

Brown Rat

Rattus norvegicus (Berkenhout, 1769)

Order: Rodentia

Despite its relatively recent arrival in the British Isles, the brown rat is one of our most numerous mammals and is frequently associated with human habitation and agricultural areas. The coat is grey or brown and shabby. Males may be up to 28cm long with a tail of a further 21cm and weigh as much as 500g, although the average weight of females is 250g and 350g for males. The droppings are black or brown tapered cylinders 15-20mm long and about 5mm thick, they have an unpleasant smell. The footprints are similar to those of the squirrel with four toes on the front and five toes on the hind foot and up to 45 mm long (hind foot). Rats are frequently found near water and may make burrows joined by worn tracks. The burrows are 6-8 cm in diameter and there may be excavated earth in front.



Photograph: Nigel Climpson

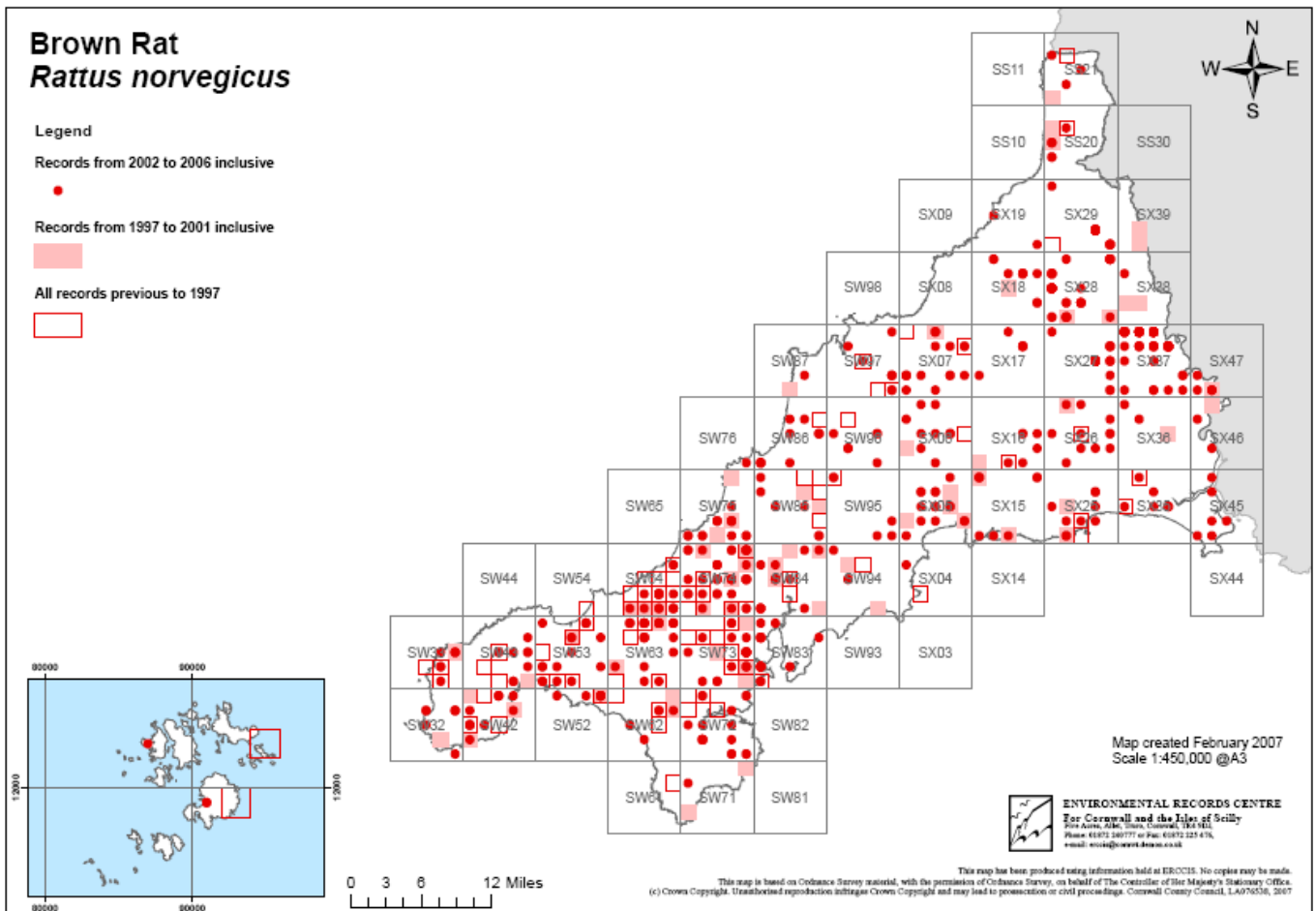
Rats breed throughout the year, females producing up to 5 litters/year of 6-11 blind naked pups which grow rapidly, are weaned at 3 weeks, and are capable of breeding at 3 months. A single pair can potentially produce 2000 progeny in a single year.

The social structure of the brown rat changes as the population density increases – at low density the animals live in communal burrows with a single male and up to 6 related females. As densities increase a single male becomes dominant over larger communities but females will mate with any available males. Older rats often seem to allow young rats to test environments and food – making the older animals difficult to trap or poison.

Occurring in most habitats, the brown rat is particularly associated with farm buildings, rubbish dumps, sewers, warehouses and urban waterways.

Brown rats are extremely omnivorous – they will eat grain, fruit, eggs, other animals, and human foodstuffs.

Young rats are predated by foxes, domestic cats, and birds of prey but adult rats are rarely taken and mainly die as a result of road traffic or pest control. In the UK the primary approach is the use of poisons, mainly anticoagulants – initially based on Warfarin but now in their second generation. Rats learn to avoid fast-acting poisons, hence the use of anti-coagulants which take about a week to act after ingestion. The use of poisons is restricted by increasing evidence of physiological, and to some extent behavioural resistance, as well as the issues of impacts on predators. Trapping and shooting of rats are effective control measures for smaller infestations. The best approaches are often the simplest – good hygiene, and ensuring buildings are rodent-proof. However, it seems likely that brown rats will be with us for the foreseeable future. A widespread pest of agricultural, commercial and domestic premises and subject to extensive control measures, the brown rat has been responsible for massive environmental damage in many areas of the world where it has had major impacts on indigenous fauna, especially ground-nesting bird species. There are estimated to be about 60 million rats in the UK.



The map shows that the brown rat is widespread but generally under recorded across Cornwall. Locally, the species is well recorded.

Number of records per date class
 2002 to 2006 inclusive 572
 1997 to 2001 inclusive 76
 All records previous to 1997 130
Total 778

The brown rat is indigenous to Eastern Asia but has spread worldwide and it is one of the major mammalian pest species. The brown rat first arrived in Europe in the 17th and 18th Century. In contrast to the black rat, it prefers damp conditions and swims well and took full advantage of the waterways and sewers to spread rapidly.

Survey Methods

- Road kill reports
- Pest control

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Did you know?

Also known as sewer or wharf rats, brown rats displaced black rats from much of the country and this had one advantage in reducing the reservoir of plague. It was thought that they originally arrived from Norway (hence the scientific name), although it is more likely that they came via Denmark, they were also known as the Hanoverian Rat, since they first appeared during the reign of George I.

Key references