



# GARDEN INFORMATION SERIES



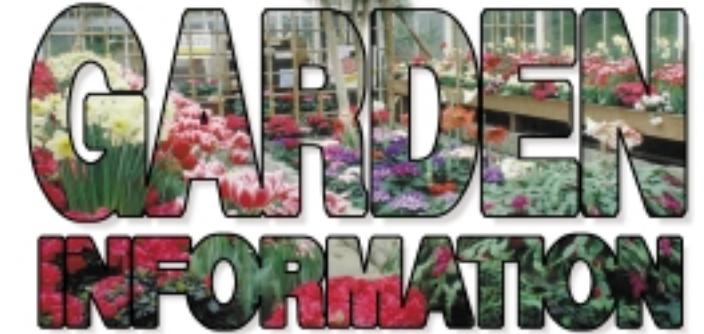
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## VERTEBRATE PESTS OF THE GARDEN



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Pests in the garden are not always insects, snails or slugs. Small mammals and birds can also cause problems for the vegetable garden or flower bed. Some mammals, such as gophers and rabbits, will eat plants but may also become nuisances by digging holes or burrows. Rats and mice cause less damage to plants but might be a health hazard due to the diseases that they may carry. There are other mammals one might find around the garden, such as skunks, opossums, and cats and dogs, but these are more of a nuisance, rather than major pests, to gardeners. Birds can also be garden pests. They can dig up and eat newly planted seeds or transplants and they also harvest fruits and berries just before you do. This brochure will help you to manage gophers, ground squirrels, rabbits and, birds in your garden.

The first step in managing a pest is to identify it, usually by actually observing the animal, by recognizing the type of injury it causes, or by other signs of the animal. The second step is to decide when the damage becomes sufficient for you to try to control the pest. For example, a rabbit that eats a couple of leaves of lettuce a day might not be a problem but a family of rabbits eating your entire crop would be. Finally, you must consider what options you have to reduce damage. These include:

- Exclusion - keeping the animal out either by fencing or netting.
- Removal - trapping the animal.

- Poisoning - toxic baits.
- Repellents - either by taste or smell.
- Scare tactics - lights, movements, sounds, foil, plastic owls, and motion activated water sprays.
- Habitat modifications - removing brush piles and weeds so the animal cannot hide or rest.

## GOPHERS

**Damage:** Pocket gophers feed on plants both above and below ground. Gophers also gnaw and damage plastic water lines and lawn sprinkler systems.

**Signs:** Mounds of fresh, fine soil, usually in a crescent shape, are the most noticeable signs of gophers.

**Management:**

**Trapping-** Follow the directions on the trap or consult with a garden professional before using. Baits are not really needed but if desired, lettuce, carrots, apples, or alfalfa greens can be used as bait. Attach a string or wire to the traps and tie it to a stake so you can easily retrieve the traps. Exclude light from the burrow by covering the opening with dirt clods, sod, cardboard, or some other material. If a gopher is not caught within three days, place the traps in a different location.

**Toxic Baits-** Place pocket gopher bait in the main underground tunnel, not the lateral tunnels. This method is not recommended if you have pests that might find the poisoned gophers and eat them since they might be poisoned also.

**Exclusion-** Burying 1/2- or 3/4-inch mesh hardware cloth or poultry wire two feet deep can keep out gophers if the entire perimeter of the garden is surrounded. It is also helpful if the fence extends one foot high. Wire baskets can be constructed or purchased to protect individual plants. To pro-

tect sprinkler lines, six to eight inches of coarse gravel one inch diameter or more around underground sprinkler lines might discourage gophers.

**Flooding-** Flooding will usually not drown gophers but can sometimes force them from their burrows.

**Fumigation-** This method is usually not very effective because gophers quickly seal off their burrow when they detect smoke or gas. However, it might work in small sections.

**Repellents-** Plants such as gopher purge (*Euphorbia lathyris*), castor bean, and garlic have been suggested as repellents but these claims have not been substantiated by research.

**Frightening devices-** Vibrating stakes, ultrasonic devices, and wind-powered pinwheels have not proven effective.

## GROUND SQUIRRELS

**Damage:** Ground squirrels feed on shrub and tree roots and bark, twigs, and buds causing extensive plant injury. They also burrow tunnels, which can cause foot and leg injury to the unaware gardener as well as weaken slopes. Ground squirrels will gnaw on plastic sprinkler heads and irrigation lines.

**Signs:** The ground squirrel is 9 to 11 inches long exclusive of its tail. Its semi-bushy tail adds another five to nine inches. The fur is brownish gray. Ground squirrels live in burrows. With openings about four to eight inches wide, burrows can be 5 to 30 feet long or more and two to four feet underground. Ground squirrels are most active during mid-morning and late afternoon, especially on warm, sunny days. During winter months most ground

squirrels hibernate, but some young might remain active.

**Management:**

**Habitat modification:** Remove brush piles and debris to make an area less desirable to ground squirrels. They can reinvade a site by moving into vacant burrows. Destroy old burrows by deep ripping or digging them to at least 20 inches deep. Large areas will probably require a tractor and ripping bar, a process probably best left for a contractor. Small areas can be hand dug to destroy burrows. Simply filling in the burrows with soil does not prevent reinvasion since ground squirrels easily find and reopen old burrows.

**Trapping:** Traps are practical for control when squirrel numbers are low to moderate. However live-catch traps present the problem of how to dispose of the live animals.

Because ground squirrels carry diseases and are agricultural pests, the California Fish and Game Code specifies that it is illegal to release them elsewhere.

**Toxic Baits-** Anticoagulant baits can be used for controlling ground squirrels. Anticoagulants must be consumed in several feedings over a period of five or more consecutive days. It is best to use bait boxes (small boxes that the squirrel must enter to eat the bait) or by repeated spot baiting. Place sufficient bait in box for repeated feedings. Bait boxes are preferred around homes and other areas where children and pets are present.

**Fumigation-** Fumigate in spring when soil moisture is high. Check with your local nursery or licensed pest control contractor for suitable materials.

**Frightening devices-** There are no effective frightening devices for ground squirrels.

## RABBITS

**Damage:** Rabbits will eat nearly anything green, including grasses, leaves, shoots, and flowers. In general, rabbits will start to feed in the evening and feed into the next morning. Rabbits can cause damage any time of the year.

**Signs:** One sign of rabbits is young plants chewed to the ground or smoothly cut leaves or stems. Another good sign of rabbits is their circular fecal droppings or pellets about 1/4-inch diameter.

**Management:**

**Exclusion-** The most effective long-term solution is excluding rabbits from the garden by surrounding the area with a 3-foot high fence of 3/4 - 1-inch mesh. Bury the fence 4-12 inches deep. Individual plants and trees can be protected with wire mesh cylinders. If you cannot bury the fencing, the bottom must be staked or kept down some other way to prevent rabbits from going under it. Individual plants can be protected in a similar manner by constructing wire cylinders from poultry netting (chicken wire) around the tree trunks.

**Repellents-** Chemical repellents might reduce or prevent rabbit damage by deterring them by smell or taste. Effectiveness of these repellents is variable. Reapply them frequently, especially after a rain, heavy dew, or sprinkler irrigation, or when plants produce succulent new growth.

Always follow the directions printed on the repellent's label. Pay careful attention to what types of plants that they can be safely applied to since some cannot be used on food crops.

**Habitat Management-** Removing places where rabbits hide can

effectively deter rabbits from moving into an area. However, removing hiding places might not be possible in areas surrounded by fields or other natural areas.

**Frightening devices-** Noise-makers, flashing lights, plastic snakes, and owls are generally not effective since rabbits often acclimate to them. Ultrasonic units, which emit high-pitched sound waves to repel rabbits, are not effective either.

## BIRDS

**Damage:** Birds cause damage in gardens by eating newly planted seeds, pulling up seedlings, and eating fruit.

**Signs:** Flocks of birds might be found in the garden shortly after planting seeds, or fruit has ragged holes pecked in it. Often the birds will injure fruits just as they are starting to ripen.

**Management:**

**Exclusion-** Keep birds off of newly planted seed or transplants with row covers. Larger vegetable plants and fruit trees can be covered with plastic bird netting to protect the ripening crop.

**Repellents-** Bird repellents are usually used for keeping geese and other water birds away from pools and ponds. These are not effective for deterring birds from gardens.

**Frightening devices-** Reflective tape and fluttering objects might help temporarily but will lose effectiveness as birds become accustomed to them.

Ask your nursery or garden center professional for additional information and assistance about controlling these pests.

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