



# Rabbit Biocontrol

## Introduction of Rabbits to Australia

Rabbits came to Australia with the First Fleet, and a second release of 24 rabbits occurred in Victoria in 1859. Within 70 years they had spread across 70% of Australia's landmass. They are prolific breeders, with populations increasing 7-10 fold in a good season. Rabbits are highly effective invaders in the Australian landscape. As well as the conventional methods of control such as shooting, baiting and trapping, biological control is an important method for limiting rabbit numbers.

## What is Biological Control?

Biological control involves using organisms that control the pest species in the natural environment. The two main biological control agents used to control rabbits in Australia are myxomatosis and calicivirus.

## Myxomatosis

Myxomatosis (a virus—Leporipoxvirus) was first released in Australia in the 1950s. The disease is spread by direct contact with an infected animal,

**24 rabbits were brought to Victoria and released in 1859. Seventy years later rabbits were spread across most of Australia.**

**As both the myxoma virus and rabbits evolved, the myxoma virus became less effective.**



natural resource  
management program



wheatbelt  
natural resource  
management

Red Card For Rabbits and Foxes

269 Fitzgerald Street, PO Box 311, Northam, WA, 6401

ph: (08) 9670 3113 | (08) 9670 3140

redcard@wheatbeltnrm.org.au | [www.wheatbeltnrm.org.au](http://www.wheatbeltnrm.org.au)

or by being bitten by fleas or mosquitoes after they fed on a contagious rabbit. However, as both the myxoma virus and rabbits evolved, the myxoma virus became less effective.

## Rabbit Haemorrhagic Disease Virus (Calicivirus)

In the 1990s the calicivirus RHDV 1 was determined to be a suitable biological control agent for rabbits, and experiments were conducted on an island off the coast of South Australia. In 1995 the virus escaped the island via an insect vector (most likely bushflies and/or mosquitoes). Fortunately the escape of the virus didn't cause any harm to the natural environment, and was indeed very beneficial, killing up to 98% of rabbits in arid areas.

Rabbit kittens usually don't die from the calicivirus until 3-4 weeks of age. They are most susceptible after 12 weeks of age. Therefore, as most rabbits are born in late winter/spring, the most effective season for calicivirus is autumn/early winter.

Once again the rabbits and the virus began to evolve and during the 2000s the calicivirus became less effective.

In 2010 a new variant of calicivirus (RHDV 2) was discovered in Europe. It is not known how this variant made it to Australia, but it was discovered here in 2015 and gradually spread across the country. This variant had a huge impact on rabbit populations across much of the Western Australian Wheatbelt and hampered the official release of another new strain selected through a government and industry research collaboration.

In 2012 a strategic rabbit biocontrol research program was developed. The latest release of the calicivirus, RHDV1 - K5 occurred across much of the nation in 2017. Release across the Western Australian Wheatbelt, and some other areas of Western Australia, are set for autumn 2018.

Currently rabbits cause over \$200 million in losses to agriculture, but without these biological control agents the cost to agriculture would exceed 2 billion dollars each year. It is estimated that between the two biological control agents, rabbit numbers have been limited to 15 percent of their potential population.

**In arid areas of Australia, there are less mosquitoes, so on two occasions different types of fleas were introduced to act as vectors for rabbit diseases.**

