

European wild rabbit (*Oryctolagus cuniculus*)

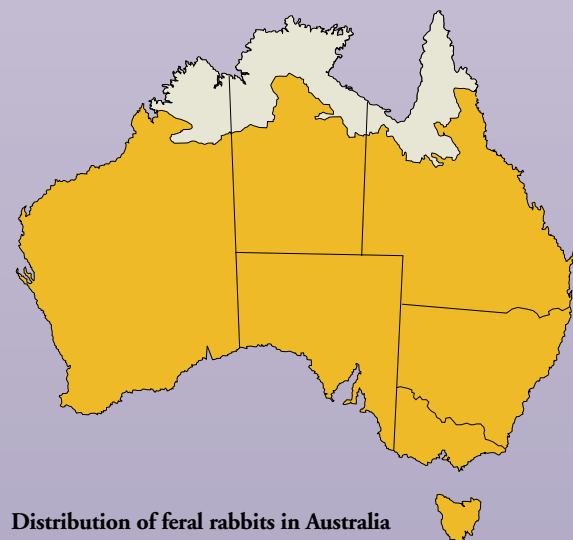


The feral European rabbit is one of the most widely distributed and abundant mammals in Australia. It causes severe damage to the natural environment and to agriculture. Feral rabbit control is complicated because of welfare and harvesting issues, and because both native and introduced predators feed on feral rabbits in many parts of Australia. A combination of traditional control techniques and biological control holds the best promise for reducing feral rabbit populations and minimising the damage they cause.

History

Domesticated rabbits arrived in Australia with the First Fleet. In Tasmania, feral rabbits were abundant on some estates as early as 1827. On the mainland, Thomas Austin freed about a dozen on his property near Geelong, Victoria, in 1859. From there they spread, reaching the Queensland – New South Wales border by 1886 and covering most of their present range by 1910. This was despite the Western Australian Government's 1700-km rabbit-proof fence, built between 1901 and 1907.

Today feral rabbits occur throughout Australia, except in the northernmost areas.



Distribution of feral rabbits in Australia

Adapted from: Clarke GM et al (2000). *Environmental Pest Species in Australia*. Internal report, Department of the Environment and Heritage, Canberra.

Ecology

Feral rabbits occur in many different habitats across Australia, ranging from deserts to coastal plains — wherever there is suitable soil for digging warrens. They are scarce in areas with clay soils and abundant where soils are deep and sandy, such as in the north-east of South Australia. In arid areas, feral rabbits need access to water, but elsewhere they can often obtain enough moisture from their food.

Feral rabbits are night-time grazers, preferring green grass and herbs. They also dig below grasses to reach roots and seeds. In the breeding season, feral rabbits form territorial groups made up of one to three males with up to seven females, led by a dominant pair. After breeding, the groups break up again, except for the dominant pair.

Feral rabbits can breed when they are only four months old and at any time of the year, particularly when food is in good supply. In favourable conditions, they can produce five or more litters in a year, with four or five young in each litter. Even in unfavourable conditions, they can produce one or two litters a year.



Rabbits can strip off bark or even climb trees and shrubs to reach succulent leaves and twigs, especially in areas where no water is readily available. Photo: Lynn Pedler

Impact

Feral rabbits compete with native wildlife, damage vegetation and degrade the land. They ringbark trees and shrubs, and prevent regeneration by eating seeds and seedlings. Their impact often increases during drought and immediately after fire, when food is scarce and they eat whatever they can. Feral rabbits may have caused the extinction of several small (up to 5.5 kilograms) ground-dwelling mammals of Australia's arid lands, and have contributed to the decline in numbers of many native plants and animals. In the Norfolk Island group, feral rabbits and goats reduced Phillip Island to bedrock, leaving at least two plants locally extinct. Feral rabbits even threaten colonies of seabirds such as Gould's petrel.

Control

The control of feral rabbits is an ongoing and complex problem, as they can be of benefit in some situations. They are a resource, eaten by some Aboriginal communities and harvested by commercial shooters. Foxes prey on feral rabbits, so removing them can increase the number of native animals eaten by foxes. Control techniques must be humane and harmless to non-target animals. Traditional control techniques include destroying places where feral rabbits shelter, and shooting, trapping and poisoning. Rabbit-proof fencing can be effective but is expensive to install and maintain.

Attempts at biological control include use of the myxoma virus to cause myxomatosis, which only affects rabbits. Released in 1950, the virus initially killed over 90% of feral rabbits that caught the disease, but some developed resistance, making the pathogen less effective. However, myxomatosis still keeps populations to an average of 5% of former numbers in wetter areas, and 25% in arid areas. The more recently introduced rabbit calicivirus disease has proved more effective in wetter than in drier parts of the country. Biological control methods work best if they are followed up with traditional control techniques such as digging up the warrens.

Research continues to focus on improving the effectiveness of existing viruses and discovering new ones for feral rabbit control. Researchers are also looking at ways to improve traditional feral rabbit control techniques, and to ensure that control is applied in a strategic way that achieves targeted, sustained results.



Rabbits reduced Phillip Island to a wasteland (left), but recovery was spectacular after the rabbits were eradicated (right).
Photos: Department of the Environment and Heritage

How the Australian Government is dealing with a national problem

Competition and land degradation by feral rabbits is listed as a key threatening process under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). Under the EPBC Act the Australian Government in consultation with the states and territories has developed the *Threat Abatement Plan for Competition and Land Degradation by Feral Rabbits*.

The threat abatement plan aims to reduce the impact of feral rabbits on native wildlife by:

- implementing rabbit control programs in areas of high conservation priority
- encouraging the development and use of innovative and humane rabbit control methods
- educating land managers and relevant organisations to improve their knowledge of rabbit impacts and ensure skilled and effective participation in control activities
- collecting and disseminating information to improve understanding of ecology of rabbits in Australia, their impacts and methods to control them.

Feral rabbit control programs also need to be coordinated with other activities that may be taking place, including the on-ground protection of threatened plants and animals and control of other invasive species such as feral cats and foxes. The threat abatement plan provides a framework that enables the best use of the resources available for feral rabbit management. The Australian Government works with the states and territories to deal with this national problem.

More information about the threat abatement plan can be found at <http://www.deh.gov.au/biodiversity/threatened/tap/rabbits/index.html>

Further reading:

Williams K, Parer I, Coman B, Burley J and Braysher M (1995). *Managing Vertebrate Pests: Rabbits*. Bureau of Resource Sciences, Canberra.

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