



# Norway Rat

*Rattus norvegicus*



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## Overview:

Norway rats travelled to North America on ships that sailed from Europe in the 1700's. Some sources say they may have originated from Asia and have since infiltrated the rest of the globe except the north and south poles, Alberta, and a couple of small islands that are working to eradicate rats in New Zealand and the Aleutian Islands. In Alberta, Norway rats and any species with the Genus "*Rattus*", are listed as "Pests" in the Agricultural Pests Act and its Regulations. This means land owners and local government shall work to prevent infestations, and control or destroy invasive rats in the province.

Norway rats are non-native species that spread and reproduce at a rapid rate because females can produce offspring every 21 to 23 days in litters of up to 12 young. In one year a female rat can have up to 15,000 offspring. Norway rats can live up to 4 years of age. Alberta has maintained a "rat-free status" since 1937 because there are no residential populations of Norway or Roof rats in the province. Any rat infestations are controlled and eradicated. Along the Southeast corner

of the Alberta border there is a 30 km long "rat control zone" where the province and local government work to control any Norway or Roof rats from entering into Alberta from Saskatchewan. Their movement is also blocked by the Rocky Mountains on the west border and sparse human distribution on the north and south borders where farms are spread out from one another. In 2004 the Alberta Research Council determined that Alberta saved \$42.2 million/year in economic and environmental damages from invasive rats by maintaining a Provincial Rat Control Program that costs about \$300,000 in toxicants and labour each year.

**Economic Damage:** Norway rats will forage on small livestock (poultry and sometimes young swine). They also eat agricultural crops or grain in storage bins which results in loss of revenue for farmers who are to not be able to sell contaminated grain containing rat feces. If rats get inside buildings where food is kept they can decimate food stores in homes, businesses, or on farms. Rats have the ability to chew 2 to 3 inch holes through

walls, floors, doors, etc. made of different materials. They are very destructive to buildings and infrastructure as they weaken structures piece by piece by creating small holes in large numbers when rat populations are high.

**Sociological Damage:** Norway rats can carry diseases, parasites, and pathogens which can directly and indirectly affect human health. Direct contact includes rat bites or contaminated food and water sources. Humans that have been bitten by rats are susceptible to being infected with a bacterial infection called rat-bite fever. Human food or water sources that have been contaminated with rat urine, feces, or saliva can transmit the following diseases to humans: Salmonellosis, Leptospirosis, Trichinosis, Hemorrhagic fever with renal syndrome, and Lassa fever. Indirect spread of diseases to humans comes from mites, fleas, or ticks that have been in contact with rats. Some examples of these diseases are the Plague and Murine Typhus Fever. Rats also cause stress for humans because of their threat of carrying diseases and their destruction of property (chewing of electrical wires, walls, etc.).

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# Norway Rat (Continued)

**Environmental Damage:** Norway rats are omnivores meaning they eat vegetables and meat. Their goal is to eat as much protein as they can access such as fish, birds, insects, and small mammals when living away from humans. They can be destructive to desired native wildlife populations and therefore must be controlled to prevent this from happening. They have decimated a native bird population in the Aleutian Islands on Rat Island. Rats tend to live close to water sources that can provide them with drinking water as they need at least 1 tablespoon of water per day. They also need about a 0.5 lb. of food per day to survive. This means they typically live on shorelines or near water sources used by humans.

## Habitat:

Norway rats will live anywhere they can find food, water, and shelter where they are safe from cold winters. They are capable of living in the wild or among humans as long as they have tall grass or buildings and debris that provides them with cover so they can remain unseen. Invasive rats are most commonly found in landfills, grain storage bins or hay bales, and in basements of buildings.

## Identification:

**Weight:** Adult male Norway rat's average weight is 1 lb.

**Length:** 17 cm tail. Longer body and head than tail length.

**Colour:** Coarse sandy brown to gray hair on body, grey to yellowish belly, and hairless and leathery light brown tail.

**Characteristics:** Hairy body. Leathery looking cylindrical tail with short wiry hairs.

**Similar Looking Species<sup>1</sup>:** Roof rat (*Rattus rattus*). Shorter head and body than tail which is longer than both. They also prefer to eat more of a vegetarian diet compared to the omnivore Norway rats.

## Prevention:

The best way to prevent an infestation of rats is to report it to local authorities as soon as possible, especially in Alberta where we are trying to maintain our "rat-free status". Invasive rats move into an areas for one or all of the following reasons; food (grain, garbage), shelter, and water. There are a number of things you can do to prevent them from finding your home and yard desirable habitat. Make your home or farm less

desirable place for them to live by storing food or grain in sealed containers, construct warehouses and grain bins with cement flooring that they can't chew through, dispose of garbage in animal proof bins, clear your yard of debris that they can hide in or under, rotate hay bales or grain on site so they cannot establish themselves within them, and clean up spilled grain or garbage that may lure them into the area.

## Report Sightings:

In Alberta all rat sightings should be reported to the following agencies starting from top to bottom if you cannot get a hold of the first contact in this list:

1. Call 310-FARM (3276) and the Alberta Agriculture & Rural Development switchboard will direct you to the correct contact for the Rat Control Program.
2. Or call your Municipal District or County Agriculture Department. Contact their Agricultural Fieldman who work in conjunction with the Provincial Rat Control staff.
3. Or call your local Municipal Bylaw Officers or Peace Officers. They will know who to get a hold of the correct provincial contact or may even have their own protocol.

## Control:

Some registered anticoagulant products in Alberta are Warfarin, Chlorophacinone, Diphacinone, Bromadiolone, Brodifacoum, and Difethialone. Other registered lethal toxicants in Alberta include: Bromethalin, Rodentol, and Zinc Phosphide. Strychnine is also available to farmers which is to be placed in rat bait stations. Farmers must contact their local Agricultural Fieldman at their County or Municipal District office to register and obtain Strychnine for rat control. Infestations in cities or towns should be reported to municipal authorities.

## Links for more information:

Alberta Agriculture & Rural Development – Rat Control Program

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/com14443](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/com14443)

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## REFERENCES

- 1 Internet Center for Wildlife Damage Management – Norway rat versus Roof rat comparison diagram



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