

Squirrels

Status

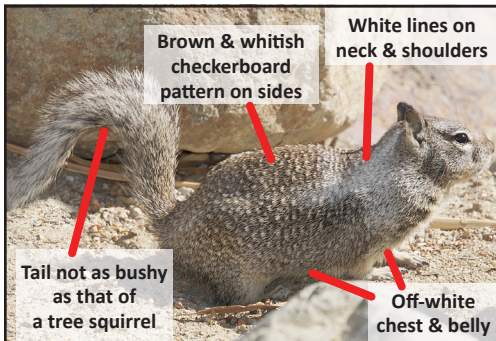
- Bites
- Carries internal & external parasites
- Can transmit pathogens on its body
- Often infested with fleas that can vector pathogenic bacteria, the cause of plague

General Information

Squirrels are small mammals with short legs and long hairy tails. The squirrel family has 273 species and includes tree squirrels, ground squirrels, antelope squirrels, flying squirrels, chipmunks, prairie dogs, and marmots. Orange County has two native species: one type of ground squirrel and one type of tree squirrel. A second species of tree squirrel was introduced here and is a serious pest. Ground squirrels are social and nest in large subterranean colonies. Tree squirrels are less social, often solitary, and nest in trees. Squirrels eat such things as roots, leaves, seeds, nuts, insects, bird eggs, and fish.

What Do They Look Like?

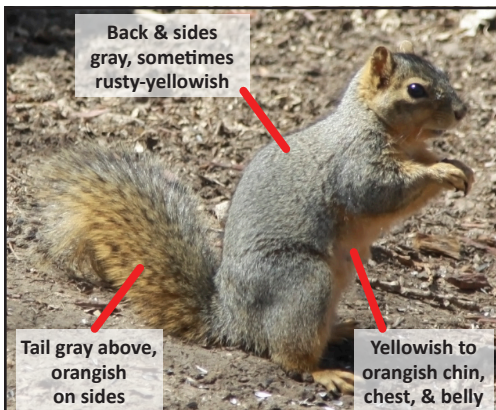
Squirrels are members of the squirrel family (Sciuridae), which is part of the rodent order (Rodentia). All rodents have a single pair of sharp upper and lower front teeth (incisors) that continually grow. In some species, the mouth closes behind the incisors, leaving the incisors exposed. Rodents have no canine teeth and have a large space between their incisors and molars. Squirrels have a long completely-hairy tail, short legs, and a short snout (rostrum). Some types, such as ground squirrels, have internal cheek pouches in which they carry food back to their nests. Tree squirrels have no internal cheek pouches.



California ground squirrel (*Spermophilus beecheyi*, native). Head and body 23-28 cm (9-11 inches) long, tail 13-23 cm (5-9 inches) long. Hairs on its head are brownish, those on its body are brown interspersed with small patches of white or off-white hairs that form a checkerboard pattern. Whitish hairs form lines on the sides of its neck and shoulders. *The chest and belly are off-white. The tail is bushy, but not as bushy as our other squirrels.* They feed on a wide variety of plant life and need only open soil to dig their dens and build nests within. They have a home range of about 4.5 hectares (11 acres).



Western gray squirrel (*Sciurus griseus*, a type of tree squirrel, native). Head and body 23-30 cm (9-12 inches) long, tail 25-30 cm (10-12 inches) long. Hairs throughout its body appear to be a uniform gray, though some hairs are black, others white. They often have a small patch of rusty hairs behind their ears. Paws are dark gray to black. *The belly is white. The tail is very bushy and gray with very long white hairs.* They eat mostly acorns and are usually found in places where oak trees live. They travel from tree to tree, seldom on the ground. In fact, they are rarely found more than a few meters away from any tree. They have a home range of about 0.1-6.5 hectares (0.3-16 acres).



Eastern fox squirrel (*Sciurus niger*, a type of tree squirrel, not native). Head and body 25-38 cm (10-15 inches) long, tail 23-35 cm (9-14 inches) long. Most hairs on its back and sides are gray, though in some populations they are rusty brown. Hairs on its cheeks, ears, and paws are rusty-yellowish. *The belly is yellowish to orangish. The tail is very bushy with a gray upper (dorsal) surface and long orangish hairs along its sides and lower (ventral) surface.* They travel mostly on the ground and will even climb out of one tree and walk on the ground to the next tree. They eat a variety of fruits and nuts. They have a home range of over 20 hectares (50 acres), a much larger area than the western gray squirrel.



Life Cycle

Ground squirrels are typically encountered in parks, vacant lots, and hillsides where they excavate extensive communal burrows in well-drained soils. They hibernate during harsh or moderate winters, but usually do not hibernate during mild winters. Adults mate in late winter, give birth in spring, with 4-13 offspring in each litter. They live about 5 years.

Both of our **tree squirrel** species nest in tree cavities, in abandoned bird nests, and on tree limbs. Tree squirrels do not hibernate and are active all year. The western gray squirrel mates in winter-summer, gives birth in late winter-spring, and have one litter a year, with 3-5 offspring in each litter. They live about 11 years. Eastern fox squirrels have a mating season twice a year and have two litters a year, with 3-4 offspring in each litter. They live over 7 years.

Human Interactions

Squirrels forage for food in gardens and parks, even in fruit trees and in bird feeders. Their feeding may damage fruit-bearing and ornamental plants. They will also gnaw on plastic sprinkler heads and irrigation lines. Some eat bird eggs.

The **California ground squirrel** and **western gray squirrel** are native to our area and are important parts of natural ecosystems. They may become problematic when they venture onto human property. **Ground squirrels** sometimes dig dens near homes, gardens, schools, playgrounds, and parks. Mounded soil surrounding their burrows and entrance holes can become trip hazards. Sometimes they burrow under masonry walls, utility sheds, decks, and porches, undermining their stability.

The **western gray squirrel** typically lives in forests at higher elevations and is rarely found near homes. It too will feed in gardens and bird feeders in rural canyons and nearby foothills.

The **eastern fox squirrel** was intentionally introduced to southern California where it has become a voracious pest in urban and suburban areas. It is known to gnaw through wire shielding and plastics, causing damage to electrical systems.

Health Risks

Ground squirrels are host to fleas which can contain and transmit (vector) bacteria that cause disease. One such flea-vectorized bacterium (*Yersinia pestis*) causes plague, a disease that killed an estimated 60% of the human population of Europe in the 1300s-1400s. Ground squirrels are themselves killed by plague, which occasionally wipes out entire colonies. Squirrels are only rarely infected with rabies virus.

When an animal is dead or dying, its fleas leave the body and seek another host animal. If you are nearby, those fleas may jump onto you, bite, and increase your risk of contracting disease. If you find squirrels (or other rodents) acting strangely (weak, staggering, aggressive), dying, or dead for no apparent reason, keep back, do not approach, disturb, or handle them, and immediately notify the landowner (such as a park ranger).



This flat metal shield serves as a rodent baffle and provides shade for the birdfeeder

This dome-shaped baffle, which is placed *above* the feeder, prevents squirrels and other rodents from climbing *down* into the birdfeeder

This conical wrap-around collar baffle, which is placed *below* the feeder, prevents squirrels and other rodents from climbing *up* to the birdfeeder

Tips to Exclude Squirrels

Residents of squirrel-prone properties can take a number of preventive measures to discourage squirrels from their property. Remove debris and trash that squirrels may use as shelter. Eliminate potential food sources such as pet food and fallen fruit. Hang bird feeders from a squirrel baffle or use a squirrel-proof feeder; both prevent squirrels from accessing bird food.

Ground squirrels typically dig under fences to gain access to yards. Fencing can be enhanced by digging about 24 inches below grade, installing chain link, and burying it. This effectively extends the fence below grade to make it difficult for ground squirrels to dig below it. Tree squirrels climb over fences, often on plants that extend over the fence. Prune plants away from fences and buildings; also prune low-hanging branches well above the ground.

Tree trunks can be outfitted with metal collars; squirrels and other rodents cannot climb over them. Stack lumber and firewood at least 18" above the ground and 6" away from walls, fences, and other structures. Keep perimeter areas weed-free. Secure garbage, recyclables, and compost in containers with tight-fitting lids. Squirrels are afraid of dogs; if you have a dog, give it access to your yard and squirrels will usually leave.