dig many short, shallow burrows and make underground nests of grass, stems, and leaves. In areas with winter snow, voles will burrow in and through the snow to the surface.

Several adults and young may occupy a burrow system. Home-range size varies with habitat quality, food supply, and population levels, but in most cases it is no more than a few hundred square feet.

Vole numbers fluctuate from year to year, under favorable conditions their populations can increase rapidly. In some areas their numbers are regulated

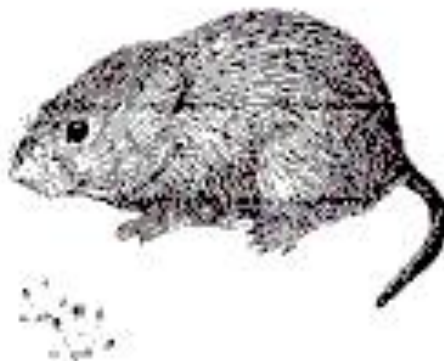


Figure 1. Meadow mouse.

plants, bulbs, and tubers. They eat bark and roots of trees, usually in fall or winter. Voles store seeds and other plant matter in underground chambers.

Voles are poor climbers and do not usually enter homes or other buildings. Instead, they inhabit wildlands or croplands adjacent to buildings, or gardens and landscaped sites with protective ground cover. Most problems around homes and gardens occur during outbreaks of vole populations.

The logo for the University of California Agriculture and Natural Resources. It features a white rectangular background with a yellow vertical bar on the left. The text "University of California" is in a large, dark blue serif font, and "Agriculture and Natural Resources" is in a smaller, dark blue serif font below it. In the background, there is a faint, circular seal of the University of California with the text "THE UNIVERSITY OF CALIFORNIA" and "1868". Below the seal, the motto "Making a Difference for California" is written in a dark blue serif font.

University of California
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