

Rattus norvegicus



Taxon	Family / Order / Class / Phylum
<i>Rattus norvegicus</i> (Berkenhout, 1769)	Muridae / Rodentia / Mammalia / Vertebrata

COMMON NAMES (English only)

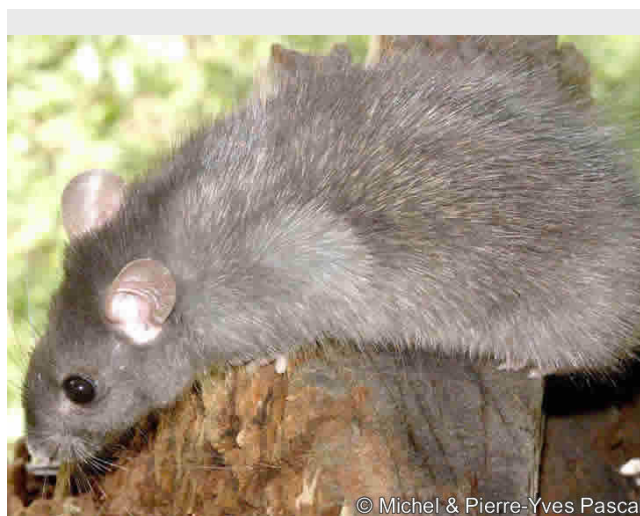
Norway rat
Brown rat

SYNONYMS

Mus norvegicus Berkenhout, 1769
Mus decumanus Pallas, 1778
Mus hibernicus Thompson, 1837
Epimys norvegicus Miller, 1912

SHORT DESCRIPTION

The Norway rat is an omnivorous and opportunistic terrestrial rodent. Mostly grey or brown, adults may weigh more than 500 g (230-550) with a body length of 190-265 mm and a tail length of 160-205 mm. Its albino form is used in laboratories and bred as a pet.



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***Rattus norvegicus* is an omnivorous and opportunistic terrestrial rodent.**

Photo: Michel & Pierre-Yves Pascal

BIOLOGY/ECOLOGY

Dispersal mechanisms

When introduced, natural spread is terrestrial, following paths and roads, rivers, lake banks and the seashore.

Reproduction

In Europe reproduction in natural habitats takes place during spring, summer and autumn, but it is observed all year round in human dwellings. Sexual maturity occurs when the animal is 50-60 days old. The average number of embryos per litter is 7 to 8; pregnancy lasts 21 days and breeding lasts 22 days. Post-partum fertilisation is frequent.

Known predators

In Europe major predators are carnivorous mammals, - i.e. fox (*Vulpes vulpes*), wild and feral cat (*Felis sivestris*), western polecat (*Mustela putorius*), and birds of prey such as the barn owl (*Tyto alba*).

Resistant stages (seeds, spores etc.)

None

HABITAT

Native (EUNIS code)

I: Regularly or recently cultivated agricultural, horticultural and domestic habitats, J: Constructed, industrial and other artificial habitats, B: Coastal habitats, C: Inland surface water habitats, D: Mire, bog and fen habitats, E: Grassland and tall forb habitats, F: Heathland, scrub and tundra habitats, G: Woodland and forest habitats and other wooded land, H: Inland unvegetated or sparsely vegetated habitats.

Habitat occupied in invaded range (EUNIS code)

J: Constructed, industrial and other artificial habitats, I: Regularly or recently cultivated agricultural, horticultural and domestic habitats, D: Mire, bog and fen habitats.

Habitat requirements

Where introduced, the Norway rat occupies many types of habitats except high mountains, but seems to need some fresh water. Nevertheless, some populations persist in islands totally deprived of fresh water.

DISTRIBUTION

Native Range

The Norway rat is likely to be native to the South East of Siberia, North of China and Hondo region (Japan).

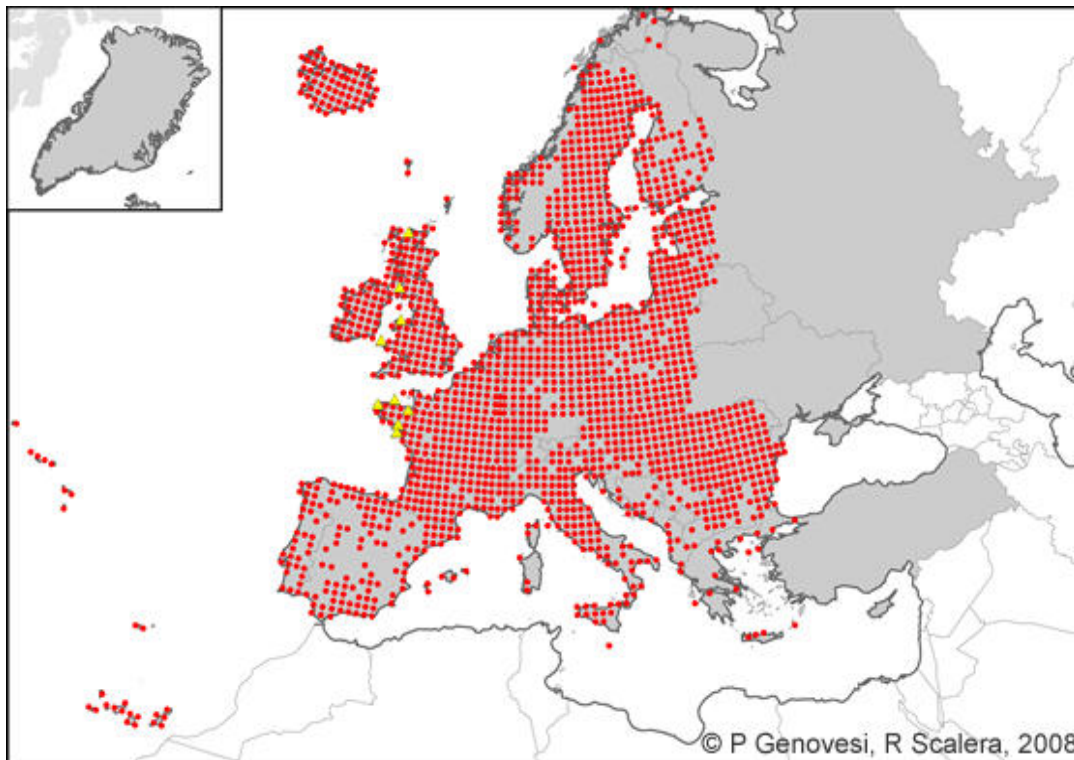
Known Introduced Range

During the beginning of the XVIII century, this synanthropic species was simultaneously introduced by humans in all the continents except Antarctica and since then, the species has been introduced in a large number of islands all around the globe by maritime traffic.







Trend

It is increasing its distribution area by non-deliberate introductions in islands.

MAP (European distribution)



Legend

	Known in country		Known in CGRS square		Known in sea
	Eradicated		Eradicated		Extinct

INTRODUCTION PATHWAY

Mainly maritime and terrestrial traffic (i.e. by stowing away on vessels and trucks).

IMPACT

Ecosystem Impact

When present on islands, it induces declines in small mammal populations (shrews - i.e. *Crocidura suaveolens* & *C. russula*), marine and land bird populations (i.e. *Anthus petrosus*, *Troglodytes troglodytes*, *Prunella modularis*) and reptiles (i.e. *Anguis fragilis*). It has contributed to the disappearance of several insular marine bird populations (i.e. *Hydrobates pelagicus*).

Human Health and Social Impact

Norway rat serves as a reservoir and vector of *Leptospira interrogans* and as a reservoir of the Hepatitis E virus.

Economic Impact

The cost of Norway rat population control in towns and warehouses is very high.

MANAGEMENT

Prevention

Since it is difficult to eradicate rats, it is better to prevent their colonisation, particularly on islands, where the presence of rats can be detected successfully using different trapping methods and several activity signs.

Mechanical

Rats can be captured effectively through live-traps and snap-traps.

Chemical

In Europe, Norway rat populations in human dwellings, towns and warehouses are controlled with toxic baits. Recent attempts to eradicate several European insular populations using successively trapping and toxic baiting were successful and consequences of these operations on native species were positive.

Over the last fifteen years, eradication of rats (*R. rattus*, *R. norvegicus* and *R. exulans*) have been carried out successfully using chemical poisons on increasingly larger offshore islands, i.e. Langara Island (British Columbia, Canada, 3100 ha), Raoul Island (2938 ha) and Little Barrier Island (3083 ha) (New Zealand). Rats, as with many rodents, are susceptible to anticoagulant poisons such as chlorofacinone, bromadiolone, difethialone and brodifacoum (although the latter can acquire persistent residues in non-target wildlife). Diphacinone, coumatetralyl and warfarin should also be evaluated in field studies as alternative rodenticides.

Biological

Contraceptive methods of control are currently experimental, but if the potential for effective control using such methods is promising, these methods must solve potential collateral effects. National Wildlife Research Center (USA) scientists are working on several possible formulations that may make effective oral immunisation possible.

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