

NATURE DETECTIVES

Winter 2021



Meadow Vole Finds a Home

Meadow Vole left the burrow where she was born in early spring. Six inches long and only five weeks old, she was a fully-grown adult. She set off to explore her world, searching through thick grasses until she found a good spot for digging.

She dug a shallow burrow under a protective rock near a creek. Starting from the entrance hole, she began nibbling plants to make a runway. Her almost two-inch-wide runway was a trail along the ground, trampled by her quick footsteps and sprinkled with chewed off bits of grass and other plants. Her runway grew longer with many side trails as she gnawed her way through lush meadow vegetation. Her paths meandered around trees and shrubs. Tall plants draped over the runways, partially hiding Meadow Vole as she scurried along to her next meal.

Lots of Baby Voles!

Nearby male voles soon caught her scent and became her mates. During the warm months, Meadow Vole had a new litter of babies every few weeks. The males lived in their own burrows and didn't help raise the babies. By the time winter came, lots of little voles had departed to find homes of their own.

Hide Below the Snow, Meadow Vole

Winter weather shriveled the plants beside Meadow Vole's runways. Long grasses no longer hid her from her enemies—the fox, coyote, bobcat, hawk, and owl. A dusting of snow made her even more visible to their hungry eyes.



What a wonderful change when the snow grew deep!

At the bottom of the snowpack, warmth from the ground kept the air much less chilly than the cold winds above the snow. Tunneling through sugar-like snow crystals nearest the ground was simple.

Meadow vole added exits and air vents beside trees and under shrubs. Living under the snow made it harder for her enemies to find her. She would only abandon her cozy world when melt water flooded her snow tunnels.

Voles Are Rodents

Rodents outnumber all other mammal groups. Mice, rats, beavers, squirrels, chipmunks, prairie dogs, porcupines, marmots, pocket gophers, along with voles are rodents living in Boulder County. All rodents chew, chew, chew, and chew!



Gnawing on plants wears down rodent teeth, but that isn't a problem for voles or any other rodent. Their teeth never stop growing from the base, and are always being sharpened at the tip as they eat. The front of each tooth is harder than the back of the tooth. As top teeth scrape against bottom teeth, the softer back surface of their teeth is slowly rasped away, keeping a sharp edge on each tooth.

The Voles of Boulder County

Six different species of voles are found in various habitats here. Voles have stubby snouts and plump bodies. They are covered with soft fur except for their tails. Their tails have a sparse amount of hair. Unlike mice with their Mickey Mouse ears, vole ears are small and hard to see tucked in their dense fur. Vole necks are hidden in thick fur between their head and body.

The color of the six kinds of Boulder County voles varies, but they all sport grizzled dark gray/brown or reddish brown fur. The species are slightly different in size, but all are around six inches long, with somewhat varying tail lengths.

Habitats for Voles

Voles usually live fairly close to water. Some species have names that hint at where they can be found. **Mountain voles** inhabit the county's high mountains. **Red-backed voles** and **Heather voles** are mountain dwellers too. **Montane voles** are found in the high mountains and also in lower mountain habitats. **Prairie voles** are prairie and foothills residents. **Meadow voles** can survive in drier places and are the most widespread in the county. They can be found from the prairies to the mountains.

A Vole's Diet Is Green (Mostly)

Voles graze on green grasses and tender plants all through the spring, summer, and fall. They nibble berries and seeds when they find them.

When freezing winter weather causes meadow plants to become brown and brittle, food is scarce. There is little left to eat except tough bark and roots. Some voles have stored food in their burrow or other protected places.

Voles living under deep snow can often find green shoots growing under the blanket of snow.



Babies, Babies, and More Babies

Several teeny vole babies are born in each litter in a ball-shaped nest the female vole constructs from grass stems. The babies are born furless, toothless, and with closed eyes. They drink their mom's milk, and within a week they have hair and teeth. In two weeks their eyes open, and they start eating plants. In three weeks, they are able to survive on their own. Soon a new group of babies is born in the nest. Meanwhile, female youngsters from the first litter can already be having babies of their own.

Unlike the other vole species, Prairie voles have just one mate for life, and the male and female live together. Both build the nest and take care of their young.



Look Out Voles! Danger lurks!

With so many little voles born each year, the land would be overrun with voles except for their numerous predators, parasites, diseases, and hazards such as flooding and starvation. Foxes, coyotes, bobcats, weasels, and martens have voles on their dinner menus. Owls look for them at night, and hawks and falcons spot them during the day. Snakes prey on baby voles in their nest or burrow. Ticks, lice, and other parasites weaken voles. Diseases take their toll. Nibbling, chewing voles sometimes cause serious problems for orchards, farms, and gardens, and people kill the voles to save their harvest.

Deep snow does not stop sharp-eared foxes and coyotes from hearing rodents scurrying below the snowpack. Foxes pounce at the sound, trapping voles in their tunnel beneath the snow. Great horned owls also punch through deep snow to catch the voles they hear below. Slim-bodied weasels slip down vole tunnels following the scent of their prey under the snow. With all these dangers, voles typically do not live beyond a year, and most have much shorter lives.

By the Way, Voles Are Not Moles

The similar names can be confusing, but voles and moles are very different critters.



Voles have a furry rounded nose, narrow clawed toes, and shiny black beady eyes.

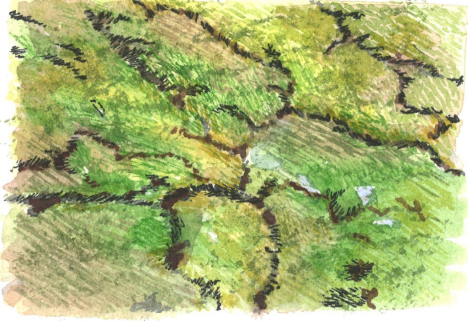
They spend a lot of time above ground, scampering along their runways through grassy meadows, day or night.

Moles have naked, pointy snouts, wide webbed feet, and no visible eyes or ears.

They spend almost zero time above ground. Moles are not in the rodent family, and they do not live anywhere in Boulder County.



Evidence of a Winter World Below the Snow



Melting snow can uncover signs of a hidden world beneath the snowpack, and it is fun to observe areas newly made bare by warm sunshine. Look for a network of trails where voles chewed grasses and roots. You might find a scattering of grass clippings or a ball of dry grasses that was a vole nest. The disturbed ground may be bare in some places. Look for openings to burrows around rocks and logs. Check around the main trunks of shrubs and trees.

You may find tube-shaped trails that look like meandering, covered tunnels. These are not made by voles. These trails are made by rodents called pocket gophers. The pocket gophers make squiggly ridges of mounded dirt as they kick soil into tunnels in the snow while burrowing into the ground under the snowpack.

Checking Temperatures Above and Below the Snow

Wait for a cold day when deep snow covers the ground to try this activity. You'll need: two simple outdoor thermometers (small, slim thermometers would work best), a long stick, and some tape. Securely tape one thermometer flat against the bottom of the stick. Tape another thermometer several feet above the first.

Push your stick into the snow until the thermometer end reaches the ground. Keep your stick there for at least five minutes. Then check the temperature on both thermometers. Is there a difference in the temperature under the snow and the temperature in the air above the snow?

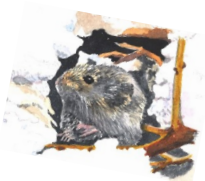
If There's No Snow on the Ground

Look for an animal hole in the ground. Make sure the animal isn't right inside or nearby so you don't disturb each other. Poke your thermometer stick as far into the hole as it will go. Wait at least five minutes and compare the temperature on both thermometers.

If There's No Snow and No Holes

Look for a big pile of leaves or a pile of brush and leaves on the ground. Push your thermometer stick into the leaves as far as you can. Wait the five minutes again, and check both thermometers.

Brrrrr! Where would you hide on a cold day if you were a vole?



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