

Passing the Baton: Engaging the next generation in rabbit management.

P.R. Day

Foundation for Rabbit-Free Australia Inc.

Corresponding author: Peter Day exec@rabbitfreeaustralia.org.au

Abstract

Biological controls (myxomatosis, rabbit fleas and calicivirus) have been very successful in curtailing Australia's population of wild European rabbits. Native flora and fauna have flourished, rangeland managers have been able to manage their properties free of a competitive herbivore and billions of dollars of benefit have been gained.

Yet rabbits persist and even in low densities they shape whole ecosystems through selective feeding, while the effectiveness of bio-controls inevitably wanes.

Rabbit-Free Australia is looking to 'pass the baton' to generations who have never seen the harm rabbit plagues can cause and haven't been trained in detecting their influence on landscapes.

Keywords: rabbits, bio-controls, next generations

Introduction

Extensively researched biological controls have successfully curtailed populations of wild rabbits leading to complacency and a lack of awareness of rabbit issues and management techniques. Foundation for Rabbit-Free Australia hopes to re-engage and connect diverse stakeholders to ensure wild rabbits are not overlooked or under-rated, and ensure steps are taken to contain the risk of resurging rabbit populations and better address the harm caused by even low densities of rabbits.

Discussion

About rabbits

Key points about wild rabbits:

- Rabbits are communal, territorial animals, centred on warrens that provide shelter from the elements and predators and are nurseries for young rabbits. Warren destruction is key to inhibiting rabbit breeding.
- Rabbits are preferential eaters. Their small mouth and 'chisel-like' front teeth enable them to be selective grazers, choosing plants that are most palatable to them. Some plant species are 'like chocolate' to rabbits and even in very low numbers they will prevent whole generations of plant recruitment of those species.
- Rabbits are renowned breeders with boom-then-bust populations. In good seasons they breed rapidly and populations boom, only to crash when drought or disease strike. When good conditions return, they out-breed

other herbivores, dominating emerging pastures and determining which species survive (the less palatable) and which don't.

Are rabbits still a problem?

The harm caused by rabbits varies with their density, ranging from changing plant diversity at low densities to contributing to total grazing pressure and over-grazing at higher densities.

Rabbit abundance and density estimate (Cooke B et.al. 2014); plus environmental evidence or impact.			
Rabbit dung sighted in a 15 minute walking survey	Rabbit abundance score	Approximate density (Rabbits/ha)	Environmental evidence or impact
None found.	0	0	Good ground cover and plant species diversity.
Isolated pellets and pellets in clumps of 5-10, at least 10 metres apart.	1	0.5	Seedlings of highly palatable species absent.
Scattered pellets and pellets in clumps, less than 10 metres apart.	2	1	Cover of native plants reduced by 50%. Rabbits eating as much as 1 beast or 9 sheep / sq km.
Pellets are common, in larger clumps and occasional buck-heaps, in half the area surveyed.	3	2	Seedlings of moderately palatable species absent.
Pellets are abundant, in large clumps and buck-heaps; though not across the entire area surveyed.	4	5	Cover of native plants reduced by 90%. Rabbits eating as much as 5 head or 45 sheep / sq km.
Pellets are very abundant, and buck-heaps are always apparent.	5	10 or more	Absence of young native shrubs. Unpalatable weeds common. Soil heavily disturbed.

Figure 1 Table to score rabbit abundance and assess likely impacts.

Because rabbits shape plant biomass and composition, help sustain feral predators, and disturb soil, they send ripples of influence through entire landscapes. The interconnected benefits of control are illustrated in Fig.2.

Benefits of rabbit control

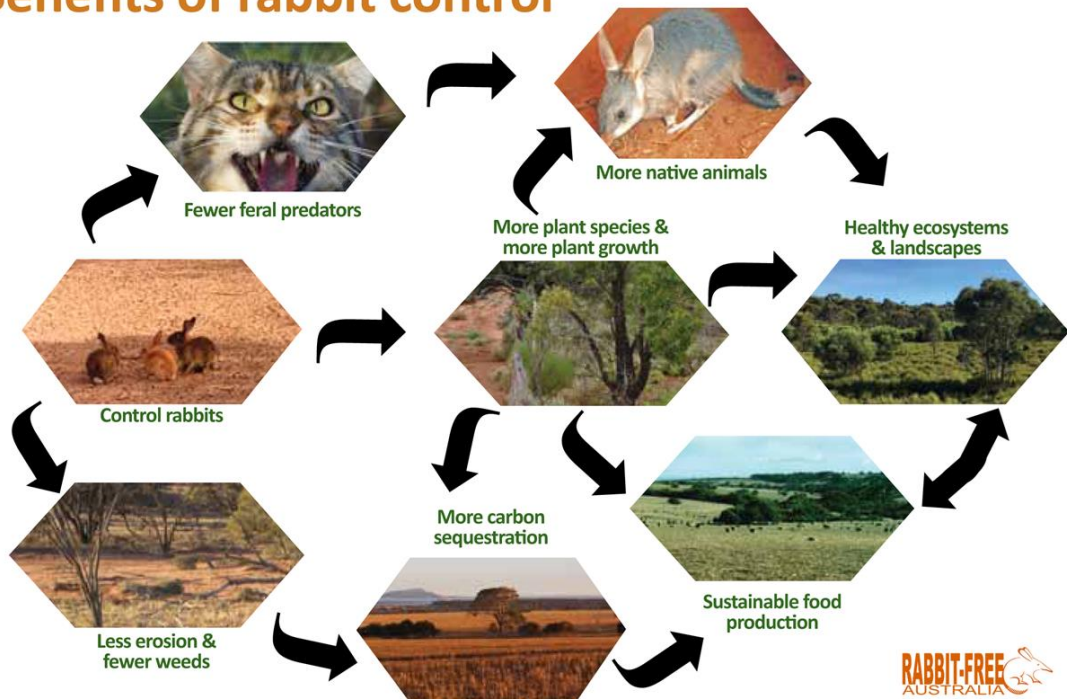


Figure 2 Rabbits impact landscapes from the bottom up.

Whether rabbits are considered a problem or not depends on their numbers (density) and the objectives of land managers.

Hasn't calici fixed them?

Bio-controls rarely do the entire job, with additional measures needed for effective pest control (Fig. 3). For rabbits, bio-controls are best considered a very effective 'knock-down'; reducing numbers to controllable levels as part of a three-phase program. Examples of common control techniques follow.

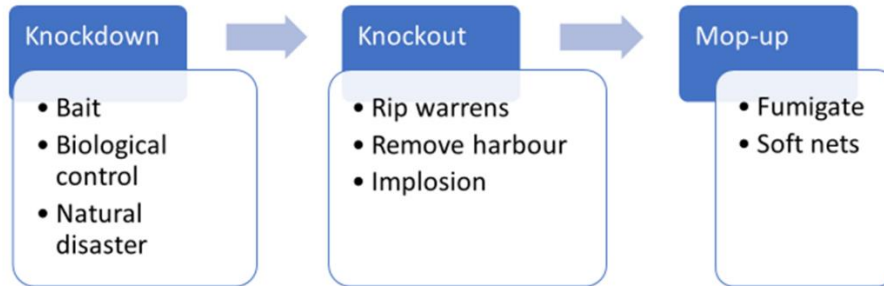


Figure 3 Recommended phases of rabbit control.

The more rabbits breed, the more risk there is of the virulence of bio-controls declining and/or resistance in rabbits increasing.

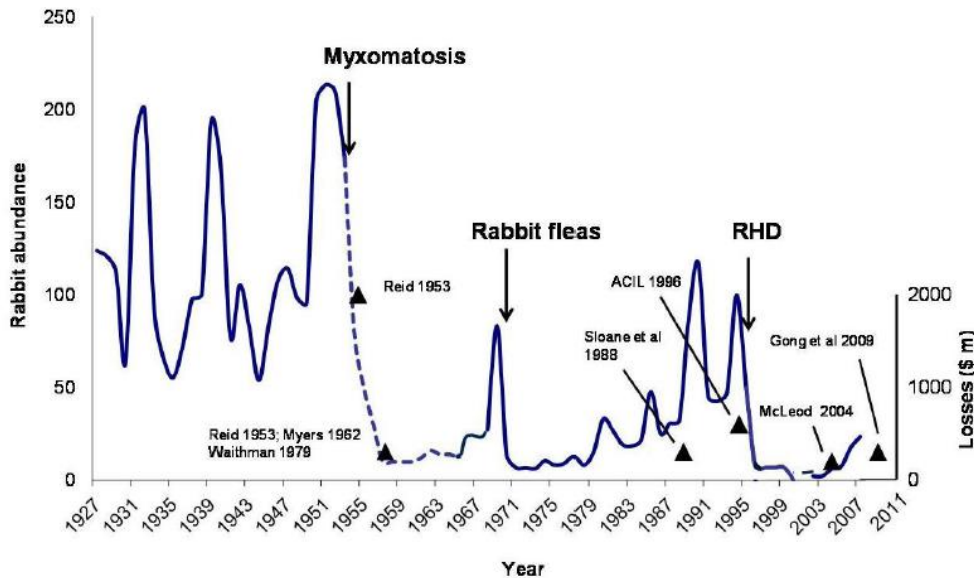


Figure 4 Changes in rabbit abundance following the release of bio-controls (after Cooke et.al., 2013).

Given the extensive lead time associated with the development and trialling of any new biocontrol it is important to limit rabbit breeding, and to support a pipeline of research projects exploring and developing next-gen biocontrols.

Networks and Collaboration

Concerned that rabbits were being under-rated, with consequent under-resourcing of research and control effort, Rabbit-Free Australia initiated what it calls a 'national conversation' – interviewing as many people and organisations as possible to better understand attitudes to rabbits, issues, and any opportunities for them to assist. It led to:

- An annual Rabbit R&D Webinar, in conjunction with the Centre for Invasive Species Solutions (CISS), to help bridge a gap between research and practice.
- The Australian Rabbit Managers Network, an informal opportunity for invited rabbit practitioners from across the nation to share ideas and information on rabbit control, again in collaboration with CISS.
- A trial on-line forum, focused on peri-urban rabbit control, to test the value of such measures to link local rabbit managers with their peers in other states.
- Attendances at national conferences, talking to people 'in their patch'.
- A rolling review of the Rabbit-Free Australia website commencing with About Rabbits and Rabbit Control (see rabbitfreeaustralia.org.au).

The Foundation has also recommitted to supporting Easter Bilby as the champion of all the plants and animals disadvantaged by wild rabbits. The 'Bilbies not Bunnies' slogan helps raise awareness and highlights the importance of rabbit control for the recovery of Australian landscapes and initiatives such as Nature Positive.

Melba's Chocolates have joined Haigh's Chocolates in promoting the Easter Bilby story and the Foundation has instigated the development of what is intended to be a series of children's books telling the stories of the plants and animals harmed by rabbits. It is hoped to generate a new 'Easter Bilby's Friends' story each year, locating it in different regions of Australia and featuring different plants and animals.

Conclusion

For Rabbit-Free Australia, 'Passing the baton' means finding new ways to communicate nationwide – raising awareness, sharing knowledge and lending support to each other. Through networks, Easter Bilby and Easter Bilby's Friends it encourages everyone involved in rabbit management to use the pre-Easter months as a time to:

- Raise awareness of rabbits; their impacts, control options and the benefits of rabbit control,
- Promote local control programs; share information about what's happening and the services or assistance available to land managers,
- Issue a 'call to arms'; invite people to get involved in rabbit control.

More information on rabbits, rabbit control and Easter Bilby is available via the Rabbit-Free Australia website, along with opportunities to become a member to access newsletters and support the Foundation. Anyone wanting to join the 'national conversation' can Contact Us.

References

Cooke BD, Chudleigh P, Simpson S & Saunders G (2013) *Economic benefits of the biological control of rabbits in Australia*. **Australian Economic History Review**.