Questions & Answers about Rats!

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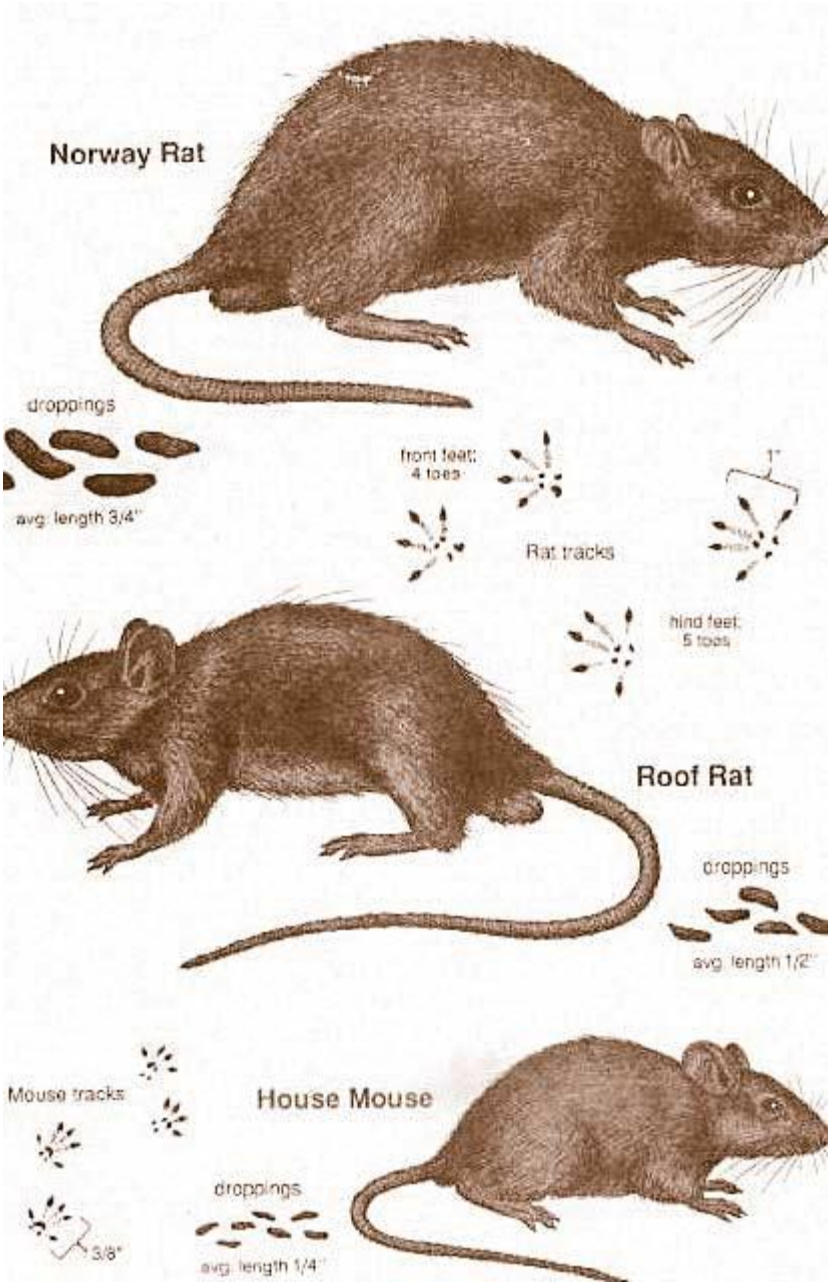

Norway Rat
droppings
avg. length 3/4"
front feet:
4 toes
Rat tracks
1"
hind feet:
5 toes
Roof Rat
droppings
avg. length 1/2"
Mouse tracks
3/8"
House Mouse
droppings
avg. length 1/4"

Characteristics of Domestic Rodents

	Norway Rat	Roof Rat	House Mouse
Appearance	Large, robust	Sleek, graceful	Small, slender
Weight	7-18 oz	5-9 oz	0.4 - 1 oz
Total Length	13 - 18 in	13 - 18 in	5 - 7 1/2 in
Snout	Blunt	Pointed	Pointed
Tail	Shorter than head plus body. Lighter-colored on underside 6-81/2 in.	Longer than head plus body. Uniform coloring top & bottom. 71/2 - 10 in.	Equal to or a little longer than body plus head. 3 - 4 in.
Ears	Small, close set, half buried in fur. Ears do not reach eyes.	Large, stand well out from fur. Ears can be pulled over eyes.	Prominent, large for size of animal
Fur	Red-brown to grayish-brown	Black to slate gray.	Dusky gray.
Droppings	Large in size 55 / day av.	Smaller, slightly curved 59 / day av.	Small pointed ends 50 or more / day

Did you know that rats can…

- ✓ Survive on animal droppings and pet food.
- ✓ Squeeze through a 1/2 inch hole.
- ✓ Climb horizontal and vertical wires.
- ✓ Reach 18 inches.
- ✓ Jump vertically 3 feet.
- ✓ Swim up floor drains, sewer lines and through toilet bowl traps.
- ✓ Gnaw through soft metals, wood, electrical wires and cinder blocks

Frequently Asked Questions:

Q: What attracts rats?
A: Food, water and a place to live!

Q: FOOD? What kind of food?
A: **Animal droppings!!!**

Q: What other kind of food?
A: Garbage!

- Garbage that is stored in plastic bags or left on the ground
- Damaged trash cans or cans without lids
- Pet food left out overnight.
- Bird feed on the ground.
- Gardens

Q: Where do rats get water?
A: Lots of places! Places you wouldn't even think of necessarily. Anything that holds water can be a water source. Think of places like:

- Pet dishes
- Rain collected in overturned garbage can lids, Frisbees, tires
- Regularly watered gardens and lawns

Q: Where do rats live?
A: Lots of places! Places like:

- Brush & rubbish piles.
- Tall weeds and grass.
- Burning barrels and fire pits.
- Wood stacked on the ground.
- Sheds, garages, play houses etc. built without proper “rat walls”

Q: Don’t rats live in abandoned houses?
A: They might. They also might live in your yard if you are providing any of their favorite hiding spots! Remember, those spots include:

- Brush & rubbish piles.
- Tall weeds and grass.
- Burning barrels and fire pits.
- Wood stacked on the ground
- Sheds, garages, play houses etc. built without proper “rat walls”

How can rats be eliminated?

There is not any bait, poison or trap that will eliminate rats if these simple steps are not followed. The elimination of rats cannot be done by one person, it quite literally takes the entire block! If you take these necessary steps but your neighbor does not, the problem will continue. You MUST work together to eliminate rat infestations and prevent their return.

The most basic fact that you should know about the prevention and elimination of rodents is that they must have food, water and a nesting place in order to live and multiply. Animal droppings, garbage, compost piles, food scraps, pet food in dishes, bird feeders, even dirty dishes in a sink all provide food. Removing food sources and good housekeeping will have a great impact on the rodent population.

Inside your home, avoid leaving food scraps in bedrooms or other parts of your home. Wash dishes promptly. Don't leave pet food in bowls overnight and clean under refrigerators and stoves frequently. Store food products in containers with lids and keep on high shelves as opposed to on counters or under sinks and counters.

It is important to keep pet and bird food in containers with tight lids, preferably metal containers. Avoid overfeeding animals and feed only during the daylight hours so that the feed is cleaned up by nightfall. This includes bird feeders, especially those close to the home.

Pay attention to rubbish piles, storage and trash areas outside. Store garbage in cans with tight fitting lids, preferably made of metal. Remove waste food, cleanup spillage and trash immediately and keep all garbage in a can with a tight fitting lid. It is also recommended that an 18 inch plant free zone around the outside wall of the buildings be maintained. Weeds at the base of the fence line surrounding the property must also be controlled. Maintain the grounds and ornamental plantings so that they do not become a rodent harborage. Once overgrown, the plant grounds become an attractive nesting and burrowing site for rodents.

Failure to follow these simple steps will result in continued problems with rodents in spite of baiting and trapping activities.

- The first and most important step you MUST take is to eliminate food and water sources. If you do not eliminate their food sources, they will continue to be a problem.

- **Daily removal of animal droppings** and proper storage of garbage are the single most important factors in rat prevention and elimination. Pick up after your pets daily! Avoid putting out bird seed, peanuts or bread crumbs. If you must have a bird feeder, place it at least four (4) feet off the ground and clean the droppings daily.

- Secondly, you must do some general outdoor housekeeping. Make sure they don't have a place to live. Clean your yard. Get rid of all unnecessary items, junk and large rubbish items. Store lumber / firewood on racks 18 inches or more above the ground. Don't install a shed or other building without a digging proper rat wall first. You will also want to make sure that you have "rat proofed" your home, sheds, and garages. Seal all holes and openings greater than ½ inch in diameter within 3 feet of the ground. Use 18 gauge hardware cloth, 24 gauge sheet metal, concrete, brick or mortar.

- Finally, you can attempt to kill them with poisons or traps.

- **Killing them with poisons:** The most commonly used poisons are those that prevent blood clotting. These are slow acting poisons and rats need several feedings, so it is necessary to maintain a continuous fresh supply until feeding stops.

- **With traps:** Snap traps are the safest and least expensive way to kill rats. Place several traps along rodent runways and place the trap with the trigger toward the wall. Bait traps with peanut butter, raisins, bacon or canned cat food (fish / meat flavored).

Recognizing Rat and Mouse Signs

Habitat Mice and rats require nesting spaces. Rats often live in underground tunnels, but they will also live under wood piles, abandoned play equipment, sheds without cement floors or rat walls as well as other places. Mice prefer spots close to food and will nest about anywhere, including the sleeves of hanging coats, unused birdhouses, and drawers full of dish towels. Fall is a good time to clean up piles of junk and clutter and examine drawers and closets for signs of mice and rats.

Signs of mice and rats include holes. Mouse holes are tiny and rat holes can be quite large. Holes often have a greasy stain around them. Mice often make tiny round ball-like nests of paper, cloth or other substances in cupboard, drawers, feed sacks and other places. Gnawed items, edible and otherwise are good signs. Droppings of mice and rats are cigar shaped, with rat droppings being much larger than

mouse. Mice seem to be less tidy than rats, leaving droppings everywhere, rats tend to make piles or use one area more than others.

Rats and mice are habitually nocturnal and are rarely seen during the day except when infestations are heavy. Therefore, it is necessary to interpret signs of their activities properly in order to eliminate them. These signs are found in secluded places, such as along walls, under piles of rubbish, and behind or under boxes, boards, and thick vegetation. From the rodent signs, one can tell the species present and whether a rodent infestation is current or old, heavy or light.

Droppings Fresh droppings of feces are usually moist, soft, shiny, and dark, but in a few days they become dry and hard. Old droppings are dull and grayish and crumble when pressed with a stick**.**

Runways Rodents select pathways offering the most concealment, best routes of escape and shortest distances to necessary resources. Rats habitually use the same runways between food, water, and harborage. Because of the keenly developed sense of touch in their whiskers and in specialized hairs along the body, rats prefer continual body contact with at least one vertical surface, such as a fence or

wall. Rats also follow "odor trails." Outdoors, their runways are narrow pathways of beaten earth swept clear of debris. Indoors, greasy runways are found along walls, steps, and rafters. Undisturbed cobwebs and dust in a runway indicate that it is not in use.

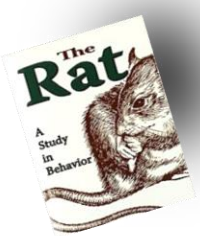
Rubmarks Along regularly traveled runways, a dark, greasy mark forms from contact by the rodent's body. Fresh marks are soft and will smear if rubbed. As the grease ages, it dries and gathers dust and will flake off when scratched with a fingernail. The rubmarks of the Norway rat are most commonly found along runways near ground or floor level, while those made by the roof rat are most commonly seen overhead as swing marks beneath beams or rafters at the point where they connect to the walls. Mice do not leave detectable rubmarks except when the infestation is heavy.

Burrows The Norway rat prefers burrows for nesting and harborage; the roof rat burrows only occasionally. Burrows are found in earth banks, along walls, under rubbish or concrete slabs, and in similar places. If a burrow is in use, the entrance will be free of cobwebs and dust. Fresh rubmarks on hard packed soil at the opening indicate a well-established and presently used burrow. The presence of fresh fragments of food, rodent droppings or freshly dug earth at the burrow entrances also indicates current use by rats.

Gnawing Rodents gnaw almost anything they can bite. Rats gnaw to gain entrance and to obtain food. When gnawings in wood are fresh, they are light colored and show distinct teeth marks. Small chips of wood or other materials indicate recent gnawing. With age, wood gnawings become dark and smooth from weathering and from frequent contact with the rodent's body.

Tracks Fresh tracks are distinct. Smooth tracking patches of any dust material, such as flour or talc, placed along runways are of value in checking for rodent activity. To see tracks in the dust, hold a flashlight at an angle that causes the tracks to cast distinct shadows. Tail marks are also often visible in dust or tracking patches.

Urine Stains Urine will naturally illuminate under a black light. It will be blue to white if fresh, and yellow to white if old. Note: the use of black lights is not a guarantee that rodent urine is present as other household products may also be fluorescent.



Senses, Ability, and Reactions in Rodents

Touch This highly developed sense, allows rats to move rapidly in the dark. They prefer to run along walls or between things where they can keep their whiskers in contact with side surfaces.

Vision Rats cannot see very well and are presumed to be color blind. They can detect motion in very dim light and recognize simple patterns and objects of different sizes.

Smell Rodents leave odor trails of urine and other secretions which mark trails and use their excellent sense of smell to navigate.

Hearing Rats have a keen sense of hearing and can detect sounds that humans cannot. Unusual noises cause rodents to scatter and attempt escape.

Reaction to Strange Objects Rats may avoid a new sound or a strange object in their environment for three or more days. Mice are more likely to explore new objects and are more likely to be caught in newly set traps.

Movement Rats and mice memorize the details of their habitat, pathways, obstacles, hiding places, and water and food sources. They learn the muscular movements necessary to move down a pathway to take shelter. When a commonly used pathway is blocked, rodents repeatedly try to negotiate the route that their sense of orientation has informed them should be there

Climbing Roof rats and house mice are good climbers, and the Norway rat can climb quite well when necessary. Rats and mice can climb any vertical surface where they can get a claw hold.

Jumping and Reaching Rats can jump nearly 2 feet vertically, 3 feet with a running start; they can jump 4 feet horizontally, and 8 feet from an elevation that is 15 feet above the finish point. Rats can reach upward about 18 inches.

Swimming Rodents are good swimmers. They are able to swim up through floor drains and toilet bowl traps.

Competition Roof rats and Norway rats compete when attempting to share space. Norway rats have replaced roof rats in areas where both were once found. Rats are dominant over house mice. Mice will restrict their activity to time periods when rats are not present.

Trapping to reduce rodent population

Snap traps are recognized by everyone and have been in use for a very long time. Once this spring powered trap is set, it is placed with its trigger against a wall or other solid component of the rodents runway. Professional snap traps have large triggers that trip by the mere contact with a passing rodent. Snap traps that are baited property are very attractive. Often foods such as peanut butter, cheese or bacon are used as snap trap baits. Also, nesting material like cotton, or Styrofoam can be very effective in some situations.

Automatic traps are made specifically for catching mice. The mice are attracted to them because the mouse is curious about the small opening in the trap. Usually no bait is required. They are excellent management devices and may catch 15 mice in a single setting. The advantages of their large catch capacity, ease of use, no bait, or toxic substance and that they are usually "cleanable" made of corrosion resistant metal, add up to make these devices good choices for food facility situations. Live mice in a multiple catch trap can be disposed of by dunking the entire trap in a pail of water to drown the mice. Use soapy water to hasten the kill.

Glue boards or sticky traps have a glue or sticky substance spread on cardboard. The rodent steps on the glue and cannot get unstuck. These can safely reduce mouse populations but are not effective for capturing rats. If not placed wisely, rats can escape glue boards when all four feet are not stuck.

Generally, traps should be placed in an active rodent runway. Snap traps are placed with the trigger against the wall. Automatic traps can be placed with the trap opening either parallel or perpendicular to the wall. Sticky traps are placed where the rodent is most likely to run over the board. Keeping in mind that they like to run touching a wall or object with the side of their body, keep traps near these surfaces. Place traps on the sides of exterior doors to "greet" incoming rodents.

When trapping mice, keep in mind that they do not travel very far, so space them 10 feet apart and use large numbers of traps. In severe mouse infestations, decrease spacing to 6 feet and results may improve.

Rats have different habits than mice and they travel farther from the nest. Traps should be spaced farther apart and must cover the wider range used by rats. Roof rats may be running on rafters, beams and pipes and traps should be fastened there when roof rats are a problem.

Here are some final tips for using rodent traps:

- Eliminate sources of food as much as possible before trapping
- Maintain traps by cleaning and keeping well oiled
- Store traps in plastic bags to keep them from absorbing odors such as pesticide odors
- Do not pet cats or dogs before handling traps, wash your hands if you think any odors persist
- Snap traps that are warped should be replaced as they will scare rodents when they rock

Chemical management to reduce rodent population

Housekeeping is the *key element* of rodent management because it removes food and harborage for rodents. Good housekeeping enhances the baiting program because there is less food for the rodents to eat and, they are more likely to eat the bait. Even the best baits are not able to compete with other foods. After taking every practical measure to eliminate food sources and harbor, you may choose to use poisons which kill rodents. Their toxic effects can harm people or other animals as well.

Baiting for Mice

Proper placement of the bait is important. Place as many bait stations as is practical with each containing enough bait to feed several mice; there is no such thing as too many bait stations. Mice are more likely to enter the bait station if the opening is in their runway and they can see a way out the other side. Place bait between their harbor and where they are finding food. Use mouse-size bait boxes for mice as they are small and more attractive to mice. Keep the baits fresh. Fresh baits are far more attractive and must out-compete other food sources.

Baiting for Rats

Several of the mouse baiting strategies are also used for baiting rats. For example; bait stations should be in the rat runway, the openings of the station should be parallel to the runway, place the stations between the harborage and the feeding area, the bait should be fresh and plentiful and use a good tamper proof bait station, but the larger rat size must be used. Here are some additional considerations that will help management of rats:

- Rats travel farther than mice, space stations 15 to 50 feet apart. Space them closer when the infestation is heavy
- If rat burrows are found outside, place baits directly into the harborage
- Do not change bait or bait box placement once feeding begins. Rats are very wary of changes and may avoid the stations temporarily or may not return at all
- Rats eat up to 6 ounces or more of food nightly, so have enough bait to provide all with at least enough to obtain a lethal dose.
- Rats need up to one ounce of water each day. If the problem area is dry, perhaps combining liquid and dry baits will increase effectiveness

Successful long-term rat control is not simple. It requires good housekeeping, active participation and cooperation between you and your neighbors. Prevention is the best cure!

For more information on how the Township may be able to help you and your neighbors with rodent problems please contact:

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