

Rat and Mouse: Prevention and Control



*San Mateo County
Mosquito and Vector Control*

*"An Independent Special
District Working for You!"*

**1351 Rollins Road
Burlingame, CA 94010
Tel: 650.344.8592
Fax: 650.344.3843**

General Information

Rats and mice (See Fig. 3) have been associated with people for hundreds of years. They live on our food and waste products and inhabit our buildings. Rodents can cause serious damage to structures, equipment, furniture, and utilities.

In addition to causing damage to our surroundings, rodents have the potential to spread a wide variety of diseases, including Leptospirosis, Trichinosis, Hantavirus, Rickettsial diseases, and bacterial food poisoning to name a few.

Rodent control is effectively accomplished by comprehensive rodent proofing, proper trapping and environmental management. Look for signs of rat activity. The district can assist homeowners with rodent inspection services.

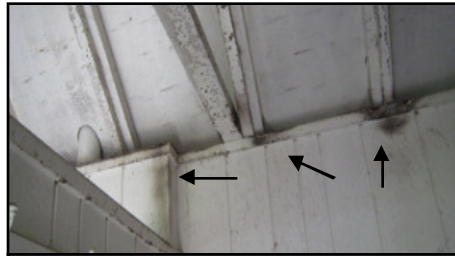


Fig. 1. Rats leave rub marks along routes of travel (runways)

Signs of Rodent Activity

- Rub and grease marks (See Fig. 1)
- Live or dead rodents
- Fecal droppings (See Fig. 2)
- Gnawing damage
- Runways
- Urine stains
- Tracks
- Burrows
- Rodent odors
- Rodent sounds



Fig. 2. Fresh rat droppings

ROOF RAT

Rattus rattus

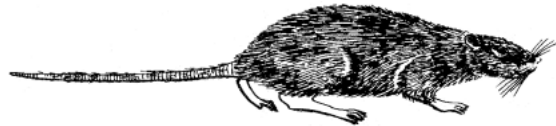


pointed
average length 1/2" (13mm)

Slender, this rat has a tail that is longer than the body. Mostly active at night, the roof rat harbors in ivy, dense vegetation and will readily enter buildings. An agile climber, this rat will travel along fences and power lines. Roof rats will eat fruit, nuts, pet food other residential sources of food.

NORWAY RAT

Rattus norvegicus



blunt
average length 3/4" (19mm)

Underground burrow inhabitants, Norway rats are typically found in creek banks, the shoreline and also subterranean sewer systems. Slightly larger than the roof rat, the Norway rat's ears and eyes are smaller and the tail is shorter. This species will feed on garbage and other residential sources of food.

HOUSE MOUSE

Mus musculus



pointed
average length 1/4" (6mm)

Smaller overall, the house mouse averages 2 to 3 1/2 inches in length with the tail measuring 3 to 4 inches long. The average weight is 5/8 to 1 ounce. Typically found within houses, this species feeds on any accessible food.

Fig. 3. Rodent species and their droppings

Basic Rodent Proofing Measures

Substandard repairs and remodeling can alter a structure's rodent proofing. Repairs for rodent proofing are usually very simple and cost very little. Periodic inspection of your property should be conducted to insure that proper rodent proofing is still intact. A rat will enter a hole the size of a half dollar. A mouse will enter a hole the size of a nickel.

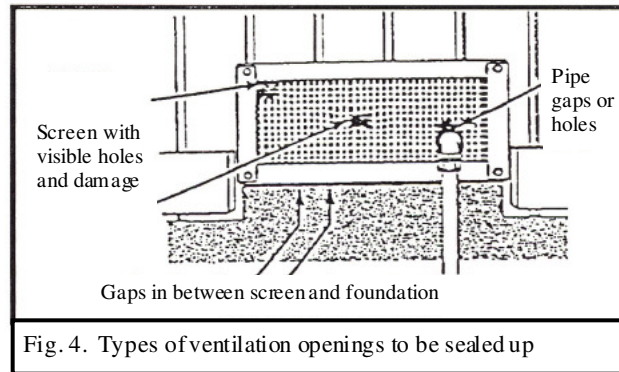


Fig. 4. Types of ventilation openings to be sealed up

1. Subfloor space ventilation openings must be without holes and gaps. (See Fig. 4)
2. Subfloor crawl space access door must be free of gaps.
3. At the junction of roof pitches, the overhanging roof may form a triangular recess which allows rat entry at the very back. Most of these areas are inaccessible.

1/4 inch hardware cloth, cement fill, sheet metal are all excellent materials to use for sealing up gaps and holes. (See Fig. 5)

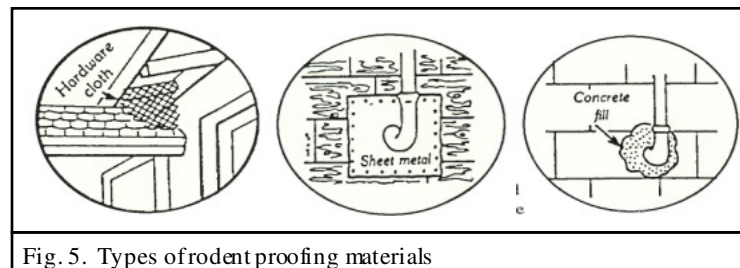


Fig. 5. Types of rodent proofing materials

Trapping

Trapping rodents is a perfectly acceptable method of control. It should be done *after* rodent proofing is completed. Trapping is especially desirable when rodenticides cannot be used near food, small children, or where domestic animals or livestock are present. Traps should be used indoors to prevent the serious odor and fly problems that can occur when poisoned rodents die in walls.

1. Before any trapping, first determine where rodents are entering structures or where rat activity is occurring.
2. Bait selection is important for trapping success. Peanut butter, nuts, bacon, pieces of apple, and moistened oatmeal are effective baits.
3. Place traps perpendicular to runways along fence tops and next to walls. Correct placement of snap traps is crucial to their effectiveness.
4. Pre-baiting traps is an important step. Rats tend to avoid new objects. Pre-baiting involves placing baited traps without setting them. This step allows rats and mice to become familiar with the traps. Place pre-baited traps in areas of rat activity for a few days. (See Fig. 6)

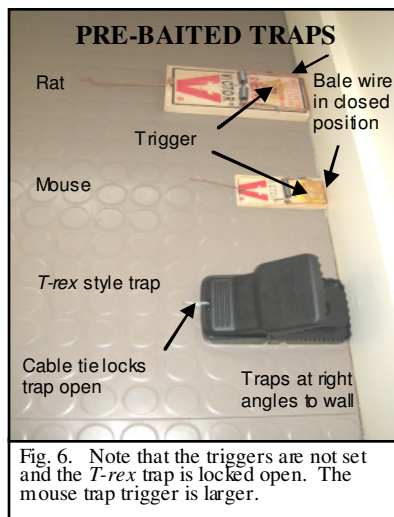
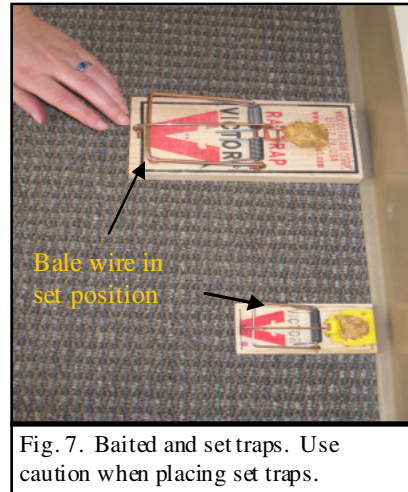


Fig. 6. Note that the triggers are not set and the T-rex trap is locked open. The mouse trap trigger is larger.

5. After a few days, set baited traps perpendicular (at right angles) to active rat runways where droppings are seen. (See Fig. 7) Follow manufacturer's label instructions for setting traps. Before setting, securely attach bait to the trigger.



6. When the number of animals captured per day declines, check for fresh droppings. If droppings are still observed, the rodents may be avoiding the traps. Change trap location to new area of rat activity.

Repeat the cycle of pre-baiting and trapping until no new signs of rat activity are seen.

7. Some rodents can carry Hantavirus or other diseases. Therefore, when cleaning rodent areas, do not stir up dust by sweeping and vacuuming droppings, urine, or nesting material.

Using rubber or latex gloves, apply a disinfectant or a 10% bleach solution onto dead rodents and droppings. Clean up with paper towels. Double-bag and dispose of waste in a garbage can with a tight-fitting lid. Afterward, thoroughly wash hands with soap and water.

Information about rodents and disease can be obtained from the district laboratory at (650) 344-8592.

Environmental Management

Good environmental management practices supplemented by the wise use of rodenticides and proper trapping are the most effective approaches to rodent control. Environmental sanitation and good housekeeping are the first steps in a successful roof rat control program.

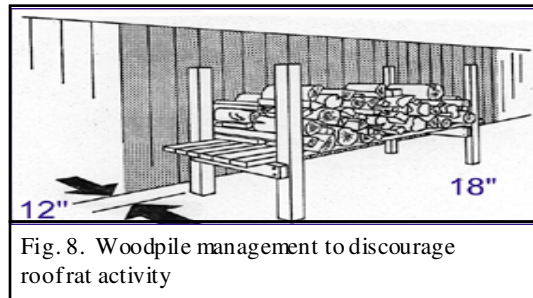
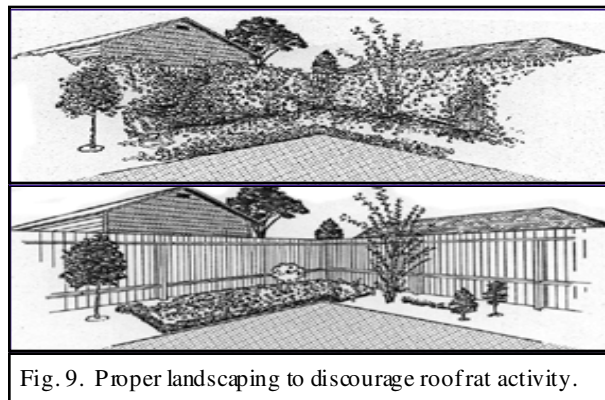


Fig. 8. Woodpile management to discourage roofrat activity

- Harvest all fruit as soon as it ripens
- Pick up all fallen fruit
- Store wood and lumber piles 18 inches above the ground and 12 inches away from walls (See Fig. 8)
- Never leave pet food outside overnight; store pet food in metal containers
- Keep all vegetation well trimmed and away from roofs, walls, fences, poles and trees (See Fig. 9)
- These plant species provide harborage and should be avoided: Algerian ivy, blackberry, bamboo, Pampas grass, Bougainvillea, Oleander, and Italian Cypress



BEFORE

AFTER

Fig. 9. Proper landscaping to discourage roofrat activity.

Chemical Control

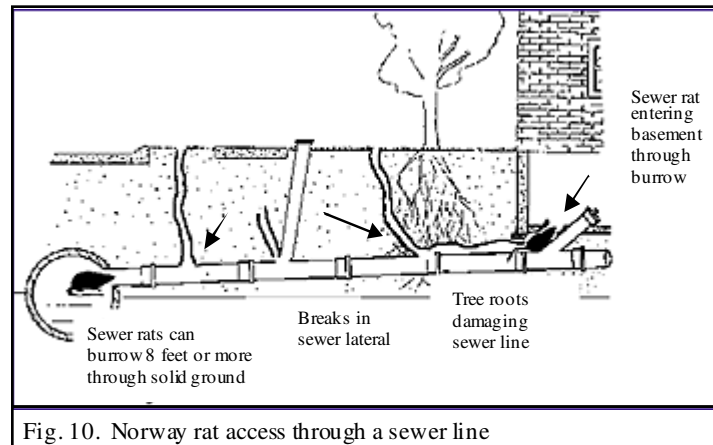
Most rodenticides presently available for rat control are anticoagulants (stops blood from clotting) that only require a *single dose feeding* to reach a lethal level in the rat's blood. Commercial brand rodenticides are available at nurseries and hardware stores. The manufacturer's label precautions and instructions should be strictly followed. Always use rodenticides in child-proof bait stations and never use these products inside the house.



These products are very toxic to people and pets!

How Norway Rats Enter the Home

Norway (sewer) rats have the ability to enter the home through the sewer lines. They find breaks in drain pipes caused by faulty joints, poor construction or by tree roots. (See Fig. 10). Norway rats will burrow through the ground and will emerge into yards, under sidewalks, driveways, and enter buildings.



Norway rat control is also achieved by eliminating water, food and harborage sources. Although this species primarily nests in underground burrows, Norway rats may also establish nests in Algerian ivy, rubbish piles, utility sheds, storage boxes, wood piles and heavy shrubbery.

Guidelines for Using Professional Rodent Control Services

If you choose to use professional rodent control services, there is certain information that the private pest control operator (PCO) should provide to you. This will allow you to make a more informed decision.

1. The PCO should make a thorough inspection of your premises and provide a written report which:
 - Identifies the species of rodent causing the infestation
 - Locates or describes entrances and rat-proofing needs
 - Lists harborage and food sources observed

2. The PCO should give attention to rodent proofing needs by:
 - Bidding or contracting for needed work *or*
 - Providing specifications and requirements for do-it-yourself or other means of repair
 - Coordinating rodent exclusion with control measures

3. The PCO should also:
 - Stress trapping or other capture techniques for indoor infestations
 - If needed, provide rat parasite (fleas and mites) control before or concurrently with rodent control activities

What Else Can You Do?

Chances are if you are having rodent problems, your neighbors are having problems too!

You can host a block party in your neighborhood. An effective way to get rid of rats in your block is to work together with your neighbors.

As a group, you can make a commitment to make your neighborhood a place where rats are discouraged from establishing.



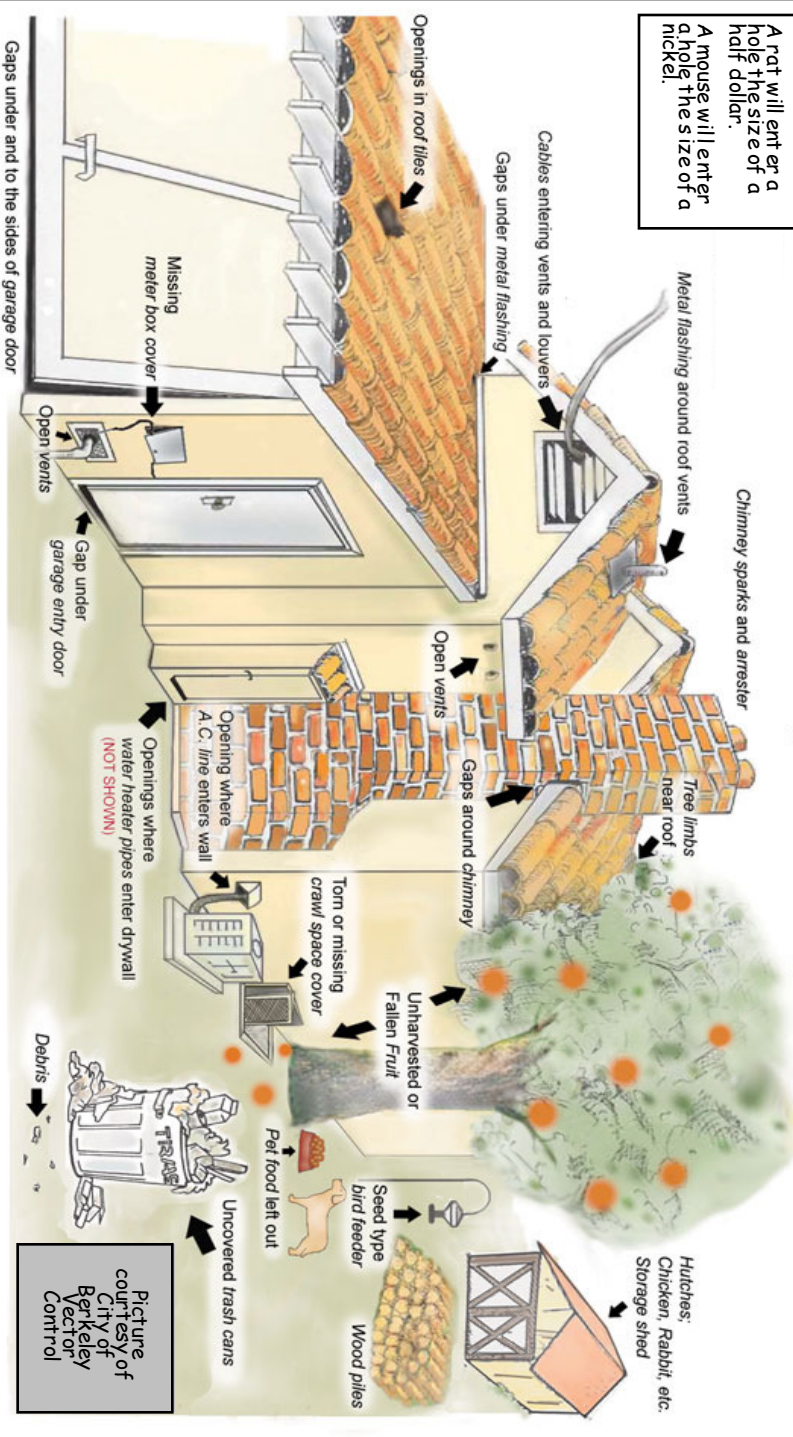
Once you are organized to get rid of roof rats on your block, you will find the same organization can be useful for other block projects. A collaborative and cooperative approach works best.

If you would like to schedule a presentation or request additional brochures for your group, please contact the district laboratory at (650) 344-8592.



Common Rodent Entry & Harborage Locations

Note:
 A rat will enter a hole the size of a half dollar.
 A mouse will enter a hole the size of a nickel.



The District Program

San Mateo County Mosquito and Vector Control is an independent, special district funded by a property tax voted in by individual cities.

We provide the following services for district residents:

Mosquito Control
Yellow jacket Control
Rodent Inspection
Insect and Tick Identification
Vector-borne Disease Surveillance
Community Education

Remember . . .

Rats and mice will seek out environments where food, water and shelter are found. A successful control program seeks to control these factors.



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