

## Roof Rats in Arcadia

By Andy Gough, Arcadia Resident

Data Scientist – MBA – Electrical Engineer

The [roof rat](#) (*Rattus rattus*) were first identified in the Arcadia area in 2002. They are not native to Arizona and were likely inadvertently introduced from another state. However, now that they are established here, they are never going away, so *continuous control of their population by homeowners is needed*.

## Roof Rat Behavior

Roof rats are good climbers and prefer to live in palm trees, pine trees, and especially oleanders. Inside homes, they prefer the dry upper levels – attics, wall cavities, and false ceilings. Roof rats prefer to nest in locations off the ground and rarely dig burrows for nests if off-the-ground sites exist. Roof rats will travel along power lines to trees, oleanders, vines, and roofs. They can climb rock walls and rough surfaces such as stucco. They can jump 2 feet straight up and 4 feet horizontally (!). Roof rats can access your living space through holes in the exterior of your home the size of a nickel.

Roof rats will tend to forage for food after sunset. They are omnivorous and will eat anything, including uncovered garbage, pet food, bird seed, pet feces, garden vegetables, insects, lizards, tree bark, soap, paper, leather, beeswax, and fruit -- *especially citrus fruit*, of which we have an abundance in the Arcadia neighborhood! They prefer to eat under cover and seek shelter when feeding. Their foraging range is approximately a 200-300 foot radius from the nesting area (about the size of one football field). A roof rat could live in one neighbor's yard and feed in another. Peak times for activity are at dawn and dusk (they are nocturnal). They are most active between November and May.

Female roof rats can start having offspring at only 3 to 4 months of age. They can have up to four litters per year, each containing five to eight young. One breeding pair and their progeny can result in 6,000 to 7,000 rats per year. Interestingly, some offspring, called "roamers," are genetically programmed to move in a straight line for as long as possible (a few miles) – to find mates that are not relatives and to open up new territories for successive generations of rats.

While they are preyed upon by coyotes, owls, and house cats, roof rats are fast and agile, and are not easy prey for mammalian or avian predators. Predators are an inconsequential population control factor.

## Signs of Roof Rat Activity

- Dead rats on your property.
- Tiny cylindrical droppings ¼ to ½ inch long with tapered ends.
- Smudge or grease marks along walls where rats travel.
- Gnaw marks around roof eaves.
- Damage to plastics and coverings on electrical wires.
- Scattered or torn insulation in your attic.
- Scratching noises in the attic or walls (!).
- Holes in screens.
- Hollowed-out citrus fruit rinds. With sour citrus, such as Meyer's lemons, they eat the rind of the fruit, leaving the peel-less fruit behind.
- Agitated pets (they may hear and smell roof rats long before you do).

## How Do Roof Rats Get Into Your Home?

- Any gap, crack, or hole larger than ½ inch (size of a nickel) is large enough for them to squeeze through.
- They follow pipes down from the attic, sneak through doggy doors, gnaw through drywall and enter kitchens, bathrooms, and sink cabinets.
- They have been known to enter the sewer system by falling down roof sewer vent pipes (this is likely not a happy outcome for them).
- They can chew through wood, plastic, aluminum siding, and dry wall.
- They can jump from tree branches or follow power lines to get onto your roof.
- Through gaps in shingles.

## Prevention

While the roof rat has evolved an impressive set of survival strategies, there are many actions you can take to prevent roof rats from infesting your property.

### Remove shelter

- Trim tree branches back (by 3 feet or more) that contact the roofline, walls, or fences.
- Trim the dead frond skirts from your palm trees. Prune the crowns of your palm trees and remove dead fronds.
- Eliminate vines growing on buildings.
- Seal any holes in the home's exterior larger than a half inch diameter (size of a quarter). Large gaps you should push steel wool into (bulk steel wool is available at home improvement stores). Cracks should be caulked. For attic ventilation holes, and sewer roof vents, cover with diamond mesh wire. If your home is an original Allied home, you may despair at the number of gaps that need sealing on your exterior – you may prefer to hire a local company to do the sealing for you.
- Rake leaves and debris from landscaping beds.
- Prune oleanders and bushes to reduce hiding places. Ideally, prune shrubs so that the ground underneath them is clearly visible. *They especially like oleanders.*
- Store wood piles and lumber piles at least 18 inches above the ground and 12 inches away from walls.
- If you have trouble with rats climbing a particular area of your home, a rat guard made of sheet metal 18-24 inches wide can be attached to your home. Rats will not be able to get climb the smooth sheet metal surface. See page 4, of reference 1, below.

### Remove food sources

- Pick citrus before it hits the ground. Roof rats prefer citrus fruit, as it's both a food source and a water source. They also are known to consume peaches, pomegranates, avocados, figs, and dates.
- Bring pet food dishes indoors at night.
- Keep garbage and recycling bin lids closed.
- Limit the use of bird feeders and sweep up seed debris in the evenings.

## Remove water sources

The many water sources we have brought to the desert made this a hard one to limit.

- Water sources include leaky faucets, sprinkler heads, bird baths, fountains, ornamental ponds, condensation drip lines, saucers under potted plants, and pet water dishes.

## Control/Kill Roof Rats

### Snap Traps

The preferred solution for indoors over poison baits, as the rat is killed immediately and can't wander off to die inside the attic or wall cavity.

The old standby is the Victor Rat Trap. The Victor Professional Rat Trap is better, as it has an expanded treadle (trigger plate).

Rats are very aware of their environment and are afraid of new objects placed in it. It is therefore **essential** that you follow a *pre-bait* strategy. Here is the procedure:

1. Bait the trap with peanut butter. Set the trap in your chosen location (see below).
2. Days 1 through 3, leave the trap unset. If a rat eats the bait overnight, replace the bait each day (if the bait is not eaten, choose another location).
3. On Day 4, after 3 days of the rat haven't eaten the bait on the unset trap, now set the trap to kill. You should have a killed rat in the trap the next morning.
4. Go back to step 2. You will have a routine of 3 days of pre-baiting an unset trap, then 1 day of the trap set to kill. You should catch a one rat every 4 days, per trap.

### Where to Locate Traps

Place traps along well-travelled paths used by the rats, such as overhead beams, pipes, ledges, and sills. Some traps may be placed on the floor along walls, behind objects, in dark corners. However, you are trapping *roof rats*, who prefer to be above ground – so most of your traps should be above floor level, in areas such as attics, rafters, and on top of stacked commodities. Place traps so that the treadle end is in the runway – for walls, this would be with the treadle facing the wall, or if placed vertically, with the treadle down. However, if you notice roof rat activity along the floor, try a floor placement; this author has had success with this placement.

You can locate traps outdoors, attached to the top of walls, nailed to tree branches, or on top of fences. Follow the same pre-baiting strategy outlined above. **However, only set traps to kill from dusk to dawn in order to avoid accidentally trapping non-target animals such as squirrels and birds.**

### Poison Bait in Bait Stations

This is the preferred method for outdoors. Rodenticides that contain *bromadiolone*, *brodifacoum*, *zinc phosphide*, or *bromethalin* are effective against roof rats. Rats eat the poison bait and die one to three days later.

Purchase poison bait blocks, with a hole through the center. This allows the bait to be wired into, or secured to a metal rod, in a bait station. Roof rats prefer to eat with the security of cover, which the bait station provides. The bait station also prevents access to the poison bait by non-target animals, pets, and children. Since the bait is secured in the bait station, the roof rat has to consume it in-place and cannot carry it off. Do not use pellets, as the roof rats can and will carry them off to their nests.

Poison bait blocks include [TomCat Bait Chunx](#), [JT Eaton Bait Blocks](#), and [JT Eaton Top Gun](#). This author has had good success with [Just One Bite](#); it's only sold in large boxes, however –

which have lasted about two years (with weekly checking of the bait stations). Another highly rated poison bait is [Confrac Blox](#), which comes in an 18 lb. pail. Wear rubber gloves and **follow label directions for use.**

You can build your own bait stations; however, it is probably a better use of your time to just purchase one or more. Good [bait stations](#) include:

- For mounting on tree limbs, walls, ledges, and structural beams – [the JL Eaton Top Loader Bait Station \(Model 902\)](#)
- For chunk bait – [Protecta Sidekick Rat Bait Station](#)
- For Just One Bite bait -- [JT Eaton STRONGBOX Metal Rat Bait Station 910TP](#) or [Protecta LP Rat Bait Station](#)

Place bait stations up high, along fences, in trees, or dense shrubbery. Bait stations can be secured with wires, zip ties, screwed or bolted to wood supports, wired to stakes, or other means dictated by your placement.

Roof rats are very aware of their environment and are afraid of new objects placed into it. It may be a week before they enter the bait station. If after 3 weeks there has been no feeding in the bait station, you may want to try another location. Check the bait station weekly and replace baits as needed. Replace any baits that has become wet or moldy.

## Commercial Exterminators

Don't want to do any of the above? The [commercial exterminators](#) you hear advertise on radio and TV can setup and monitor a rat control program around your home.

## What Doesn't Work

- Dogs. Rats quickly learn safe travel routes through yards to avoid dogs.
- Cats. Cats can disperse juvenile roof rats but are rarely able to handle and adult roof rat.
- Ultrasonic devices. there is some evidence that ultrasonic devices can cause hearing loss in pets, especially dogs.
- Electromagnetic devices.
- Visual devices such as model owls, snakes, and cats.
- Repellents, based on taste or odor, are not effective.
- Coca-Cola® -- a rumor spread that rats can't burp and die from drinking it. However, Maricopa County Vector Control tested Coca-Cola® and found not only that it was ineffective, but that the rats loved it!

## Conclusion

Roof rats will always be with us in the Arcadia neighborhood. Continuous control is need to keep their numbers to a very low level, otherwise, the rats will not only reproduce rapidly, but often quickly exceed their former density. **Thank you** for helping keep roof rats under control in the Arcadia Neighborhood.

## References

1. [Root Rat Control around Homes and Other Structures](#), by Lawrence M. Sullivan, The University of Arizona Cooperative Extension, publication AZ1280, 3/2002.
2. [Roof Rats: Identification, Ecology, and Signs](#), by Paul Rivadeneira and Dawn H. Gouge, The University of Arizona Cooperative Extension, publication AZ1775, 7/2018.

3. [Roof Rats](#), by Rex E. Marsh (1994). The Handbook: Prevention and Control of Wildlife Damage. 6.

## Resources

1. [Maricopa County Vector Control](#) – 602-506-6616