

Tree or Ground Squirrel: What's the Difference?

California is home to several species of squirrels, which can be divided into three groups: tree squirrels, ground squirrels, and flying squirrels.

Ground squirrels have been identified as the most common vertebrate pest in agricultural areas, but they can also be pests in urban and suburban areas. There are several species of ground squirrel in California, but the California ground squirrel is the species most likely to be a pest of landscapes, gardens, and structures.

Some tree squirrel species can also be problem pests around homes and gardens where they feed on a variety of nuts and fruits, or cause damage by gnawing on cables and gaining entry into structures. While ground squirrels and some species of tree squirrels can be pests, flying squirrels are very elusive and not generally considered pests.

It is easy to distinguish the different squirrel groups from each other: when you startle a tree squirrel it will generally run up a tree, while a ground squirrel will typically retreat to an underground burrow. Ground squirrels are capable of climbing, but they are often not seen very high in trees, and tree squirrels almost never retreat into burrows on the ground.

It can be difficult to visually tell the difference between the species within the groups, especially between tree squirrels. Squirrel management requires different tactics, so it's important to identify the squirrel species correctly and be aware of any legal restrictions before beginning any management plan.

Tree Squirrel Species

There are four species of tree squirrels in California (Table 1); two species are native and two are introduced from the eastern part of the United States. Regulations regarding management of tree squirrels are complicated, so it is extremely important to be able to identify squirrels to species level.

Douglas squirrels (*Tamiasciurus douglasii*) (Figure 1), sometimes called chickarees, are native to California and found in



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Figure 1. Native Douglas squirrel.



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Figure 2. Western gray squirrel.

coniferous forest regions of the north coastal area and along the Sierra Nevada Mountain region. These very vocal tree squirrels are not usually considered pests. However, they may become garden or home pests in more remote rural areas.

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Western gray squirrels (*Sciurus griseus*) (Figure 2) are native and found throughout much of California, primarily in oak woodlands of the foothills and valleys and in pine-oak forests. Western gray squirrels are gray above with distinct white underparts and prominent ears. They are distinguished from the eastern gray and other squirrel species by their very long bushy tails that are primarily gray with white-frosted outer edges.

Eastern gray squirrels (*Sciurus carolinensis*) (Figure 3) were originally introduced from the eastern United States into Golden Gate Park in San Francisco, California. They are also established in areas of Calaveras and San Joaquin counties in California and may be expanding their range. They can be variable in color. As their name suggests, they have a mostly gray coat. Eastern gray squirrels can also have a reddish tint to their coats. Eastern gray squirrels are medium-sized, with relatively narrow tails and short ears as compared to western gray squirrels.

Eastern fox squirrels (*Sciurus niger*) (Figure 4) were also introduced from the eastern part of the United States and are well-established in most major cities of California. Fox squirrels can be identified by their grizzled yellow-brown to orange coat, tan to reddish-brown underside, and bright orange-brown ears. The fox squirrel, often incorrectly referred to as the red squirrel by residents of California, is visually distinguishable from the native western gray squirrel; the western gray squirrel is slightly larger, has silver-gray fur with creamy white underparts, and has a notably bushier tail.

California Ground Squirrel

California ground squirrels (*Otospermophilus beecheyi*), sometimes referred to as just ‘ground squirrels’, are native and found in almost all regions of California. Their backs have mottled fur that is light and dark brown, with gray and white on their shoulders. Their underside is lighter with a combination of lighter browns, grays and white. They have a semi-bushy tail, which can add to confusion when distinguishing them from tree squirrels. California ground squirrels also have a white ring around each eye (Figure 5).



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Figure 3. Eastern gray squirrel.



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Figure 4. Eastern fox squirrel.

Management and Regulations

Under the California Fish and Game Code, tree squirrels are classified as game animals and their management is much more complicated than for ground squirrels.

First and foremost, it is illegal to use poison baits in the management of ANY species of tree squirrel in California, but their use is permitted for California ground squirrel

Table 1. Distinguishing features and management restrictions for some California squirrel species.

Species	Native/ Introduced	Distinguishing feature	Measurements	Legislation
Douglas squirrel	Native	Often actively vocal, tufted ears	Length: 10 – 14 inches from nose to tip of tail. Weight: 0.3 – 0.7 lbs	Can be shot with restrictions. No depredation permit available.
Western gray squirrel	Native	Large body, bushy tail	Length: 24 inches from nose to tip of tail. Weight: 1.1 – 2.1 lbs (adults)	Can be shot with restrictions. Depredation permit available with proof of damage.
Eastern gray squirrel	Introduced	Narrow tail, short ears	Length: 16 – 20 inches from nose to tip of tail. Weight: 1.25 – 1.75 lbs	Can be shot with restrictions. Depredation permit available with proof of damage.
Eastern fox squirrel	Introduced	Large body, distinct yellow-brown to orange coat	Length: 18 – 27 inches from nose to tip of tail. Weight: 1.75 – 2.25 lbs	Can be taken using any legal means during any time of the year.
California ground squirrel	Native	Ground use and retreating to ground burrow systems	Length: 18 – 29 inches from nose to tip of tail. Weight: 0.6 – 1.6 lbs	Can be taken using any legal means during any time of the year.

management. If both ground squirrels and tree squirrels are causing damage at the same location and are in need of management, baiting would not be a recommended option, as it would be almost impossible to exclude tree squirrels from accessing poison baits.

It is also important to be aware of endangered species in your area. If you are in the range of the San Joaquin antelope squirrel (*Ammospermophilus nelsoni*) or the Mohave ground squirrel (*Xerospermophilus mohavensis*), you should not consider a baiting strategy for California ground squirrel. Instead, consider other, non-toxic options described in the UC IPM Pest Notes: *Ground Squirrel*.

Eastern Fox Squirrel Management

Of the four tree squirrels, the eastern fox squirrel is considered to be the most serious pest to homes and gardens in urban and suburban environments. Fox squirrels that are found to be injuring growing crops or other property may be taken (killed) at any time or in any manner in accordance with the California Fish and Game Code and Regulations (henceforth called “the Code”). **Only eastern fox squirrels can be killed without a hunting license or permit.**

Several types of kill traps are useful for fox squirrel removal, but they must be set in a way that will not accidentally trap nontarget animals. Live-catch cage traps are also available, but once caught, the squirrel must be euthanized, presenting a problem for some people. Because releasing captured wildlife of any species off site without a permit is illegal, live-catch traps are not recommended.

Gray Squirrel Management

If land or property is being damaged or destroyed, or is in danger of being damaged or destroyed by a western gray squirrel or an eastern gray squirrel, then the owner or tenant of that land or property may apply to the CDFW for a depredation permit which will allow for the killing of the squirrel. The CDFW will designate the type of trap to be used to ensure the most humane method is used to trap gray squirrels.

Under the terms of the depredation permit, it may be required to release trapped western gray squirrels in parks or other non-agricultural areas. Remember, it is not permitted to use any type of poison to control tree squirrels, including western gray squirrels, even when in the possession of a depredation permit.

Other Considerations

In addition, any trapper for hire must possess a valid trapping license from the CDFW when trapping any squirrel species for profitable gains. Also, a valid hunting license is required for sport hunting of tree squirrels. A hunting license is not required, however, if a landowner legally shoots an eastern fox squirrel causing property damage, even if done so outside the hunting season.

While an uncommon occurrence, tree squirrels can be associated with pathogens that can potentially be harmful to humans. Under the Code, tree squirrels that are associated

with dangerous disease outbreaks may be taken by appointed organizations. See section 4011 for a list of organizations to contact in such a case.

“Cracking” the Fish and Game Code for Tree Squirrel Management

The CDFW’s Fish and Game Code is certainly very difficult to navigate. Here are a few things to remember that will help you “crack” the code:

- Tree squirrels are considered as resident small game. When the Code refers to “tree squirrels” it means eastern and western gray squirrels, eastern fox squirrels, and the Douglas squirrel. Details of the hunting areas and season for tree squirrels can be found in chapter 2, section 307. Be aware of differences in zones, as well as counties, and for differences between general hunting and taking using falconry and bow and arrow.
- The regulations that govern take of tree squirrels can be found in section 311.
- In the Code, reference to “gray squirrels” means both eastern and western gray squirrels. It may seem unusual that the regulations for the management of a native and an invasive species are the same; but that is what the Code says, and it is important to follow it. Information on depredation permits for eastern and western gray squirrels can be found in section 4181.



Figure 5. California ground squirrel.

Ground Squirrel Management

Ground squirrels, on the other hand, are classified as non-game mammals. They can be controlled in any legal manner if they are injuring growing crops or other property (Figure 6). There are several options for their control: habitat modification, trapping, and the use of poison baits and fumigants.

California ground squirrels can harbor diseases harmful to humans. One of the most commonly transmitted diseases from California ground squirrels to humans is bubonic plague, a flea-borne disease transmitted to humans from flea bites. If you find unusual numbers of dead squirrels or other rodents for no apparent reason, notify public health officials.



Figure 6. Ground squirrel burrow.

It is never a good idea to handle dead rodents but it is especially important not to handle, or be in the vicinity of large numbers of dead ground squirrels.

Further Reading

For more information on tree squirrel management, consult the UC IPM *Tree Squirrels* Pest Notes: <http://www.ipm.ucanr.edu/PMG/PESTNOTES/pn74122.html> and the [California Department of Fish and Game Code](#).

For information on ground squirrel management, refer to the UC IPM *Ground Squirrels* Pest Notes: <http://www.ipm.ucanr.edu/PMG/PESTNOTES/pn7438.html>.

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Pest Notes are peer-reviewed scientific publications covering specific pests or pest management topics, directed at California's home and landscape audiences. Pest Notes are available online and in a downloadable PDF version.

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This seasonal checklist guides users through the activities they need to prevent or manage pests throughout the year in their regions. Prevention is an important component of integrated pest management, and the checklist delivers prevention practices by providing an easy means to know what to do and when.

The checklist is linked to diagnostic aids, information on specific landscape pests, and other helpful resources. Users will soon be able to subscribe to receive monthly emails alerting them to what pests and activities to anticipate in their regions. The checklist currently includes four regions in the state, with more to be added in coming years.

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