Rabbits on the rampage for 150 years

The European rabbit was first introduced to the Australian mainland 150 years ago. While populations have waxed and waned with various control methods, the rabbit continues to survive in abundance in Western Australia today.

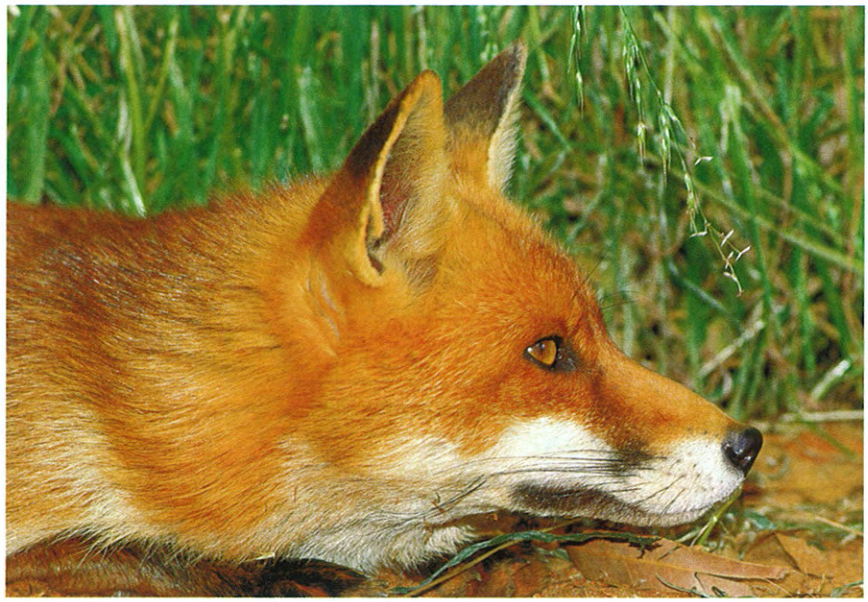
by Samille Mitchell and John Asher

One hundred and fifty years ago this year, an English man in Geelong, Victoria, fancied a spot of hunting and requested 24 European rabbits be sent from England to Australia. The man, Thomas Austin, requested the rabbits as well as five hares, 72 partridges and some sparrows reportedly stating: "The introduction of a few rabbits could do little harm and might provide a touch of home".

Austin's innocent assumption couldn't have been more wrong. This introduction, and probably others that followed, sparked one of Australia's biggest pest plagues.

Rabbits introduced from the First Fleet in 1788 were already on offshore islands and by 1827 feral rabbit populations in south-eastern Tasmania were already in the thousands.

But Austin's introduction had brought rabbits to the Australian mainland—a move exacerbated by rabbits escaping from an enclosure soon after. Within 15 years, the rabbits had reached New South Wales and within another 15 years they had started to invade Queensland. The first rabbits in mainland Western Australia and the Northern Territory were recorded by 1900, though there are reports of rabbits on an offshore island in WA from as early as 1827. Mariners are said to have left rabbits on such islands as a source of food for future visits.



By 1926, an estimated 10 billion rabbits populated the country, causing such a serious agricultural problem that many farms were abandoned.

The impact

The spread of the European rabbit (*Oryctolagus cuniculus*) was marked as the fastest spread of an introduced species anywhere in the world. It also paved the way for the spread of the fox, by providing a reliable food source. But perhaps their biggest impact on the natural environment has been in competing with native animals for food. Because rabbits graze plants close to the ground, they often kill germinating seedlings and prevent regeneration.

In many rangeland areas, as few as four rabbits per hectare can prevent the regeneration of native plants, such as some *Acacia* species. During drought, rabbits can strip bark from shrubs and trees. This increased grazing pressure often results in the loss of vegetation cover, leading to soil erosion and impacting on rehabilitation areas and threatened flora. Digging by rabbits to make warrens may also cause soil erosion and tree losses.

In WA, rabbits are declared pests of agriculture under the *Agriculture and Related Resources Protection Act 1976* and, as such, landholders are required to control rabbits on their properties. They are estimated to cause $200 million in damage across Australia each year.

Curbing the spread

As rabbits started to invade WA the State Government attempted to halt the invasion with the construction of a rabbit-proof fence in 1901. The fence started in Starvation Boat Harbour, about 120 kilometres west of Esperance,

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Main European rabbit.
Photo – Jiri Lochman
Inset Rabbit-proof fence near Latham.
Photo – Courtesy Battye Library/007245D

Above Rabbits paved the way for the spread of the red fox by providing a food source.
Photo – Dennis Sarson/Lochman Transparencies

Left Rabbit hunters in Northampton, 1947.
Photo – Courtesy Battye Library/001336D

Right The calicivirus had minimal impact on rabbits such as this one in the south-west.
Photo – Dave Watts/Lochman Transparencies

and stretched 1,833 kilometres to Eighty Mile Beach, where the Great Sandy Desert meets the Indian Ocean.

Despite the magnitude of this ambitious project, rabbits continued their invasion. Two more fences were built—one starting 120 kilometres further west of the original fence and running 1,160 kilometres north to join the first fence near Yalgoo and the other stretching 258 kilometres west from the original fence to Kalbarri.

However, the rabbit was undeterred and it wasn't long before they inhabited all suitable habitat types throughout the State. Their populations remained largely unchecked until the 1950s when the myxoma virus was introduced.

Myxomo virus

At its introduction, myxomo virus was hailed as the answer to rabbit control. The virus was spread by mosquitos and rabbit flea throughout rabbit populations across the country. Later, the European rabbit flea and the Spanish rabbit flea were introduced and continued the spread of the virus. While the virus did have an impact, it didn't kill all rabbits in a population (the Department of Agriculture and Food suggests that death rates vary from 30 to 90 per cent but are typically about 50 per cent). What's more, if an infected rabbit survives the virus, it acquires lifelong immunity to the disease. While sporadic outbreaks of myxomatosis still affect rabbit populations, a general resistance has reduced its efficiency. It wasn't long before scientists started searching for another control agent.

Calicivirus

Calicivirus, also known as the Rabbit Haemorrhagic Disease Virus, was released in WA in 1996 after undergoing rigorous testing on livestock and native species. It was deliberately released in WA about the same time as it started to appear in WA from rabbits already infected by the virus in other parts of the country. The virus spreads by biting insects and some species of fly.

At first, the virus was thought to be having a massive impact, slashing some rabbit populations by up to 90 per cent. However, other populations seemed relatively immune to the virus's spread, particularly in higher rainfall areas. So, while the virus has helped keep rabbit populations in check throughout the agricultural region and the rangelands, it has had little impact in the higher rainfall areas of the south-west.

While outbreaks of both calicivirus and myxomo viruses continue to occur, they are regarded as an aid in rabbit control that needs to be supplemented by other control measures.

The Department of Environment and Conservation will continue to manage rabbit infestations that threaten significant conservation values using the most appropriate and effective management option for the situation. The department also works with its neighbours under the guidance of its Good Neighbour Policy and recognises that a coordinated approach with landowners is essential to control rabbits and other pest animals.

Rabbit status today

The distribution and abundance of rabbits is mainly dependant on favourable rainfall conditions and varies by season and year. However, farmers and scientists are concerned that there appears to be a gradual increase in rabbit numbers in parts of Australia, possibly due to an increasing immunity to the calicivirus within populations.

The increase may be exacerbated by the apparent success of the calicivirus during the past 10 years and a consequent reduction in other conventional control efforts. Climate change may also influence the future distribution and abundance of rabbit populations in Australia.

To help improve knowledge of rabbit numbers, a host of organisations has launched a web-based survey called RabbitScan. The survey encourages landholders to register data about rabbit sightings and warrens, which will go on a map showing the distribution and abundance of rabbit populations in Australia. The map will help with the future management of rabbit populations by identifying where they most occur. For more information on RabbitScan, visit the website at www.rabbitscan.net.au.

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