

Keys to rabbit control

Rabbit control isn't just about reducing rabbit numbers. It's about understanding the harm they are causing and developing a plan that will stop the damage occurring. Successful rabbit control results from a mix of sound technical skills and good planning. For effective control it is imperative to control rabbit breeding and to explore ways to make their environment less inviting and conducive to breeding.

One rabbit in 2 ha will prevent the regeneration of palatable plants, so 'just a few' rabbits are enough to cause environmental harm, and if breeding isn't curtailed, then 'just a few' surviving rabbits can quickly become many, causing significant harm.

If you see a rabbit, you have a rabbit problem.

Use a mix of techniques

A key to effective rabbit control is using a mix of techniques in a staged program that is:

- well timed (e.g. taking advantage of low rabbit numbers) and
- well sequenced (e.g. starting with a method suited to a broad scale, then progressively using methods suited to smaller areas or sites with fewer rabbits).

A series of controls that build upon each other optimise the efficiency, effectiveness and legacy of rabbit control work, while reducing the risk of building immunity to biocontrols in rabbit populations.

When possible, a 3-step control program is recommended.

Knockdown: Control rabbits when their numbers are lowest. Start with something that has broad impact on their population, like baiting (1080 or pindone), taking advantage of a burst of



locally active bio-controls (myxomatosis or the RHDV2 strain of calicivirus), or work with nature (during a drought or immediately after fire or floods). If naturalised biocontrols aren't present and rabbits aren't breeding, baiting with RHDV-K5 is an option.

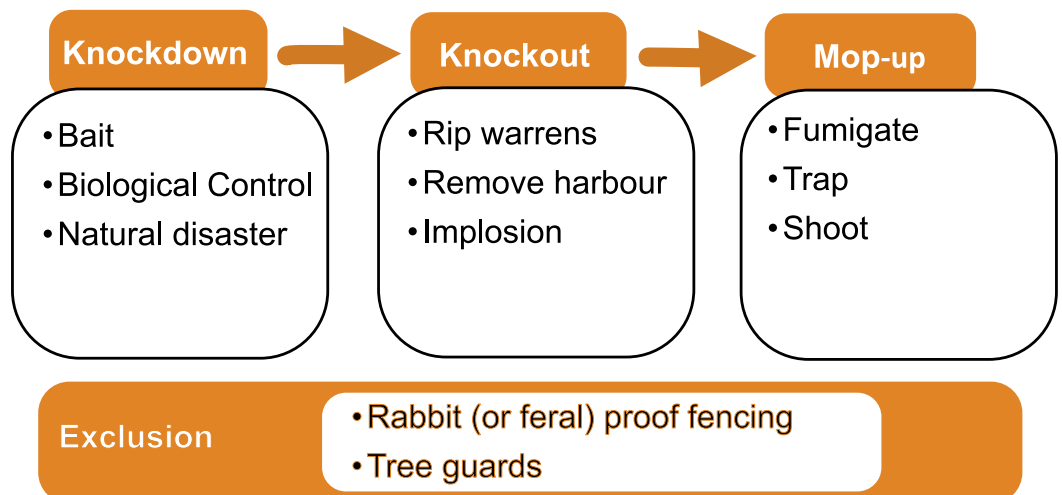
Knockout: Make conditions unsuitable for rabbits and stop them breeding by destroying warrens or removing harbour that provide safety and nesting sites. This step prevents re-infestation and ensures the benefits of rabbit control flow-on for many years, making initial investments even more cost-effective.

Mop-Up: Monitor for any surviving or re-infesting rabbits and mop-up with site specific techniques like fumigation, trapping or shooting.

See Integrated rabbit control (page 3) for more detail.

If control isn't feasible in all areas, protect important assets by excluding rabbits with fences or guards, which can be designed to keep other vertebrate pests out as well. Rabbit-proof fencing can also be used to protect treated areas and stop reinfestation.

Common examples of integrated rabbit control



Select from biological, chemical and physical options.

Key steps in rabbit control



ASSESS

- Define the problem
- Measure the problem

PLAN

- Scope the plan
- Develop the plan

MANAGE

- Administer
 - Knockdown
 - Knockout
 - Mop-up
- Monitor & respond

IMPROVE

- Evaluate
- Revise

Planning

Planning is a key to getting rabbit control methods, timing and sequencing right for long-lasting benefit. If rabbit control is done poorly, at the wrong time, or out of sequence, it will be ineffective and leave a persistent problem requiring renewed effort.

Assess: Start by being clear about the problems caused by rabbits and focus on how to rectify them. It will require information on where they are feeding, where they breed, and any triggers that have caused an increase in their numbers or the harm they inflict.

Plan: Decide what scale you will work at, whether to work with neighbours across boundaries, and whether you'll tackle other pest animals (e.g. feral cats) or weeds (e.g. thickets providing rabbit harbour), then develop your plan. Be clear on your objective and choose the control techniques that suit your situation. Work out what you'll do where and when – and how you'll keep track of progress and outcomes.

Manage: Put your plan into effect and keep records as you go, including before, during and after photos. Check how well every action has been done and how effective it has been – and immediately redo any aspects that weren't as effective as required, e.g. dealing with any missed warrens or stray rabbits that survived.

Improve: Aim for continual improvement in your rabbit control program. Regularly review progress and effectiveness and whether the rabbit damage that initiated your actions has been resolved or not. Learn from experience and don't be afraid to try new approaches when needed.

'Best fit' control

Apply these key principles to decide which controls you'll use, in what order and when.

Disrupt habitat and breeding

Rabbits breed whenever sufficient high protein feed (such as green grass) is available. Blind, hairless 'kittens' are born in nests lined with grass and belly fur within the warren or a short single-entrance burrow. The young are weaned and begin to emerge from the warren after about 18 days, leaving the nest when they are about 23 to 25 days old.

Warrens and nests are crucial to rabbit breeding, and hence to rabbit control. Above-ground shelter such as thick vegetation (e.g. blackberries or gorse) or debris (e.g. timber piles or rock heaps) is another environmental factor conducive to rabbit survival.

Disrupting breeding and removing unnecessary shelter is a priority for sustained rabbit control.

Act when numbers are lowest

Most rabbit control inevitably involves reducing rabbit numbers. Beginning when numbers are already low is a great head-start. Low numbers can also be a sign of stress; presenting an opportunity for effective rabbit control.

Take advantage of seasonal lows and natural disasters. In temperate areas, begin control in summer when numbers are low rather than spring when rabbits abound and are breeding, with kittens at their peak.

Natural disasters like drought, fire or floods can also present opportunities for rabbit control:

- populations can crash during prolonged drought and warrens may be easier to rip
- fire can leave hard-to-detect warrens exposed and accessible
- floods may concentrate rabbits into more controllable locations.

Controlling rabbits during or immediately after a natural disaster removes their negative pressure on rebounding vegetation and gives all plant species the chance to regenerate, especially any that are targeted by the preferential grazing of rabbits.

Outbreaks of rabbit diseases, such as myxomatosis and calicivirus, can serve as a 'knockdown', enabling opportunistic controls to be applied when the 'starting population' is low.

CALENDAR	Spring	Summer	Autumn	Winter
Work Plan				
Bait				
Rip				
Fumigate				
Monitor				

Document your plan.

If rabbit numbers aren't low to begin with, the first steps in effective control should be 'knockdown' actions that will lower numbers to more manageable levels and increase the effectiveness of subsequent control efforts.

Seek synergies

Different rabbit control methods work best in different circumstances, scales and combinations. Some have good synergies when used in the correct sequence, e.g. bait, rip, fumigate. Sometimes referred to as the 'gold standard' the approach uses poison to knockdown rabbit numbers and is then followed by warren destruction (the single most effective long-term control action), with the small number of remaining rabbits 'mopped up' by fumigating any untreated warrens.

From that example, if poisoning (which can be quite cost-effective at large scales) was used on its own (and warrens left untouched) it may only be a matter of time before residual rabbits re-established in abandoned warrens and once again bred up to pre-control numbers. Fumigation (which can also leave warrens intact and available for re-use) is a relatively high-cost, labour intensive operation better suited for targeted use or to mop-up in smaller areas than to broadscale application.

Well-timed rabbit control

As locally suitable control methods are selected and sequenced, think about the timing of operations. Besides taking strategic advantage of low numbers or other vulnerabilities (e.g. laying poison baits outside of breeding seasons when there is less feed available and rabbits travel further, being more likely to encounter and take baits), it is important to time rabbit control

so each phase has time to work before the next control method is applied. As an example, allow a few weeks for poisoning to take effect before ripping – but conduct the ripping before surviving rabbits are breeding up again.

Planning should also ensure that planned actions fit with other property work programs – ensuring labour and other resources will be available as required. Make rabbit control part of annual work plans.

Prioritise

It may not be feasible to control rabbits over an entire property in one campaign, e.g. extensive holdings or areas of high conservation or heritage value. In such cases, prioritising different areas (e.g. by discrete rabbit populations or land type, or the value of assets requiring protection) is a way of making important progress and of thinking through different approaches for different areas.

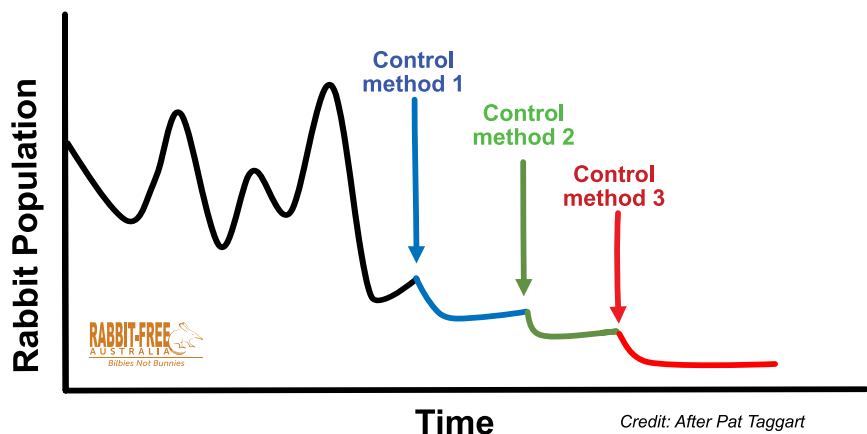
An example from extensive holdings is having plans ready to hit rabbit refuge areas during drought – those sites where rabbits have notoriously been able to hang-on then radiate from and re-populate harder country at later (better) times. Another priority may be areas of highly productive land on farms (or the prime vegie patch in an urban backyard), where control may be targeted or exclusion fencing used. Similarly, areas of high conservation or cultural heritage value could be assets needing specially tailored approaches to control rabbits with minimal environmental impact.

Ease may be another factor. The first step is often hardest, so make a start where it is easiest – especially if that means a larger area can be covered and be relatively quickly made 'rabbit-free'.

The aim of integrated rabbit control



The Aim of Integrated Rabbit Control



Integrated rabbit control

A single control method is rarely sufficient to adequately control rabbits. Recommended practice is to apply at least two, and preferably more, techniques to capitalise upon each other and provide a lasting solution.

Thinking about the different aims of successive controls (e.g. knockdown, knockout and mop-up/monitor) is a useful way to select options and apply them in an appropriate order. The

following notes are generalisations of how different methods may be used. Different combinations will be suited to different situations. In all cases, ensure that any relevant label instructions or standard operating procedures are followed, and any necessary training, approvals or other legal requirements are in place.

Knockdown

Aim: To get rabbit numbers down to levels where they can be more easily managed and subsequent treatments will be more effective.

Poisoned baits (1080 or pindone) are very effective when applied in accordance with label instructions and can suit broadacre and more confined situations. Baits laced with calicivirus (RHDV-K5) may be effective if:

- calicivirus (RHDV2) isn't circulating
- young rabbits aren't present, and
- local immunity levels aren't high.

Young rabbits are immune to K5 and, if infected, can retain immunity for life and potentially pass it to their offspring. In cases where baiting isn't feasible, more intensive methods such as fumigation or shooting, could be considered.

Any currently circulating strains of biological controls (myxomatosis or calicivirus) and natural disasters (e.g. drought) can knock down rabbit numbers across large areas, providing opportunities to follow-up with a program to knockout breeding sites. On extensive holdings or sites where more intensive or intrusive options aren't feasible, outbreaks of naturalised biocontrols may be the best 'knockdown' achievable.

Knockout

Aim: To remove breeding sites and drastically reduce the risk of rabbits re-establishing for decades to come.

Destroying breeding sites has consistently been shown to be the most effective and long-term method of rabbit control – no matter what the scale of operation. It is the difference between the long-term control of rabbits, versus recruitment and annually repeated programs of culling as many rabbits as possible. It may range from heavy machinery ripping vast areas of warrens, to smaller machines able to work around vegetation and structures, to removing rabbit harbour (vegetation or debris) and/or collapsing burrows with a shovel. Implosion or explosion could be options where soil types are suitable.

Mop-up & Monitor

Aim: To have as few remnant rabbits as possible and prevent incursions or any resurgence by rabbits.

'Mopping up' (getting every last rabbit and warren) is often necessary after a large campaign, in areas where rabbit numbers are already very low, and as an integral part of monitoring in the years after a major campaign when odd rabbits may re-enter the area. Options that are well suited to 'mopping-up' include fumigation and shooting (thermal scopes are useful for rabbits). Trapping (in cages, soft-jawed traps or soft nets) is an option

when conducted with due regard to animal welfare, as can be the use ferrets, depending on State legislation. Small-scale baiting may also be effective.

Any new, or reopened, burrows should be destroyed.

More information

Websites, references and downloads:

- [pestSMART](#) – European rabbits
- [RabbitScan Handy Resources – Control tools and the Glovebox Guide for Managing Rabbits](#)
- [Integrated rabbit control – AgVic](#)
- [The VRAN rabbit recipe – Monitor; then bait, rip, fumigate](#)
- [Understanding rabbit control options – Local Land Services, NSW](#)
- [Rabbit biology & distribution](#) – T. Cox NSW DPI.
- [On-Farm Research/Rabbits – Control methods for woolgrowers \(AWI\) and a 'How to' guide](#)
- [Pest management/Rabbits – Impacts and control methods \(MLA\)](#)
- [Rabbit Control](#) – Rabbit-Free Australia
- [Rabbit control options – Rabbit-Free Australia – Manage](#)
- [Exclusion fencing – Rabbit-Free Australia – Manage / Exclusion](#)
- [Principles and Strategies – Managing Vertebrate Pests, M Braysher \(BRS\)](#)
- [Williams K, Parer I, Coman B, Burley J & Braysher M \(1995\) 'Managing Vertebrate Pests: Rabbits'. BRS & CSIRO](#)
- [McPhee SR & Butler KL \(2010\) 'Long-term impact of coordinated warren ripping programmes on rabbit populations'. Wildlife Research, 37, 68-75](#)
- [Mutze GJ \(1991\) 'Long-term effects of warren ripping for rabbit control in semi-arid South Australia'. The Rangeland Journal 13\(2\), 96-106](#)
- [Sharp TM, Cope H & Saunders G \(2022\). New South Wales Code of Practice and Standard Operating Procedures for the Effective and Humane Management of Rabbits. NSW Department of Primary Industries, Orange, NSW.](#)
- [Williams CK & Moore RJ \(1995\) 'Effectiveness and Cost-efficiency of Control of the Wild Rabbit, *Oryctolagus cuniculus* \(L.\), by Combinations of Poisoning, Ripping, Fumigation and Maintenance Fumigation'. Wildlife Research, 22, 253-269](#)

Acknowledgements

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