Peri-urban Rabbit Framework: A guide to rabbit control

About this framework

Controlling rabbits on small properties in urban or peri-urban communities can be a daunting prospect, but it doesn't need to be.

This guide will be useful for anyone developing a community-supported program of peri-urban rabbit control.

A series of questions and checklists are at the core of the framework, supported by examples and links to information and technical resources. Unique combinations of social and physical environments, governance and local resources mean there is no single way to do things – but there are universal similarities that have been harnessed in the framework.

The questions are relevant to every situation and lead users through the framework; checklists ensure that control programs have the best likelihood of sustained success. They are designed to help communities move through phases of **acceptance** (acknowledging that a

rabbit-problem exists), **ownership** (appreciating that they have a responsibility to address that problem) and **success** (developing and implementing their solution to their problem).

The framework has been generated by the Peri-Urban Rabbit Forum, an informal network of peri-urban rabbit managers across Australia, facilitated by Foundation for Rabbit-Free Australia. It is an example of 'adaptive management', drawing on a 'plan, do, review' approach and applies the principles underlying recommended rabbit control practices.

Supplementary information is available at Rabbit-Free Australia's Rabbit Control web page.

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Key steps in peri-urban rabbit control

ASSESS
- Define the problem
- Measure the problem
- Understand the options

PLAN
- Scope the plan
- Engage the community
- Develop the plan

MANAGE
- Administer
- Field work
  - Knockdown
  - Knockout
  - Mop-up
- Monitor & respond

IMPROVE
- Evaluate
- Revise
- Celebrate

| Awareness Understanding | Engagement Commitment | Success Enthusiasm | Satisfaction Experience |

Peri-urban areas

Peri-urban areas are characterised by small properties, often with gardens and extensive areas of shelter and green feed, where rabbits' home-range may spread across properties with different owners. They may be sheltered to breed on one property, while being fed on another.

Peri-urban communities may be quite diverse in their understanding about rabbits and their sentiments towards them, while the range of control options may be restricted by regulations, built structures of high value and amenity environments. These factors combine to create environments where rabbit breeding can occur and where control is difficult.

Rabbit control in peri-urban areas must gain the support of community members, or at least ensure they are not opposed to control, and it must be clever and innovative in the application of available control techniques.

This framework deals with both the social and technical challenges to rabbit control in peri-urban areas.

Photograph: Brian Cooke

Photograph: Bruce Munday

Social underpinning

The Framework for Peri-Urban Rabbit Control will help communities through phases of acknowledgement, ownership and solution. It draws on managers' experiences, expert advice, and adult learning and change management (adoption) theory.

Adults prefer self-directed, enquiry-driven learning that builds on their experience, towards specific goals. Programs should provide opportunities for practical participation and respect everyone as equals in life experience.

For rabbit control practices to be adopted it may be necessary to begin with practical examples or trials with observable outcomes, and to emphasise the eventual benefits from their application – making them easy to learn and demonstrating their advantages.

Use this Framework to build support for rabbit control and help people:

- Acknowledge the social and environmental harm caused by rabbits.

- Accept ownership of the 'rabbit problem' and seek support in addressing it.

- Plan and implement their solution – their way of fixing the problem in their community.

Integrated rabbit control

Control programs

Effective rabbit control comes from integrating a series of control measures in a well-timed, sequenced manner that effectively **knocks down** rabbit numbers, **knocks out** their ability to breed, and **mops up** surviving or re-infesting rabbits. See 'Keys to rabbit control' on the Rabbit Control web page for more information.

A typical sequence of measures in rural areas is: bait, rip, fumigate, but that can be problematic in peri-urban areas.

Baiting with 1080 may be prohibited on small parcels of land, while baiting with RHDV-K5 (calicivirus) may be ineffective or counter-productive as young rabbits are immune and, if infected, retain immunity for life - potentially passing it on to their offspring. Where green feed is available year-round, young rabbits can be present in all seasons, precluding the use of RHDV-K5.

Destroying warrens or harbour where rabbits may hide and breed is crucial to long-term success. It avoids the need to annually repeat knockdown measures, which may simply create a temporary void that rabbits will repopulate. In closely settled areas it may be difficult to identify which property rabbits are coming from or they may be well protected by dense garden shrubs and bushes, but the essential need to destroy breeding habitat remains. Ingenuity may be needed.

Mopping up relies on being able to monitor all affected areas, meaning neighbours need to collaborate, which can be challenging. Measures like shooting may also be limited in densely populated surroundings, although with careful planning, communication and oversight it can be done.

Challenges like these underline the importance of having communities on-side and working together to avoid efforts being wasted, and in being innovative in the application of control measures. See 'Tips & Tricks' for more information on control techniques.

Community engagement

Support for rabbit control cannot be expected unless communities appreciate that rabbits cause problems, that rabbits must be controlled, and that solutions exist. In communities that are diverse in attitudes and understandings special effort is required to attain common understanding and widespread support. Without that there could be opposition to control or gaps in the areas controlled that provide effective refuges from which rabbits reinvade treated areas.

Integrated control uses a well-timed sequence of control measures to knockdown, knockout and mop-up wild rabbits.

Four steps to rabbit control

A four-step process is recommended for rabbit control:

■ **Assess:** Understand and document the situation so control measures can be well-targeted and highly effective.

■ **Plan:** Work through the issues and options with your community and document an agreed approach that best suits your situation.

■ **Manage:** Put the plan into effect, from training and gathering resources or approvals, through in-field applications, to continual monitoring and response as circumstances require.

■ **Evaluate:** Reflect on the effectiveness of the plan and its implementation, revise and refocus it to ensure optimal outcomes are maintained, and celebrate successes.

The following steps pose questions and present a checklist of requirements for an effective peri-urban rabbit control program. Work through the questions and tick off elements of the framework once they are achieved.

Step 1: Assess

Define the problem: Be clear on the problems caused by rabbits.

Q1. *What harm are rabbits causing and why is it a problem?*

Q2. *What is the root cause of the problems rabbits create?*

Measure the problem: Understand rabbit biology and behaviour. Know where they feed and breed.

Q3. *Where do rabbits live, breed and feed, and how prolific are they?*

Understand the options: Understand the range of control options available and the implications of each.

Q4. *What control options might suit local circumstances, and what collaboration, resources or training do they require?*

> **Your prospects for success are good when these boxes have been ticked:**
> ✔ **The community accepts that rabbits are causing a problem and need to be controlled.**
> ✔ **The sites where rabbits feed and breed are known.**
> ✔ **People are aware of the range of control options available and the implications of each.**

Step 2: Plan

Scope the plan: Determine the area to be covered and who will be involved.

Q5. *Are rabbits likely to re-invade from adjacent properties if not controlled there?*

Q6. *Are there other associated pest animals (e.g. feral cats) or rabbit-harbouring weeds that need control as well?*

Engage the community: Secure commitment from key members of the community.

Q7. *Are there other people or agencies dealing with the same problems who may have advice, resources or experiences to share?*

Q8. *What events, information or activities will help bring together those needed for an effective rabbit control campaign?*

Develop your plan: Be clear on your objectives and gain commitment on how they'll be met.

Q9. *What outcomes do you want to achieve?*

Q10. *Which control options will best fit your situation and available resources?*

Q11. *In what order, when and where will control operations be undertaken?*

> **Your prospects for success are good when these boxes have been ticked:**
> ✔ **There is agreement on the area to be covered and who will be involved.**
> ✔ **Key members of the community are committed to seeing rabbit control occur.**
> ✔ **There is agreement on the objectives and on how they'll be met.**

Step 3: Manage

Administer the Plan: Lay the foundations for successful implementation.

Q12. Are all necessary resources available and any training or regulatory approvals satisfied?

Q13. Is it clear who will manage and coordinate the program, and how it fits with other activities?

Conduct field work: Put the plan into effect.

Q14. Is everything in place to ensure 'best practice' or 'standard operating procedures' are followed?

Monitor and respond: Follow-up all control actions to check on their success and respond immediately if there are any problems, while also recording information for later evaluation.

Q15. What will you measure to know your plan is working and achieves the desired outcome, and how and when will you collect information?

Your prospects for success are good when these boxes have been ticked:

✔ **All necessary resources, skills and approvals are available and in place.**

✔ **All field operators are well versed in how to apply 'best practice' rabbit control techniques.**

✔ **Measures are in place to check the effectiveness of actions, and record information for later evaluation.**

Step 4: Evaluate

Evaluate: Reflect on the effectiveness of the plan and lessons learnt. Always have a plan; but always be prepared to change it in light of experience gained.

Q16. Which aspects of the plan were most successful and which weren't?

Q17. If areas weren't as successful as hoped, was it because of problems with implementation or because the expected outcomes didn't occur?

Revise: Respond to the conclusions reached from evaluation to rectify any problems or modify the focus for future activities.

Q18. What changes will be needed to make the plan more effective and efficient?

Celebrate: Celebrate success with all those who contributed to it.

Q19. How will you acknowledge and celebrate success?

Your prospects for success are good when these boxes have been ticked:

✔ **Planned monitoring will enable assessment of the effectiveness of the plan and lessons learnt.**

✔ **There is acknowledgement that the plan will need adjustment and recommitment upon completion to ensure any gaps are filled and treated areas remain rabbit-free.**

✔ **Ideas have been tabled on when and how you will celebrate success.**

Photograph: Darling Downs-Moreton Rabbit Board

Tips & Tricks: Ideas from rabbit managers

This section presents a selection of ideas tried with success by various rabbit managers across Australia.

Assess & Plan

The foundations of an effective rabbit control program include developing a shared understanding of the problems caused by rabbits and an appreciation of how many rabbits are present, where they live and breed, and where they feed.

Overcoming specified problems caused by rabbits can become the target for success, while knowing rabbit distribution and abundance enables control programs to be well targeted for maximum effectiveness and efficiency.

Once the range of options is understood, the next step is to work through them to determine which ones best fit the local community and the nature of the environment. Then it is time to document your plan, working out what control actions will be taken (where, when and who by) and ensuring all necessary resources and approvals are available.

Define the problem

Community walks & talks, or field events, enable everyone to see and hear about the problems, and start to understand where rabbits are most prolific, and maybe locate their warrens or refuges.

Exclusion areas – plots from which rabbits are excluded so plants can thrive – help communities to see the harm caused by rabbits to seedlings and plant diversity.

Photograph: Rabbit-Free Phillip Island

Solutions are available

Workshops or field demonstrations can help people understand the range of control options available, the pros and cons of each, and the training or resources required for implementation, enabling informed decisions.

Monitored demonstration sites explain the available control options, illustrate their effectiveness and help show the harm caused by wild rabbits.

Measure and map for targeted control

Rabbit surveys are another way to engage community members and to generate data that is essential when planning and monitoring control programs. Spotlight counts, dung rating or warren mapping are traditional approaches but all sorts of options could work, from an array of camera traps to a regularly repeated walk counting active dung heaps.

RabbitScan can be used to map warrens and areas of rabbit abundance (information that is critical for planning), and to request tissue-testing kits to determine if calicivirus is already active.

Tissue test found dead rabbits to check if rabbit biocontrols are already active, negating the value of a RHDV-K5 release. Test kits for RHDV and myxomatosis are available from **CSIRO**, and for RHDV by logging a dead rabbit via **RabbitScan**. Both sites also have maps of recent occurrences.

Photopoints – set spots to record before and after photos from – are a simple way to capture a lot of information.

Engage the community

Community meetings or events, where issues and options can be aired, perhaps with experts on-hand to answer questions and assist discussions, leading to consensus on the way forward.

Group formation may be required before management agencies provide assistance. This requires leaders in the community to get neighbours engaged before agencies provide resources or assistance and guidance on rabbit control.

Compliance letters can remind landholders of their obligations to control rabbits under state legislation and direct them to where they can get support, bringing them into community-wide initiatives.

Build commitment

Commitments to monitor, e.g. picking up poisoned rabbits, checking traps or conducting spotlight counts, may be a prerequisite from agencies as a sign of commitment from community members, to ensure that both immediate and long-term feedback is available for control programs, and to lock in an element of 'best practice rabbit control'.

Training may be provided, or be a requirement, before access to chemicals or outside assistance is provided, ensuring that landholders are both committed to act and sufficiently skilled to ensure success and meet any regulatory requirements.

Get your act together

Collaborative planning is essential to bring different landholders, agencies and service providers together, and can be undertaken in a wide variety of ways.

Incentives, such as visits by agency field staff to help with assessment, planning and/or training, are often pivotal in bringing communities together – even if it is sometimes one individual at a time.

Manage & Evaluate

Putting the plan into effect requires commitment and coordination of the field operations, ongoing community liaison and communication, and administration and the management of service providers or volunteers.

Monitoring is essential to success. This includes checking that things are done properly; detecting and responding to problems quickly; and making sure the program is on track to achieve what it set out to.

Once a control program is complete, all participants can be involved in reviewing its effectiveness and celebrating their successes. They can also adjust elements of the plan that weren't as successful as anticipated, and revise their plan in response to the changes in rabbit distribution and abundance. A season or two of control may have sufficient success to require a shift in emphasis and control techniques, e.g. shifting from a focus on knocking down rabbit numbers and knocking out warrens to monitoring and mopping up harder to get or lower density populations.

Use 'best practice' for best results

Training and field days can provide the skills and understanding needed to adopt best practice, greatly increasing the likelihood of treatments being effective and reducing the risk of unintended consequences.

Innovative control practices are often necessary so the effect of traditional broadacre control techniques can still be achieved in situations that are inaccessible to large machinery or where the use of poisons is tightly controlled, e.g. caving in warrens by shovel, or rigorous monitoring to remove any poisoned rabbit carcasses.

Incentives, including expert advice, provision of equipment or pre-prepared baits, training or financial support for approved works can help people 'take the first step' (which can often be the hardest) and make large, collaborative projects achievable.

Community (volunteer) working bees can assist with anything from flagging warrens to manual control work may be feasible with a mix of trained and willing participants.

Negotiate with neighbours so all affected properties are managed 'as one', which could extend to gaining approval from a disinterested landholder for others to carry out rabbit control on their land.

Run a tight ship

Administration and communication services are a necessary part of an effective program and an opportunity for people without the skills or interest for field work to still be important contributors to rabbit control.

RabbitScan can be used to record and keep track of field work such as warren destruction.

Keep track of progress

Tissue testing dead rabbits found after a RHDV-K5 release will show if they died of naturally circulating RHDV2 or the RHDV-K5 release.

A **'rabbit warden'** could be appointed as a 'go-to' person for community members to report rabbit sightings.

Rabbit, or warren, monitoring and photopoints provide data on the effectiveness of control programs, and add strength to 'before & after' reports.

An end-of-season rabbit census makes monitoring an annual event that community members can participate in.

Evaluate and celebrate

Feedback surveys available to all stakeholders gather personal insights from a cross section of those involved across all aspects of a control program.

Demonstrate the difference that rabbit control makes with 'before and after' photos or rabbit exclusions. Long-term monitoring of photo-points will add to the legacy value of the project.

Community events reward contributors for their efforts, reinforce the merit of what has been done, and help cement rabbit control into the local community's psyche.

Wild European rabbits

Wild rabbits were introduced to Australia from Europe in the 1800s and became a notorious pest, wreaking environmental harm across the country. Their descendants are still here.

In peri-urban and urban areas, wild rabbits can damage vegetable gardens, parks and playing fields, undermine anything from a garden shed to industrial infrastructure, and cause significant distress to people affected by the damage. Rabbits in low densities will target preferred species of plants and can eliminate them from areas of natural bush. In greater densities, their sheer weight of numbers degrades vegetation and erodes soil.

Rabbits live in territorial social groups, centred on a safe breeding site – usually a burrow or warren. They mark their territory with scent and dung heaps and there are dominant rabbits, both male and female (bucks and does), that aggressively maintain their position.

Their great ability to breed quickly when high-protein feed (e.g. green grass) is available relies on having the safety of their warrens or other harbour. Their reliance on warrens is a weakness that can be exploited in control programs to stop them breeding and re-infesting rabbit-free areas.

More information about Rabbit-Free Australia

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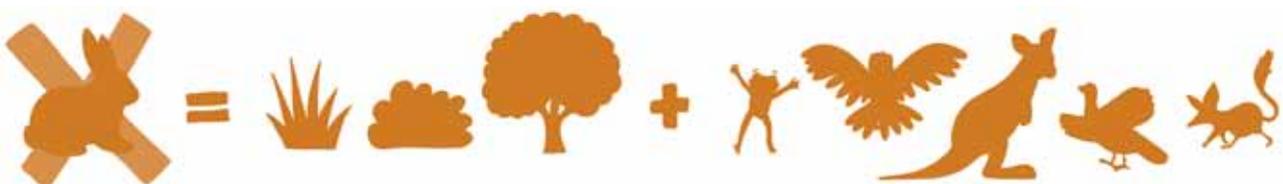Email: admin@rabbitfreeaustralia.org.au
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