

# Pest Information Series

## Tree Squirrels

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### Identification

There are two species of tree squirrels that are native to California. The tree squirrels that are most likely to be encountered in Los Angeles County are the Western Gray Squirrel and the Eastern Fox Squirrel.

The Western gray squirrel is about 22 inches in length with a large bushy tail edged in white. The coat can run from a "salt and pepper" to a silvery gray above to white below. They weight in at between 1.5-2 pounds and lack any stipes, spotting, or flecking common to ground squirrels. Fox squirrels are the largest of the North American squirrels and can grow to 29 inches in total length, has a somewhat square head and weights in at 3 pounds. They can vary greatly in color, but commonly has a light brown coat above to a reddish or orange underside. As is the case with all true tree squirrels both of these species also lack internal cheek pouches and when frightened climb trees to take shelter.

### Biology and Behavior

Tree squirrels as their name implies are primarily found in trees, but can spend a considerable amount of time foraging on the ground as well. All are only active during the day, and do not hibernate. Tree squirrels like to nest in the cavities of trees, often enlarging the old holes of woodpeckers or flickers. They may also construct nests of twigs, shredded bark and leaves in a crotch or on a large tree branch.

Western gray squirrels produce one litter per year consisting of three to five young usually born between February and June. The gestation period is 44 days and young remain in the nest for six weeks before venturing out on their own. Western gray squirrels have lived as long as 11 years in captivity. Its main predators are coyote, fox, owl, large hawks, and in the higher mountain areas martens. Western gray squirrel eat primarily acorns and supplement their diet with pine and other nuts, mushrooms, tender twigs and shoots, and grain. In the autumn western gray squirrels spend a considerable amount of time burying single acorns in holes three to four inches deep.

Eastern fox squirrels bare their young between January and April and between July and September. Yearling females have one litter and older females have two. Gestation period and litter size is the same as for western gray squirrels. Young are weaned at two to three months old. Eastern fox squirrels have been known to live for six years in the wild and as long as ten years in captivity. The Eastern fox squirrels diet consists of bird eggs, insects, various nuts, acorns, seeds, fungi, bulbs, roots and cambium tissue. Fox squirrels, also, bury nuts singly.

## Damage

Tree squirrels damage green and ripe walnuts, almonds, oranges, avocados, apples, strawberries, tomatoes, and grains. Telephone and electrical lines are sometimes gnawed and they also chew on buildings or invade attics through knotholes or uncovered roof vents. Eastern fox squirrels can become some what aggressive and antagonize dogs and may frighten the elderly.

## Legal Status

**Western gray squirrels** are classified as game mammals under the Fish and Game Code and can be controlled only as provided by the hunting regulations or if causing damage to crops or property under special permit (see " trapping" section).

**Eastern fox squirrels** are also classified as game mammals, but if they are injuring crops or property can be controlled at any time or in any manner that is legal and humane by the owner or tenant of the property, except that **poisons may not be used.**

## Diseases

Tree squirrels may carry rabies, toxoplasmosis, sylvatic (bubonic) plague, western encephalitis, encephalomyocarditis, murine typhus, tularemia, endemic relapsing fever, and ringworm, all of which are transmissible to humans. Although these animals can carry the plague, since they live more solitary lives than their ground living relatives, they are not generally controlled for plague suppression.

## Management

Homeowner options are limited when it comes to the control of tree squirrels. It is critical that before you start any control program to identify which species of squirrel that is damaging your property. In some cases, it may actually be roof rats that are causing the damage or a combination of both. Roof rats and tree squirrels. In either case, a little "detective" work can save you time, money, give more successful results and keep you out of possible legal problems. **If you have not done so already, please look at the "legal status" section of this bulletin before you read the rest of this section.**

It is also important to remember that no one method may eliminate the pest problem, the best control plans should always use a combination of techniques. One final consideration is that unless major changes occur to the existing environment (for example, a vacant lot is developed into a shopping center) the pest problem will eventually return, so any pest management plan must include a regular monitoring component.

The strategy that will work best for your particular situation will depend on several factors. One will be the size of the area to be managed and the amount of animals that are living there. Other considerations are the amount of damage you are willing to tolerate and the rate that re-infestation is likely to occur. For instance, if you live next to the foothills or a large vacant lot, your likelihood of eventual re-infestation is reasonably high. In situations where constant maintenance may be required over a large area, a contract with a licenced pest control operator or county agricultural commissioners office may be a cost effective alternative to doing the work yourself. Further advice about your particular squirrel control problem can be obtained by calling the Pest Management

Division of the LA County Agricultural Commissioners/Weights and Measures Department at (626) 575-5462.

## Trapping

Trapping is an effective way to control tree squirrels. However, this also will place you in close contact with rodents and their diseases so you should use caution if you use this technique. There are two basic types of traps that are generally used for this type of control work, the cage or live trap and the box type.

Live traps are effective, but present the problems of how to humanely kill the live animal and where to dispose of them. It is also illegal to abandon any animal (Penal Code Section 597s) and because they have the potential to carry diseases and are agricultural pests cannot be released into the wild without written permission of the California Department of Fish and Game ( Fish and Game Code Section 671.6a (2), (3) ).

Box traps are easy to use and work best if you pre bait them without setting them for a few days to get the squirrels used to feeding from them. They work best if placed on level ground near trees or other areas squirrels are actively foraging. Traps should be secured in some way such as with a stake and a length of wire or rope to prevent a predator from finding a dead animal in the trap and taking off with it.

Traps can be placed in trees as well as on the ground. If trees are used, it is important that the traps be secured or fastened in some way to the tree otherwise the animals may not enter the unstable trap or it will misfire and the animals will become trap shy.

Regular flat rat traps have also been used for tree squirrel control, but if used the bait must be secured to the trigger and if placed in such a way that birds have easy access or entry they may be trapped as well. These traps can be nailed to fences, tree limbs or roof tops. An added bonus to tree squirrel trapping is that any rats that maybe in the area may also be attracted to the baits and controlled at the same time.

The baits that are attractive to tree squirrels include walnuts, almonds, pecans, peanuts, orange slices and melon rinds.

Box traps can be purchased from local garden centers, trapping supply catalogs or from the Agricultural Commissioners office at cost. A multiple catch trap can be

made by removing the back panels from two traps and securing them to a board back to back leaving a small open space between them as a baiting area and then placing a small strip of hardware cloth to connect the traps and protect the bait.

Box traps are "set" by depressing the spring on the top of the trap flat and placing the cross bar over the top then engaging the trigger. By moving the trigger up or down the cross bar you can adjust the sensitivity or how easily the trigger will set off the trap. Dead rodents should be removed from the trap using gloves and by reaching through an inverted plastic bag. It may take several days for squirrels to become accustomed to the trap and enter it, so don't be discouraged if you aren't successful the first time you place traps. If, however, a week or more has gone by without catching or if you suddenly stop catching and still see squirrels you may need to relocate your trap, change bait or try some other method.

Trapping for **Western grey squirrels** can only be done under permit issued by the California Department of Fish and Game. In order to apply for a permit, the owner or tenant of the land must prove that their property is being damaged or is in danger of being damaged by grey squirrels. Once the Department is satisfied that such damage has or will occur the Department will issue a revokable permit and it will specify the manner in which the animals can be controlled. If a trapping permit is issued it will specify the type of trap to be used and may require that the squirrels be relocated in parks or other non agricultural areas.

## Toxicants

There are no registered poisons available for use against tree squirrels. It is illegal to use any pesticide for any use that is not specified on the label. To do so is a violation of federal and state law and may injure pets and wildlife.

## Natural Control

Tree squirrels have a number of natural enemies that are mentioned in this bulletin under the "Biology and Behavior" section that feed on and place pressures on squirrel populations. However, experience has shown that in environments that have been altered by humans, natural predation does not control the squirrel population to levels that will prevent unacceptably high damage to property.

## Exclusion

Squirrels are good climbers and can be difficult to exclude. Hardware cloth and sheet metal can be used to close entrances into buildings. Specimen trees and bird feeders can be protected by wrapping them in sheet metal or use of squirrel collars.

## Repellents

There are some repellents registered for use on tree squirrels, but their effectiveness remains in question.

## Monitoring

Once you have controlled your squirrel problem you must routinely check on the area to see if re-invasion has occurred. If not checked regularly, squirrels can re-invade your property and do a lot of damage in a short period of time.

## Warning On The Use Of Chemicals

Pesticides are poisons. Always read and follow all precautions and safety recommendations given on the container label. Store all chemicals in the original labeled containers in a locked cabinet or shed, away from food or feeds, and out of reach of children, unauthorized persons, pets and livestock.