Brown Rat, *Rattus norvegicus*

**Overview**

*Short description of* *Rattus norvegicus*, Brown Rat

The large size and long, thin, almost hairless tail distinguish rats from other grey-brown rodents. Confusion is possible with water vole, but these are smaller and darker brown, with shorter ears, a furry tail and a blunter snout. The ship rat is slimmer than the brown rat, with relatively longer ears and a tail that is longer than its body. The brown rat's tail is shorter than the body length and has a paler underside.

*Description of* *Rattus norvegicus*, Brown Rat status in GB

The brown rat is very abundant in GB and almost ubiquitous in both urban and rural environments. The GB pre-breeding population was estimated to be at least 6.8 million animals in 1995.

**Habitat summary:** *Rattus norvegicus*, Brown Rat

Brown rats are found in a very wide range of habitat types, typically in association with humans.

**Overview table**

<table>
<thead>
<tr>
<th>Environment</th>
<th>Terrestrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species status:</td>
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<td>Functional type:</td>
<td>Omnivore</td>
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<td>Status in England:</td>
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<td>Status in Scotland:</td>
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**Invasion history:** *Rattus norvegicus*, Brown Rat

**Origin**

The species is believed to have originated on the steppes of central Asia and to have reached eastern Europe from the east in the early 1700s, possibly by natural dispersal.

**First Record**

The first brown rats in GB are reported to have arrived at English ports around 1728–29.

**Pathway and Method**

Brown rats can thrive on ships at sea and come ashore in ports or through shipwrecks.
Species Status
The brown rat is highly invasive and is regarded as a serious pest almost worldwide.

Ecology & Habitat: *Rattus norvegicus*, Brown Rat

Dispersal Mechanisms
Brown rats have spread around the world through their readiness to travel in ships. They swim well and can disperse naturally to and from offshore islands.

Reproduction
The species breeds prolifically throughout the year. As many as 13 litters can be raised in a year, each of up to nine young, and females mature sexually after just 8–12 weeks.

Known Predators/Herbivores
Young rats fall prey to a variety of avian and mammalian predators, including owls, domestic cats and dogs, and foxes. Fully grown animals can escape predation through their large size and aggressiveness.

Resistant Stages
None known.

Habitat Occupied in GB
Brown rats are typically commensal with man in a wide range of urban and agricultural habitats. They are abundant in sewers, refuse tips, warehouses and storage barns, along water courses, and in hedge-bottoms on farmland. Populations also occur independently of humans in more natural habitats, such as saltmarshes.

Distribution: *Rattus norvegicus*, Brown Rat
Brown rats occur almost throughout GB, being absent only from exposed montane areas and from some smaller offshore islands. The species has spread almost worldwide, with the exception of some tropical and subtropical areas.

Impacts: *Rattus norvegicus*, Brown Rat

Environmental Impact
The abundance and ubiquity of brown rats mean they have considerable impact on ecosystems, for example as predator and prey, and as competitors for food, shelter and nest sites. The arrival of brown rats displaced ship rats, which had occupied a similar niche, from mainland GB. Their presence on islands can lead to extinction of seabird colonies. Worldwide, rats have contributed to many extinctions or near-extinctions of island endemic species.

Health and Social Impact
Brown rats can spread a number of diseases to humans through their bites and droppings, including leptospirosis (Weil's disease), and their ticks can carry Lyme disease. Weil's disease is a significant public health hazard to anyone entering fresh water in rat-infested areas, the causative bacteria (*Leptospira*) being able to infect humans through broken skin. Inside buildings, rats can cause considerable nuisance through fouling surfaces and water tanks, gnawing timbers and wiring, and through their noise and aggression.

Economic Impact
Brown rats have major economic impacts. They consume and contaminate human food, both as growing crops and in storage, and damage grain storage bags. In buildings, they gnaw access holes in woodwork and pose electrical hazard by gnawing into cables and insulation.

References & Links: *Rattus norvegicus*, Brown Rat

Identification

Biology, ecology, spread, vectors

**Management and impact**


**General**

