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Working towards a pest free Peninsula

Effective Long-Term Rabbit Management

Overview

Feral rabbits are securely established in Otago and, therefore, containing their presence is the most appropriate form of management. The 'sustained control' programme that applies to rabbits under the Otago Regional Council's Regional Pest Management Plan 2019 (RPMP) means holding rabbit densities to allowable levels. Rule 6.4.6.1 of the RPMP allows for a maximum allowable level (MAL) of Level 3:

> ***Rule 6.4.6.1 -*** *An occupier within the Otago region shall control feral rabbit densities on the land they occupy to at or below Level 3 on the Modified McLean Scale (MMS).*

Parts of Otago Peninsula have seen an increase in feral rabbit populations in recent years and some landowners have struggled to maintain rabbit populations to at or below allowable levels. The most common reasons for this are:

- Inadequate control work undertaken;
- A reactive approach is taken rather than a strategic one;
- Poor choice of control methods for the density rabbits and the property type;
- Heavy reliance on only one control method;
- Primary control not followed up with secondary control (see below);
- Conflicting control methods (e.g. shooting adjacent to poison operations);
- Incomplete delivery of control (e.g. fewer than 3 drops per Pinone carrot operation);
- Lack of defensible barriers resulting in rapid reinvasion;
- Lack of coordination between neighbouring properties;

Sustained control of rabbits requires a high level of collaboration, communication, and participation amongst the majority of landowners in the area. There is no quick fix. This will be an ongoing challenge for this community, and it will take a lot of hard work and determination to get on top of rabbit numbers, but it's not impossible and it has been achieved at other places in Otago. This handout has been prepared to help landowners and anyone else undertaking rabbit control to achieve long-term sustained control and, therefore, maximise the impact of the time, money and energy expended, and ensure that gains are maintained.

Reactive -v- Strategic Control

As mentioned above, one of the most common reasons why landowners struggle to hold rabbit numbers to acceptable levels is because a reactive approach is taken rather than a strategic approach. Landowners often wait until rabbit numbers are high or getting high and then adopt one method to try and knock rabbit numbers back as quickly as possible. This can be referred to as crisis intervention and often involves a poison operation using carrot baited with liquid Pindone (or less frequently 1080). Where a good reduction in rabbit numbers has been achieved (e.g. >90%), landowners are satisfied with the number of rabbits controlled and give little thought to the rabbits that are left behind or the risk of reinvasion from neighbouring properties where little/no control work was undertaken.

Regarding the rabbits that are left behind:

- Does can breed from 5 months of age;
- Rabbits have a 28-day gestation period;
- Does have 1 – 12 kittens per litter; and
- Does are ready to breed again a few days after giving birth.

As a result, rabbit populations can increase eight- to tenfold in one season. In the absence of a defensible barrier (e.g., a good rabbit fence), this rapid repopulation is often accompanied by reinvasion, which means that rabbit densities are soon back to pre-poison levels and the process must be repeated over again. In the meantime, the landowner has become frustrated and despondent regarding the limited benefit from the time, energy, and money that they expended. It is at this point that some landowners simply give up trying.

To ensure long-term, sustained control, a more strategic approach must be adopted. This might begin with the landowner preparing a Rabbit Management Plan that stipulates clear objectives to permanently reduce rabbit numbers over the long term. Rabbit numbers are monitored regularly, and control methods are initiated when there are signs of population increase. There may be a primary control method (e.g., a poison operation) to knock back rabbit numbers initially, but then this is closely followed up with ongoing secondary control to reduce the likelihood that primary control methods are needed again in the future.

The differences between a strategic approach versus a reactive approach are summarised in the table below. The key difference is that a reactive approach focusses on how many rabbits are killed, whereas a strategic approach focusses on the rabbits that are left behind.

REACTIVE	STRATEGIC
Based on immediate reduction in rabbit numbers (short term)	Based on clear objectives to permanently reduce rabbit numbers (long term)
Initiated following high level of infestation (crisis intervention)	Initiated when monitoring identifies numbers are on the rise
Relies heavily on primary control treatments that may need to be repeated every few years	May require an initial primary control treatment, but none thereafter if implemented well
Often not followed up with secondary control	Secondary control continues indefinitely
Any reduction in rabbit numbers may be seen as a success, regardless of how many are left behind	Focus is on how to control rabbits left behind after the primary treatment
Can be expensive if frequent primary control treatments are required	Can lead to reduced costs over time as rabbit numbers are constantly reduced

With a strategic approach, a variety of secondary control methods are often adopted in response to monitoring that determines how rabbit populations are responding to previous control attempts and other factors such as disease, food availability, and climate. Secondary control options may include:

- Fumigation
- Shooting
- Warren/habitat modification
- Dogs

Care must be taken to ensure any method does not impact on other methods being undertaken nearby. For example, shooting can make rabbits very jittery and as such they will be unlikely to interact with any new objects found in their environment, such as baited carrot. Shooting should not, therefore, be undertaken within a month either side of a poison operation on the subject property or a neighbouring property.

A strategic approach will almost certainly also include fencing and/or close cooperation with neighbours. Neighbourly collaboration in the development and implementation a management plan can result in far greater impact as well as potential cost savings, and installing and maintaining a well-constructed fence will prolong the effects of control work undertaken.

Engaging a Contractor

A good contractor should be able to discuss options for permanently reducing rabbit numbers (i.e. long term, strategic approach) rather than just focussing on immediate gains (i.e. short term, reactive approach). A good contractor will visit your property to meet you and find out more about your specific situation and your rabbit problem before making recommendations.

(The following is taken from ORC website)

You can employ an individual or a business to undertake or support you with rabbit control on your property. Having a reliable contractor with the right skills and equipment is important for effective control and having some knowledge yourself of how to manage rabbits and what to expect from a good management plan will give you better results.

A good contractor will also be able to answer the following:

- What is their experience?

- Have they undertaken programmes in the local area before?
- Are they authorised to use chemicals?
- Do they have protective clothing and equipment?
- Can they direct you to previous clients who will vouch for their work?

It is recommended if hiring a contractor, you encourage them to conduct a site inspection to obtain an accurate quote.

The contractor may ask:

- What your short and long term goals are;
- Where and what is the damage;
- Location of rabbit feeding areas;
- Location of burrows;
- Location of woody or spiny weeds;
- Whether the neighbours have feral rabbits;
- Rabbit numbers: small or large population;
- What treatment you would / wouldn't like to use on your property;
- An indication of budget available;
- Location of other animals on your property – such as native birds, stock or pets.

If you're unable to provide this information, recommend the contractor inspects the site. If they don't ask at least some of these questions, it is worth seeking additional quotes.

Pindone Poison Handlers Certificate

If you would like to work towards a more cost-effective approach to using pindone, you may like to consider getting you approved handlers' licence though Adroit Solutions

https://www.adroitsolutions.co.nz/page/pindone-info-page/

Fencing

Fencing should be part of any strategic rabbit management approach. In terms of all the available control methods, this is the best value for money long-term and observations suggest that rabbit numbers throughout Otago Peninsula are generally lower in areas where there is more rabbit fencing in place. Rabbit fencing is, therefore, recommended as the first step in an effective, long-term, sustainable rabbit management plan. Even if it is not feasible to fence the entire property boundary all at once, strategic fencing along boundaries that are most prone to reinvasion can still go a long way towards keeping rabbit numbers down to a manageable level.

Tips for installing an effective rabbit fence:

- Use mesh netting with a diagonal measurement of no more than 40 mm to prevent young rabbits from getting through;
- Use galvanised wire netting to reduce the risk of rust and erosion;
- The higher the better, with 600 mm height being the minimum, and 900 mm height being ideal;
- The bottom 150 mm of the netting should be buried, or turned onto the surface and packed with stones or pegged;
- It is essential that netting is laid uphill and/or towards the expected rabbit pressure;
- Concrete, a railway iron, or a board sill should be buried in gateways so rabbits can't bury under;
- The fence should not simply be installed and forgotten about. The fence should be regularly checked for signs of breaching or other damage, and maintained as required.

Rabbit – Predator Relationship

Many landowners are motivated to maintain rabbit populations to well below the maximum allowable level of Level 3 on the MMS. One reason for this is to reduce predator numbers in the area (e.g. mustelids, feral cats) and, therefore, contribute to wider biodiversity outcomes. It is often thought that fewer predators could lead to an unwelcome increase in rabbit numbers, but in New Zealand rabbit populations usually influence the number of predators, not the other way round.

Rabbits numbers are mostly driven by 'bottom-up' factors such as disease, food availability, and climate, not by 'top-down' factors such as predators. This means that any effect predator control has on rabbit numbers will generally be small, but that reducing rabbit numbers can be used as a tool to help reduce predator numbers. Further information is provided in the following articles/reports:

https://predatorfreenz.org/research/rabbit-control/

https://www.pfhb.nz/resources/newsletters-and-good-reads/article/11/rabbits-without-predators-the-likely-consequences

https://envirolink.govt.nz/assets/Envirolink/1435-HBRC196-Does-control-of-introduced-predators-lead-to-greater-rabbit-abundance.pdf

This research should also reassure landowners that predator control won't increase their rabbit populations.

Any property may be contributing to the rabbit problem in the wider area even if the rabbits are just seeking refuge, foraging, or passing through that property. In other words, the rabbits don't have to be living on that property for that property to supporting the area's rabbit population.

Control Work on Smaller Properties

(taken from ORC Community Update December 2022)

If rabbits are able to graze, hide or even just pass through these smaller properties then there are measures that the property owner/occupier could take to contribute to the wider collective rabbit management effort. These measures include:

- Rabbit exclusion fencing
- Removing any piles of wood, rubbish or vegetation that offer rabbits protection from the weather and predators
- Pruning the bottom of shrubs and hedges so they don't provide a suitable shelter for rabbits
- Ensuring that any gaps under buildings and sheds are blocked to prevent rabbits from gaining access
- Control methods on smaller properties and in urban settings can also include the use of Pindone, fumigation of burrows (using Magtoxin) as well as follow up shooting (in appropriate locations) by experienced contractors. For more information on any of these methods please visit our website in the first instance - www.orc.govt.nz/rabbits - and email or call us if you have any further questions. Please note that any toxic agents (i.e. Pindone and Magtoxin) must only be used by a licenced handler with manufacturer's instructions to minimise the risk of harm to children, pets, stock and native wildlife.