



Native Rodents

Rodents comprise a vast variety of species characterised by having only a single pair of continuously growing incisors in both the upper and lower jaws. There are over 2,000 described species, which include such diverse species as porcupines, squirrels, guinea pigs, beavers, and, of course, numerous species of rats and mice.

Over half of all mammals on Earth are rodents/ These highly successful mammals are represented in Australia by only one of the 24 families of the Order Rodentia — the Muridae (rats and mice). Further, all of these are relatively 'recent' arrivals, having entered Australia from the north no more than 15 million years ago.

Waves of invasion

Rodents arrived in Australia in two major waves of migration from the eastern Indonesian islands. Most entered Australia between 10 -15 million years ago and are known as the 'old endemics'. The second wave, known as the 'new endemics', occurred about two million years ago and included the swamp rat. In addition, three species were brought in with Europeans.

Placental mammals

Rodents are placental mammals; that is, they do not possess a pouch like the well-known marsupials or lay eggs like the other major group of mammals, the monotremes (platypus and echidna). Placental mammals include a wide range of familiar species, such as dogs, bears, deer, and, of course, ourselves. However, the only other group of placental mammals to occur naturally in Tasmania are bats. Interestingly, Australia, and biogeographically related New Guinea, are the only countries where all three major groups of mammals occur.

Tasmania's rodents

There are about sixty species of rodent so far described in Australia, with new species still occasionally being found. In Tasmania, only five species of native rodents occur. The relatively low number of species in Tasmania is partly a reflection of the island's temperate latitude and its biogeographical isolation from mainland Australia during interglacial periods.

Contrary to popular belief, our native rodents do not carry diseases, such as plague and leptospirosis, as do some species of non-native rodent, particularly the black rat. In fact, our native rodents, like many mammals, spend a very considerable amount of their time fastidiously washing and grooming their fur. Indeed, they devote more time to grooming than people do!

Water rat (*Hydromys chrysogaster*)

The water rat, as its name implies, is well adapted to its semi-aquatic life with webbed feet and water-repellent fur. Along with the platypus, it is the only Australian mammal specialised for an aquatic niche.

The water rat is relatively large, weighing over 600 grams and reaching a length of up to 60 cm from nose to tail tip. Its thick, soft fur is usually dark brown above and golden-orange below.

The water rat is common in rivers, streams and estuaries throughout the state. Although primarily nocturnal, it may be seen during the day. Unlike most rodents, the water rat is a predator. Its diet includes aquatic insects, fish and crustaceans.

Breeding can occur throughout the year, with peaks in spring and summer. Gestation is 35 days. As many as five litters, averaging 3-4 young, can be born each year.

Long-tailed mouse (*Pseudomys higginsii*)

The long-tailed mouse is the only species of rodent endemic to Tasmania. Although fossil remains indicate that the species was once found in NSW and Victoria, it is believed that the species died out on the mainland due to increasing aridity. The species reaches about 70 grams in weight and, along with the broad-toothed mouse, has a two-tone tail — white below and dark above. The tail is longer than head and body.

The species occurs in rainforest, wet sclerophyll forest and damp gullies. It is particularly common in sub-alpine scree. Its broad diet includes grasses, underground fungi, bryophytes, ferns, seeds, fruit and some insects.

Breeding occurs from late spring to late summer, with one or two litters averaging 3-4 young, being produced each year. Gestation is 33 days. Longevity is about 18 months.

New Holland Mouse (*Pseudomys novaehollandiae*)

The New Holland Mouse is one of only two mammals listed as rare under the *Tasmanian Threatened Species Protection Act 1995*. (The other is the NZ fur seal). It only occurs in low numbers - and much of its habitat is unprotected.

The smallest (25 grams) of our native rodents, the New Holland mouse is very similar in size and appearance to the introduced house mouse. Although it can be distinguished by its slightly larger ears and heavier build, positive identification is based on the absence of a notch on the upper incisors. The house mouse possesses such a notch.

The New Holland mouse is restricted to the few remaining patches of dry coastal heathland and open, heathy forest on Tasmania's north-east coastline. Its diet consists of seeds, insects, fungi, fruit and leaves.

Breeding occurs from late winter to early spring. Gestation is about 32 days. Litter size is 2-6. One litter is produced in their first year of life, and up to four can be produced in their second (and last) year of life.



New Holland mouse. Photo; Billie Lazenby

Broad-toothed mouse (*Mastacomys fuscus*)

The broad-toothed mouse reaches a weight of 150 grams and head and body length of 16 cm. It has a grizzled sandy brown to dark brown coat. It is very similar in appearance to the swamp rat, which can also occur in similar habitat.

The broad-toothed mouse is only known from moorland habitat in western Tasmania, where it feeds on sedges, grasses and seeds. Although also occurring on mainland Australia, the species appears to be restricted to small areas where suitable habitat occurs. Fossil evidence shows that the species was once more widely distributed on the mainland. In Tasmania, the species occurs in the western half of the state.

Breeding occurs from October to March, with up to two litters of 1-3 young per year. The young are weaned when about five weeks old.

Swamp (velvet-furred) rat *Rattus lutreolus*

This common species occurs in a variety of habitats, ranging from wet and dry sclerophyll forests to buttongrass moorlands and coastal heath. It forms extensive systems of runways beneath dense vegetation.

Grasses, sedges and underground fungi form the main component of the diet, although insects are occasionally taken.

Breeding begins in spring and continues until autumn. More than one litter, of 3-5 young, may be raised per season. Females born early in the season may give birth themselves during the same breeding season, as sexual maturity is reached at three months. Longevity is about 18 months.

Introduced rodents

Three species of rodent have been introduced to Tasmania — the house mouse (*Mus musculus*), brown rat (*Rattus norvegicus*) and black rat (*Rattus rattus*). It is likely that these species entered the state almost as soon as the first European explorers touched ground — perhaps even before!

Introduced species are the rodents most likely to be seen in urban areas. Native species are not normally seen in the urban environment, with the exception of the water rat and, very rarely, the swamp rat.

The brown rat is particularly common in urban areas, whereas the black rat also occurs in rural areas and adjacent bushland. The brown rat has a more slender build, smaller ears, shorter tail and, in the wild, a more aggressive disposition than the black rat.

In contrast to our native rodents, the black rat is known for the role it plays in the spread of disease. It was the animal responsible for the plague which ravaged medieval Europe.

The house mouse is widespread through Tasmania, mainland Australia and, indeed, much of the world. It is one of the most successful living mammals.

Further information

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