

MuseumPests.net

A Product of the Integrated Pest Management Working Group

Roof Rat *Rattus rattus*



GENERAL INFORMATION

The roof rat, also known as the black rat, ship rat, and house rat, is a native of South or Southeast Asia. It became firmly established and widespread throughout Europe during the Middle Ages, reached the New World with the earliest European explorers, and is currently distributed around the globe. Somewhat restricted to relatively warm coastal regions, in the United States it can be found from the southern Mid-Atlantic states through Florida, westward across the Deep South and into Texas. It is also found along the entire West Coast and in Hawaii and has recently been reported in more inland areas. The roof rat is a much more agile climber than the Norway rat and prefers elevated areas such as trees, vines, fences, roofs, and attics. In addition to being a museum, agricultural, stored product, home, and ecological pest, the species is a major vector of diseases, most notoriously the bubonic plague.

SIGNS OF INFESTATION

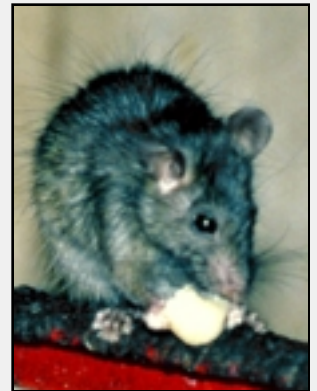
Indications of a roof rat infestation may be hard to differentiate from those of the Norway rat. Rat damage in general will likely appear as partially eaten food sources, torn substances taken for the nest, or gnawing damage on inedible, immovable objects. Rat gnawing marks measure about 3.5 to 4.0 mm wide. Other typical signs of rat infestation such as feces, urine, burrows, tracks, grease marks, and repeatedly used runways, may be less noticeable in roof rat infestations due to their climbing abilities and preference for overhead spaces. Roof rat feces are typically smaller (avg. 13 mm) and more curved and pointed at the ends than those of the Norway rat. Rats are typically active at night, so an after hours inspection with a flashlight may be useful to confirm suspected infestations, pinpoint access points, and determine



DIAGNOSTIC MORPHOLOGY

Adults:

- Medium sized rats measuring 13 to 18 inches (35 to 45 cm) and weighing 5 to 9 oz (150 to 250 g)
- Black or brown back; white, cream or gray belly
- Compared to the Norway rat, the roof rat has a generally sleeker body with a narrower snout, bigger ears, and longer tail



Immature Stage:

- The roof rat is born unpigmented with a relatively short tail, develops fur in about 8 days, opens its eyes after 10 to 16 days, first leaves the nest after 17 to 23 days, and achieves sexual maturity in about 3

ideal locations to set traps. It is possible for roof rats to infest the roof, attic, and/or upper levels of a structure, while Norway rats simultaneously infest the basement and/or lower levels of the same structure.

FOOD SOURCES

Roof rats enjoy a wide variety of fruits and nuts and are thus a major agricultural pest in many areas. However, they are also opportunistic feeders and will eat just about anything including the organic materials in museum collections, improperly managed garbage, ornamental and native vegetation, and small animals. Roof rats will often ignore new food sources introduced into their environment, especially if familiar food sources remain readily available. This neophobia may frustrate efforts at trapping or baiting. Rats typically consume 1 to 2 ounces of water daily.

LIFE CYCLE

Roof rats produce litters of 6 to 20, with a gestation period of 20 to 24 days. The newly born are completely reliant on their mother and remain in the nest for the first 17 to 23 days. They reach sexual maturity in about 3 months and typically live no longer than one year. Depending upon food supply and climate, they may breed year round with peaks during the spring and fall. A typical female may produce 3 to 6 litters during a lifetime.

CONTROL & TREATMENT

Non-chemical roof rat control and treatment consists of rat proofing structures, good housekeeping and trapping.

When rat proofing a structure, keep in mind that roof rats are capable of squeezing through holes only 3/4 inch in diameter; are excellent climbers and jumpers; will readily gnaw through wood, plastic, and some metals; and can burrow beneath ground level or shallow obstructions. Seal off all gaps in the structure such as those around doors and pipes with an appropriate material such as metal or concrete. Drain pipes should be covered by metal lids with small perforations. Circular metal rat guards should be installed around vertical wires and pipes to prevent rats from climbing them. Remove any vines growing on exterior walls and prune back overhanging or nearby tree limbs, as these may provide aerial access to the structure.

Good housekeeping procedures should be put in place both outside and inside the building. Refuse and thick vegetation should be removed from the building's perimeter. Clean, properly functioning lidded dumpsters are essential to denying rats' access to a potential food source. Indoors, all areas including out of sight spaces such as crawlspaces, drop ceilings and attics should be kept clean. Trashcans should be lidded. All cabinetry units and stored items should be raised off the floor and located away from walls.

Simple rat snap traps are effective and widely available, however roof rats may be more challenging to trap than Norway rats. Set traps in attics and along rafters where signs of rat activity have been located. Traps can be nailed into place or secured using elastic cords, Velcro, or wire, on ceiling beams, narrow ledges, or pipes. Try baiting traps with roof rats' natural food sources such as fruits, nuts, or snails.

Fact Sheet: Roof Rat

Photo Credits:

Upper Right

Laurent KB. Available from Encyclopedia of Life at http://eol.org/data_objects/13478247

Lower Left

Kilessan. Available from Encyclopedia of Life at http://eol.org/data_objects/10067159