



Otago
Regional
Council

Biosecurity Operational Plan 2020-2021

Implementing the Otago Regional Pest Management Plan
2019-2029

Cover photo: A lone gorse bush stands out amongst alpine tussock and spaniard vegetation in the Central Otago gorse and broom-free area near Duffers Saddle, looking west into the Nevis Valley. Keeping these areas free of exotic weeds is a key part of our pest plant management approach. Photo source: P Russell, November 2019.

OTAGO REGIONAL COUNCIL
Private Bag 1954, Dunedin 9054
70 Stafford St, Dunedin 9016
Phone 03 474 0827
Freephone 0800 474 082
www.orc.govt.nz

ISBN 978-0-908324-63-7
Published April 2020

Executive Summary

This document is the Otago Biosecurity Operational Plan for the 2020-2021 financial year. It sets out the biosecurity/pest management activities that Otago Regional Council (ORC) coordinates in the region as the Management Agency responsible for the *Otago Regional Pest Management Plan 2019-2029* (the Plan, or RPMP). This is the first Biosecurity Operational Plan prepared under the 'new look' RPMP and accordingly contains several new pest species, and pest control initiatives which will be carried out across the region.

ORC achieves practicable biosecurity outcomes through setting rules that require land occupiers to control pests to established standards; undertaking inspections (to ensure compliance with rules), monitoring (to determine the effectiveness of control) and surveillance (identifying new issues). The ORC will take a lead role in advocacy and education around pest threats, pathways of pest spread and the provision of advice.

ORC will work closely with many other organisations involved in undertaking and funding pest management in the region, such as Ministry for Primary Industries (MPI), Land Information New Zealand (LINZ), the Department of Conservation (DOC), Kāi Tahu ki Otago, neighbouring councils and community groups.

While the Operational Plan focuses mainly on council's statutory functions through the RPMP, ORC is actively involved in several regional and national biosecurity and biodiversity-related leadership roles (as described in the non-regulatory, supporting Biosecurity Strategy). This Operational Plan integrates the council's legal biosecurity functions with other priority pest management collaborations and partnerships for the stated year.

There are five pest management programmes carried out under the RPMP, as summarised below. Four significant projects are noted under each programme to highlight the range of activities contained in the council's overall biosecurity work programme.

Exclusion pest programme – ORC will prevent six high threat pest plants from establishing in the region through:

- Regular liaison and working closely with neighbouring councils that have these pests.
- Targeted surveillance of the plants' likely habitats to identify new sites, and rapid response/control if any infestations are identified.
- Specifically, working with farmers and the agricultural sector to keep African feather grass and Chilean needle grass out of the region; and
- Increasing lake/river users awareness of the effects of hornwort and egeria if they established, and working with government agencies on any incursion responses.

Eradication pest programme – ORC will eliminate spiny broom, and eradicate Bennett's wallaby and rooks from the region by:

- Coordinating and taking direct action for all rook and spiny broom control.
- Developing a shared approach to wallaby control – if control can be done quickly/effectively then occupiers are obligated to control them. Otherwise mandatory reporting to ORC is required and a specific control plan is then developed.

- Collaboration with Environment Canterbury (ECan) through joint Memorandum of Understanding guiding cooperation on wallaby management and control.
- Enforcing rules to ensure that ORC rook control is not interfered with and that wallabies are not being held as pets; and
- Stepping up surveillance for wallaby incursions from Canterbury especially through the Lindis Pass, Hawkdun Range and Kakanui Mountains areas.

Progressive containment pest programme – ORC aims to contain and reduce the extent of 11 pest plants (or groups of plants) across the region by:

- Ensuring occupiers eliminate pest plants that impact on regional production values (e.g. bur daisy, nassella tussock, perennial nettle and white-edged nightshade).
- Making sure occupiers eliminate pest plants that modify natural ecosystems (e.g. bomarea, boneseed, Cape ivy, old man’s beard and spartina).
- Coordinating all African love grass control (mostly around Clyde and Alexandra); and
- Managing six wilding conifer species through three different land occupier rules (depending on location and timings). A pest agent rule also applies to up to 11 conifer species (where they are not in a plantation forest).

Sustained control pest programme – ORC will enforce rules to ensure control of rabbits and five widespread pest plants (or groups of plants) to reduce their impacts and spread by:

- Ensuring occupiers control rabbit densities to no more than level 3 (ideally below) on the designated Modified McLean Scale.
- Ensuring occupiers eliminate all gorse and broom from their properties within designated gorse and broom free areas (GBFAs). In all other parts of the region, 10m boundary clearance is required. New GBFA new areas will be further investigated.
- Making sure that all rural zoned occupiers eliminate nodding thistle (within 100m of their boundaries) and ragwort (within 50m) depending on neighbour control regimes.
- Elimination (and no planting of) wild Russell lupin within specified areas (e.g. braided river channels, other watercourses and within 10m of an adjoining property).

Site-led pest programmes – ORC will take a lead role in supporting community and agency control of six pest plants and nine pest animals to support Predator Free Dunedin and wider biodiversity enhancement initiatives. One freshwater pest plant is also targeted. The programmes include:

- Otago Peninsula (9,000 ha) – to protect rare species and forest remnants.
- West Harbour-Mt Cargill (12,500 ha) – to protect 11 different ecosystems; and
- Quarantine and Goat Islands – important ‘stepping stones’ between the above areas.
- Three different LINZ led lagarosiphon programmes are in place - to keep the weed out of Lake Wakatipu (and other places where it is not present); reduce its extent in Lake Wanaka and the Kawarau River and negate its impacts on Lake Dunstan.

Non-regulatory pest management activities include undertaking general surveillance for and research into the management of potential future pests, the research and release of biocontrol agents, participation in national biosecurity management groups, progressing standard operating procedures for staff guidance, and assisting community groups with the

management of at least 37 other organisms of interest (e.g. blackberry, buddleia, wild geese wasps, goldfish, lake snow and five marine organisms).

Table of Contents

1. Introduction.....	1
1.1 Background.....	1
1.2 Operational plan purpose, duration and linkages	1
1.3 Operational plan format.....	2
1.4 Biosecurity is everyone’s business.....	3
2. Implementation of Programmes.....	5
2.1 Pest management programmes.....	5
2.2 Methods and resources – how pest control will be carried out.....	7
2.3 Management and reporting	9
2.4 Financial overview.....	10
3. Pests / Pest Programmes	12
3.1 Exclusion pest programme	12
3.2 Eradication pest programmes.....	14
3.2.1 Bennett’s wallaby.....	14
3.2.2 Rooks.....	17
3.2.3 Spiny broom.....	18
3.3 Progressive containment pest programmes.....	19
3.3.1 African love grass.....	19
3.3.2 Nassella tussock.....	20
3.3.3 Old Man’s Beard	22
3.3.4 Spartina	24
3.3.5 Six containment pest plants	26
3.3.6 Wilding conifers (particularly contorta, Corsican, Scots, mountain and dwarf pine and European larch).....	28
3.4 Sustained control pest programmes	31
3.4.1 Gorse and broom	31
3.4.2 Nodding thistle and ragwort	33
3.4.3 Russell lupin	34
3.4.4 Feral rabbits	36
3.5 Site-led pest programmes	39
3.5.1 Otago Peninsula, West Harbour – Mount Cargill and Quarantine and Goat Islands	39
3.5.2 Lagarosiphon (in conjunction with Land Information New Zealand).....	41
4. Other Biosecurity Activities	43
4.1 Overview.....	43
4.2 Proactive biosecurity management.....	44
4.3 Responsive and flexible approaches (effectiveness and efficiency)	46

4.4	Integrated and collaborative actions	47
4.5	Landscape-scale and site scale initiatives.....	48
5.	Glossary.....	49
	Appendix 1: Russell Lupin Management Plan Requirements.....	51
	Appendix 2: Modified McLean Scale for Rabbits.....	52
	Appendix 3: Otago Rabbit Night Count Locations	53

1. Introduction

1.1 Background

Under the Biosecurity Act 1993 (the Act) the Otago Regional Council (ORC) prepared the *Regional Pest Management Plan 2019-2029* ('the **RPMP**'), following a public consultation process. The RPMP provides a framework for the efficient and effective management or eradication of specified organisms (declared 'pests') in the Otago region for the next decade.

Several new pest species have been included in a revamped RPMP, including Chilean needle grass, egeria, hornwort, moth plant, false tamarisk, Russell lupin and five wilding conifers (Corsican, Scots, mountain and dwarf mountain pines and larch). Also, a suite of new pest plants (e.g. gunnera, Darwin's barberry) and pest animals (e.g. goats, mustelids, rats and possums) are listed for control where they impact on biodiversity values at four key sites – Otago Peninsula, West Harbour/Mt Cargill and Quarantine and Goat Islands.

Overall, the RPMP names 30 plants (or groups of plants) and 11 animals (or groups of animals) as 'pests'. Responsibility for most of the pest control work lies with land owners (referred to as occupiers). ORC has an obligation to ensure occupiers meet RPMP requirements around each pest but also coordinates and undertakes surveillance and control of some pests where there are clear justification and regional benefit (e.g. rook and African love grass control).

The RPMP's key purpose is to outline how each pest or pest grouping will be managed to reduce or negate their threats to the environmental (e.g. ecosystem or species), economic (e.g. farming/forestry) and cultural/social (e.g. Māori and human health) values of the region. The RPMP allows the council to use the relevant advisory, service delivery, regulatory and funding provisions available under the Act to deliver the specific objectives identified in Part Two of the RPMP. In short, the Act allows the council to develop pest management approaches specific to the region's needs and expectations. The 'new look' RPMP became operative on October 25th 2019.

ORC is the Management Agency under the Act responsible for implementing the RPMP, including monitoring and reporting annually on progress. Under section 100B of the Biosecurity Act, ORC must prepare an **Operational Plan** once the RPMP becomes operative, and review performance against it annually¹. The Operational Plan is made publicly available (via the council website), provided to the Minister for Primary Industries (via MPI) and is available to any other interested parties on request.

1.2 Operational plan purpose, duration and linkages

This document (*Biosecurity Operational Plan 2020-2021 – Implementing the Otago Regional Pest Management Plan 2019-2029*) is the first Operational Plan to be prepared under the revamped RPMP. It outlines the nature, scope and priority activities that ORC intends to

¹ The Biosecurity Operational Plan will be reviewed annually because of the different programmes covered, some of which may vary year to year. Other programmes may appear to be similar and ongoing each year.

undertake for pest management across the Otago region for the financial year commencing July 1st 2020 through to June 30th 2021². Key performance indicators (KPIs) are included along with other means of achievement which together, will determine to what extent RPMP objectives are being met.

This Operational Plan not only sets out the key priorities for pest management established through the RPMP, it also includes many non-regulatory pest-related projects that ORC undertakes as set out in the *Otago Regional Council Biosecurity Strategy*.

While an indicative annual pest management budget is included in the 10-year RPMP, it will be subject to change. More accurate funding of RPMP activities is achieved through council's Annual Plan and Long Term Plan (LTP) processes. The current LTP is due for renewal in 2021, which provides an opportunity to align budgets and targets in future Operational Plans along with the council's three-yearly LTP review.

1.3 Operational plan format

This Operational Plan should be read in conjunction with the RPMP and the *Otago Regional Council Biosecurity Strategy*. This section has introduced the requirements for an Operational Plan following adoption of the RPMP. Section 2 summarises the five pest management programmes being implemented and the range of methods used to achieve good pest management outcomes. It also outlines management and reporting requirements and provides a financial summary. The core part of the Operational Plan, the pests (or groups of pests) are described in section 3 as follows:

- **Exclusion pests**
- **Eradication pests**
- **Progressive containment pests**
- **Sustained control pests**
- **Site-led pests**

Other biosecurity leadership and pest management responses (and related KPIs) are also described (section 4). They are mostly extracted from the Biosecurity Strategy and include the biological control release programme, Check Clean Dry advocacy and national response activities like *M. bovis*, velvetleaf and biosecurity project collaboration. A glossary of terms used³, along with appropriate appendices, concludes the document.

² Implementation of biosecurity activities in the eight month period between RPMP approval and the commencement of this Operational Plan was addressed through the ORC Annual Plan for 2019-2020 and preparation of an internal *Biosecurity Work Programme 2019-2020*, based on the prior operative RPMP.

³ Contains a mix of operational related terms from the RPMP and terms found in this document.

1.4 Biosecurity is everyone's business

Under the RPMP, much of the responsibility for pest control lies with occupiers (primarily land owners and land managers). As the designated Management Agency, ORC enforces the RPMP to ensure that occupiers are aware of and meet their obligations for pest management on their properties and places (by adhering to RPMP rules).

At the regional level, priority setting gives emphasis to exclusion and eradication goals and accordingly the council is responsible for these programmes. ORC will also undertake public education and advocacy, and facilitate the release of biocontrol agents in appropriate areas.

ORC benefits from strong working relationships and collaborations with neighbouring regional councils, Environment Canterbury (Ecan) and Environment Southland (ES) – refer to map in Figure 1. Where appropriate, work is aligned with other agencies involved in pest management responses, particularly Land Information New Zealand (LINZ), the Department of Conservation (DOC), and the Ministry for Primary Industries (MPI).

The ORC will work proactively to develop a solid partnership with Kāi Tahu. Coordination of pest management efforts will also be more actively encouraged between the many community groups and trusts in the region and individual occupiers. Simply put, biosecurity is everyone's business, we cannot do it alone.



Figure 1: The Otago region is the second largest in New Zealand, covering 32,000 square kilometres. Image source: ORC.

2. Implementation of Programmes

2.1 Pest management programmes

ORC implements five pest management programmes⁴, which help describe the pest outcomes sought through the RPMP (as noted below). The pests (plants and animals) and pest agents listed under each programme are summarised in Table 1.

➤ **Exclusion**

The intermediate outcome is to search for subject pests (such as Chilean needle grass and moth plant) and prevent their establishment, where they are present in New Zealand but not yet established in the region, and which has the potential to become a serious pest in the future. Section 100V of the Act may also be used⁵ to instigate emergency control of new pest incursions that are not listed in the RPMP.

➤ **Eradication**

The intermediate outcome is to eradicate subject pests (e.g. rooks, Bennett's wallaby and spiny broom) from the areas where they occur in the region. In the short- to medium-term, eradication involves reducing the infestation density of the pest to zero level (or zero density). This programme includes invasive pests which are a high threat to regional values, but where their rate of increase or geographic extent is not well known but is assumed to be at low density or low geographic spread.

➤ **Progressive Containment**

The intermediate outcome is to contain and reduce the geographic distribution of named pests (such as Old Man's Beard and wilding conifers) to specific areas over time. Containment usually arises where the subject is at high densities in part(s) of the Otago region, but of low extent or limited range in other parts. Eradication is not feasible, but it is realistic to prevent the pest from spreading to other 'clear' parts of the regions or to attempt eradication of the pest from other parts of these areas.

➤ **Sustained Control**

The intermediate outcome is to provide for the ongoing control of named pests (like rabbits, gorse and broom and Russell lupin) to reduce their impacts and spread to other properties. The focus is on the densities of the pests and ensuring they do not reach a level where they are causing significant externality impacts, that affect neighbours of the occupiers with pests, where those neighbours are undertaking control work. Sustained control is a strategy for pests of low to moderate densities but of such wide geographical spread that they cannot feasibly be eradicated.

➤ **Site-led**

The intermediate outcome is to exclude, or eradicate, from places (or sites); or to contain, reduce or control within that place or site; the named pests that are capable of causing damage to a place or site and its values.

⁴ As prescribed by the National Policy Direction for Pest Management 2015.

⁵ Provided that stated criteria around timing and control measures can be met.

Otago Regional Council Regional Pest Management Plan

There are five programmes that are used to manage pests in Otago

Exclusion Programmes: to prevent the establishment of the subject, or an organism being spread by the subject, that is present in New Zealand but not yet in an area.			
Plants	African feather grass	Chilean needle grass	Egeria
	False tamarisk	Hornwort	Moth plant
Eradication Programmes: to reduce the infestation of the subject, or an organism being spread by the subject, to zero levels in an area in the short to medium term.			
Plants	Spiny Broom		
Animals	Bennett's wallaby	Rook	
Progressive Containment Programmes: to contain or reduce the geographic distribution of the subject, or an organism being spread by the subject, to an area over time.			
Plants	African love grass	Bomarea	Boneseed
	Bur daisy	Cape ivy	Nassella tussock
	Old man's beard	Perennial nettle	Spartina
	White-edged nightshade	Wilding conifers	
Sustained Control Programmes: to provide ongoing control of the subject, or an organism being spread by the subject, to reduce its impacts on values and spread to other properties.			
Plants	Broom	Gorse	Nodding thistle
	Ragwort	Wild Russell lupin	
Animals	Feral rabbits		
Site-led Programmes: that the subject, or an organism being spread by the subject, that is capable of causing damage to a place is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of that place.			
Plants	Banana passionfruit	Chilean flame creeper	Darwin's barberry
	Gunnera	Lagarosiphon	Sycamore
	Tradescantia (wandering willie)		
Animals	Bennett's wallaby	Feral cat	Feral deer (incl. hybrids)
	Feral goat	Feral pig	Hedgehog
	Mustelids (ferret, stoat, weasel)	Possum	Rat (Norway, ship and Kiore)
The maps illustrating the site-led areas are provided in Appendix 3 to the Plan.			

Table 1: Summary table of RPMP declared pests listed in their appropriate management programmes. Source: ORC RPMP.

Note: The RPMP (Appendix 1) lists 37 organisms of interest (that are not legally declared pests under Biosecurity Act criteria) but which may be otherwise controlled or managed through ORC Biosecurity Strategy actions.

2.2 Methods and resources – how pest control will be carried out

The council achieves practicable pest management outcomes through the following methods and provision of resources. All programmes require reporting on actions taken and outcomes achieved:

- **Advocacy and education** – ORC will provide education, advice and information to landowners and/or occupiers and the public about the impacts of pests and pathways (vectors) of pest spread and appropriate methods of control. The ORC will also ensure that land occupiers are informed of their responsibilities under the RPMP. Added to this is supporting the role of community volunteer groups who are motivated to undertake pest plant and animal control work at a site or in a locality. This activity also includes contributing to research and cost-sharing with other agencies and developing/promoting 'good practice' around control methods aimed at pest management contractors and occupiers who are required to act.
- **Inspections, monitoring and surveillance** – regular property inspections ensure that RPMP rules (e.g. bomarea control) are being adhered with (refer to Figure 2). Enforcement action is initiated where rules are breached, however, every effort is made to achieve voluntary compliance first. Monitoring is also carried out to determine effectiveness of control. Surveillance activities identify new pest issues and ensure that current problem pests and sites are not getting worse.
- **Collaboration with others** – ORC collaborates with numerous central and local government agencies and entities and land occupier groups, which may include the development of agreements for the effective management of pests to protect the values of specific sites, corridors and areas. Good examples include working agreements with the NZ Transport Agency, five district/city councils and KiwiRail to manage pest spread along the region's unique transport corridors.
- **Requirement to Act (regulation)** – RPMP rules are the 'backbone' of the RPMP, requiring many pests to be controlled to specified standards or levels. In other situations, some pests must be reported to ORC and be controlled by occupiers. Rules also make it an offence for people to interfere with legitimate pest control (rook and rabbit) operations. Other pests (such as wallaby and possums) cannot be kept. Failing to comply with RPMP rules can lead to enforcement action by ORC.
- **Service delivery** – In some specific cases, where special expertise is required, or coordinated control gives benefits to a specific area or the region as a whole, direct control (service delivery) will also be undertaken. Service delivery includes providing control tools where appropriate (e.g. traps, chemicals) and releasing biological control agents (e.g. broom gall mite).

Table 2: Summary – Programmes, Pests and Principle Measures

Programme and pests	Advocacy and education	Inspections, monitoring and surveillance	Collaboration with others	Requirement to Act	Service delivery
Exclusion					
African feather grass	✓	✓	✓		
Chilean needle grass	✓	✓	✓		
Egeria	✓	✓	✓		
False tamarisk	✓	✓	✓		
Hornwort	✓	✓	✓		
Moth plant	✓	✓	✓		
Eradication					
Bennett's wallaby	✓	✓	✓	✓	✓ ¹
Rooks	✓	✓	✓	✓	✓
Spiny broom	✓	✓	✓	✓	✓
Progressive containment					
African love grass	✓	✓	✓	✓	✓
Nassella tussock	✓	✓	✓	✓	
Old man's beard	✓	✓	✓	✓	
Spartina	✓	✓	✓	✓	✓ ²
Six grouped plants	✓	✓	✓	✓	✓ ²
Wilding conifers	✓	✓	✓	✓	✓ ³
Sustained control					
Gorse and broom	✓	✓	✓	✓	
Nodding thistle & ragwort	✓	✓	✓	✓	
Russell lupin	✓	✓	✓	✓	
Feral rabbits	✓	✓	✓	✓	✓ ⁴
Site-Led					
Animals					
Bennett's wallaby	✓	✓	✓	✓	
Feral deer	✓	✓	✓		
Feral pig	✓	✓	✓		
Mustelids	✓	✓	✓		
Rats	✓	✓	✓		
Feral cat	✓	✓	✓		
Feral goat	✓	✓	✓		
Hedgehog	✓	✓	✓		
Possum	✓	✓	✓		
Plants					
Banana passionfruit	✓	✓	✓		
Darwin's barberry	✓	✓	✓		
Gunnera	✓	✓	✓		
Chilean flame creeper	✓	✓	✓		
Sycamore	✓	✓	✓		
Tradescantia	✓	✓	✓		

1 ORC will undertake direct control where agreed with occupiers.

2 ORC will undertake direct control, only where access, spraying or safety issues require expert involvement.

3 ORC will undertake direct control as required, and alongside established groups.

4 ORC will undertake direct control only where specialist expertise is required e.g. for biological control methods.



Figure 2: Bomarea may look pretty but it is a pest and control is a land occupier's responsibility wherever it occurs in the region. Photo source: Weedbusters.

2.3 Management and reporting

Pest management activities are undertaken through a mix of council staff, other agencies, contractors and volunteers. As the management agency lead, ORC is responsible for reporting on activities and progress during the year. ORC audits information received from various sources and reports that information and progress against the targets set out in this Operational Plan through an RPMP Annual Report, as required by Section 100B of the Biosecurity Act 1993.

As the lead agency for most pests, ORC will also report to Council on the number of instances staff have intervened and used the powers in the RPMP to enforce rules or act on default. There are exceptions in this Operational Plan where another agency is the lead agency (such as LINZ for lagarosiphon management). Also, ORC acts as a significant wilding conifer funding manager on behalf of MPI in the region. In these instances, reporting to funders on enforcement and progress against targets is a joint responsibility.

Receiving and responding to complaints is a key role for all staff involved in implementing RPMP rules and other activities. Complaints are responded to between 24 hours and 10 working days depending on the nature of the issue. All biosecurity complaints are logged into an ORC database. A rules exemptions register will also be maintained.

2.4 Financial overview

The financial expenditure required for implementing the pest programmes (to achieve RPMP objectives) and other biosecurity work is summarised in Table 3 below. Funding (revenue) is received through general and targeted rates as described in the annual plan. This is based on capital value, region-wide, as the whole of the regional community benefits from the majority of biosecurity work carried out (e.g. advocacy/education and inspections, monitoring and surveillance work).

The biosecurity budget for 2020/21 is \$1.857m, which is an increase of approximately \$500,000 on the previous year. The increased expenditure reflects additional species and initiatives brought about as a result of the RPMP review. External funding of approximately \$177,000 to support the management of wilding conifers and lagarosiphon and the Check, Clean and Dry programme.

Table 3: RPMP expenditure budget for 2020-2021.

	Budget 2020-2021 Draft Annual Plan (to the nearest \$1,000)
Pest Management Programmes	
Exclusion programme	\$4,000
Eradication programme	\$316,000
Progressive containment programme	\$400,000
Sustained control programme	\$810,000
Site-led pest programmes	\$107,000
Other Biosecurity Activities	\$220,000
TOTAL	\$1,857,000

The following points highlight areas of new work that are anticipated this year:

- Development of a meaningful partnership with Kāi Tahu in order to connect regularly on biosecurity issues, to identify areas of importance to Kāi Tahu and actively promote collaborative action.
- Establishment of a new surveillance programme for exclusion pests.
- Increased wilding conifer inspections and monitoring.
- Initiating a site-led programme in support of Predator Free Dunedin aspirations.
- Stepped up engagement and co-ordination with occupiers over rabbit issues on lifestyle blocks.
- Increasing wallaby surveillance and compliance, and liaison with neighbouring councils.
- Collaboration with other agencies on marine pest pathway planning.
- Streamlining operating procedures that allow for better use of Biosecurity Act powers.

Note that actual expenditure for the 2020/21 year will be determined through the Annual Plan process. Funding levels are further examined and set during subsequent Long Term Plan (LTP) processes⁶.

⁶ While the LTP sets funding levels for a 10-year period, the Plan is reviewed and updated as appropriate every three years to reflect any changes during that time.

3. Pests / Pest Programmes

3.1 Exclusion pest programme

Exclusion pests include six pest plants which are not known to be present in Otago. Continued vigilance is required from all people in the region to maintain their exclusion status. They are a mix of exotic plant species: grasses (2), aquatic plants (2), one shrub and a climbing vine.

Objective: *What we are doing and why?*

Preclude the establishment of the pests (listed below) in the Otago region for the duration of the RPMP. The pests and values that are being protected through their exclusion are:

- African feather grass – economic (agriculture)
- Chilean needle grass – economic (agriculture)
- *Egeria* – environmental (freshwater)
- False tamarisk – environmental (riverbeds)
- Hornwort (*Ceratophyllum*) – environmental (freshwater)
- Moth plant – environmental (native trees/shrubs) and human health

Deliverables: *How the programme will be implemented?*

- Advocacy:
 - Farmers and farming leaders are made more aware of African feather grass and Chilean needle grass (Figure 3) and their pathways of spread.
 - Lake and river users in the region are targeted to increase their knowledge and understanding of the threats (along with other freshwater pests).
- Surveillance:
 - Active surveillance (by specialists) of the plants likely habitats (high-risk sites) at least annually.
 - Encourage passive surveillance (and notification to ORC) by members of the public.
- Response – prompt incursion/response planning of all reports and confirmed sightings and service delivery if required.
- Collaboration:
 - Regular liaison and working closely with neighbouring regional councils.
 - Provide training to key stakeholders⁷ (who are working in the pests' high-risk habitats).
- Regulation – there are no specific rules, because under sections 52 and 53 of the Biosecurity Act it is illegal to knowingly communicate, release, spread or offer for sale these pests.
- Reporting – ORC will audit all reports received, ensure consistency in reporting style and report against KPIs listed below via the RPMP Annual Report.

⁷ Key stakeholders include farmers, contractors and other government agencies (LINZ, MPI, DoC etc).

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ Absence in the region – no exclusion pests established in Otago during 2020/21.
- ✓ Reported sightings investigated within 24 hours of ORC becoming aware of a report.
- ✓ In the event of a confirmed discovery, assessment of the risks/issues made within 48 hours and a control/response strategy defined within 5 working days and implemented as soon as practical.
- ✓ At least annual operation level liaison focused on exclusion strategies with biosecurity counterparts in Canterbury and Southland (along with discussions on other matters).



Figure 3: Chilean needle grass is difficult to manage in Canterbury and Marlborough and it can be transported long distances to new sites. We don't want it establishing in Otago. Photo source: Environment Canterbury.

3.2 Eradication pest programmes

The eradication programme is restricted to three contrasting pest species in the region. They belong in this programme as their infestation levels are considered low enough for eradication to be feasible in the long-term. The pests include one marsupial (Bennett's wallaby), a bird (rook) and a plant (spiny broom). Implementation of management programmes for each pest is described separately in the following subsections due to the different approaches taken.

3.2.1 Bennett's wallaby

Objective: *What we are doing and why?*

The Bennett's wallaby project was initiated in response to an increase in wallaby sightings in and around Otago. While the scope of the project is evolving, it has already established key facts around the wallaby threat to Otago, is beginning to increase public awareness and provides for important wallaby control when found in the region. There are three key objectives:

- Reduce known wallaby populations to zero density, in an attempt to eradicate them, and prevent their further expansion in the region,
- Prevent further spread of wallaby into North Otago from Canterbury.
- Inform the Otago community on the wallaby threat and encourage vigilance and reporting to council.

Eradication is required to protect economic (plantation forestry and agriculture, including grass production and green crops) and environmental (tussock grasslands and vegetation understorey/regeneration) values.

Deliverables: *How the programme will be implemented?*

- Inspection – in relation to rules and via reports/complaints, undertake timely property inspections and issue control notices (as appropriate).
- Surveillance – inspection and assessment of known hotspots where previous control work has been undertaken (Figures 4a and 4b) using trained indicator dogs, Judas wallabies, and thermal imagery and artificial intelligence cameras.
- Service delivery – undertake direct control where agreed with occupiers (control becomes a shared responsibility e.g. DoC estate).
- Advocacy:
 - Increase awareness among North Otago rural land occupiers on wallaby threats and the need to be vigilant.
 - Continue the stepped-up region-wide awareness programmes (e.g. signage, posters, one-to-one farmer liaison and field guides) and utilise media opportunities where they arise.
- Collaboration:
 - Collaboration and coordination with ECan as described in joint MOU.

- Partnerships maintained with the interregional team (comprising ORC, ECan, MPI and Landcare Research through the Sustainable Farming Fund).
- Attend and advocate for increased support and recognition at the national wallaby steering group meetings led by MPI.
- Regulation – specific rules:
 - Require occupier control of wallaby, unless a shared responsibility agreement is in place (as per ‘service delivery’ above).
 - Make it an offence to keep/harbour any Bennett’s wallaby.
 - Require mandatory reporting to ORC of any dead/alive wallaby sightings from any person.
- Enforcement – above rules enforced as necessary and issuing of formal notices following the Biosecurity Act and ORC procedures.
- Reporting – ORC will audit all reports received, document control and enforcement interventions made, and report against KPIs via the RPMP Annual Report.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ Reports, notifications and complaints⁸ responded to within 5 working days.
- ✓ Any legal notices issued assessed for compliance at expiry period and appropriate enforcement action initiated under the Biosecurity Act.
- ✓ Audit Contractors who are contracted to undertake wallaby control to ensure all legislative, contractual and health and safety requirements are being met.
- ✓ Ensure all property owners where wallabies have been located are spoken to at least twice a year and provide an update on the current status.
- ✓ At least biannual liaison with the interregional partnership group.
- ✓ Programme of surveillance developed and implemented.
- ✓ Support for a National Wallaby Management Business Case (for funding) actively promoted to MPI at every opportunity (refer also section 4.4).
- ✓ Wallaby reporting App upgraded to be consistent with Ecan and Waikato/BOPRC councils systems by June 30th 2021.
- ✓ Assess the potential for using hunting permit system as a way to raise wallaby awareness in public hunting areas by June 30th 2021.

⁸ All complaints received are recorded in a database from which reports can be extracted to measure performance.



Figure 4a: Wallabies are nocturnal and can travel great distances at night, hence their ability to spread rapidly. They need to be halted from spreading into Central Otago from North Otago. Photo source: N. Manning, ORC.



Figure 4b: Wallaby detection using dogs like 'Jed' is crucial in the effort against wallaby spread into previously clear areas. Photo source: S. Stevenson, ORC.

3.2.2 Rooks

Objective: *What we are doing and why?*

Reduce rook populations to zero density, within the RPMP period and maintain this status until eradication is attained.

Eradication is required to protect economic values in the region (e.g. cereal fields and other newly planted crops, walnut trees). Minimal time is expended due to low numbers and natural attrition of rook numbers. It is believed there are no female birds in Otago (therefore no viable breeding population)⁹.

Deliverables: *How the programme will be implemented?*

- Inspection – continuation of the monitoring programme with a focus on the Clydevale/ Clinton and Strath Taieri/Maniototo areas.
- Surveillance – inspection and assessment of known hotspots where previous control work has been undertaken.
- Service delivery – undertake direct control operations.
- Advocacy – continuation of education among landowners in the areas above.
- Collaboration – regular liaison and working closely with neighbouring regional councils on population trends/movements.
- Regulation – a specific rule makes it an offence to interfere or disrupt any rook control programme.
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ Reports, notifications and complaints responded to no later than 3 working days.
- ✓ Known rookeries inspected annually.
- ✓ Service delivery carried out to 'best practice' and always in accordance with animal welfare legislation.

⁹ Although, in July 2019, 18 rooks were sighted near Kyeburn – their fate remains unknown.

3.2.3 Spiny broom

Objective: *What we are doing and why?*

Reduce spiny broom populations to zero density (focusing on the Waihola, Chain Hills and Brighton areas) within the RPMP period and maintain this status until eradication is attained.

Eradication is required to protect economic (pastoral farming) and environmental (indigenous ecosystem) values.

Deliverables: *How the programme will be implemented?*

- Inspection – twice-yearly inspection programme.
- Surveillance – active surveillance (by specialists) of the plant's likely habitats (high-risk sites).
- Service delivery – ORC will undertake direct control operations as required.
- Advocacy – continuation of education among landowners in the areas above.
- Collaboration – regular liaison and working closely with neighbouring regional councils on population trends/movements.
- Regulation – there are no specific rules, because under sections 52 and 53 of the Biosecurity Act it is illegal to knowingly communicate, release, spread or offer for sale this pest.
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ No spiny broom established in new localities within Otago during 2020/21.
- ✓ Reports, notifications and complaints responded to within 5 working days.
- ✓ Known infestations inspected biannually.
- ✓ Service delivery carried out to 'best practice' standards.

3.3 Progressive containment pest programmes

The 11 pest plants, or groupings of plants, in this category are all reasonably well established in the region. Although eradication is unlikely, densities can readily be reduced over the duration of the RPMP. The diverse range of species in the containment category includes three grasses and three shrubs, two herbs and two climbing vines, and wilding conifers (trees).

Operational programmes for these plant groupings are divided into and described in six subsections below, mostly due to their unique management regimes and/or funding streams:

- African love grass – managed by ORC due to identification difficulty;
- Nassella tussock – occupier control, distinct inspection regimes;
- Old Man’s Beard – occupier control, large budget and several distinctive KPIs;
- Spartina – occupier control, an aquatic/estuarine species;
- Six grouped plants – all managed by occupiers to the same requirements; and
- Wilding conifers – occupier control, with several conifer specific rules.

3.3.1 African love grass

Objective: *What we are doing and why?*

Contain African love grass to its 20 known sites (around Earnsclough, Clyde, Omakau, Queensbury and Pisa Moorings) within the region, reduce its densities at these sites and prevent spread to new sites.

Containment is required, over time, to protect economic (pastoral farming) and environmental (indigenous ecosystem and habitat) values.

Deliverables: *How the programme will be implemented?*

- Inspection – continuation of annual inspections at known sites, increasing to bi-annual investigations where applicable.
- Monitoring – establish appropriate monitoring sites where an uncomplicated monitoring system (e.g. photo points) can compare densities over RPMP period.
- Surveillance – active surveillance of the plant’s likely habitats in high-risk sites.
- Service delivery – undertake direct control operations as required.
- Advocacy – continuation of education among landowners.
- Regulation – there are no specific rules, because under sections 52 and 53 of the Biosecurity Act it is illegal to knowingly communicate, release, spread or offer for sale this pest.
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ Known sites inspected at least annually, with pre-determined highest risk sites visited biannually.
- ✓ Density measurement/recording method established at 2-3 key sites by June 2021 (which can demonstrate in subsequent years that at least 10 percent of sites treated show reduced density compared with the previous year).
- ✓ Reports, notifications and complaints responded to within 5 working days.
- ✓ Passive public surveillance process developed and implemented.
- ✓ Service delivery carried out to 'best practice' standards for using agrichemicals (e.g. spraying prior to flowering, repeat treatment possible 3 months following, exclude stock from treatment area).

3.3.2 Nassella tussock

Objective: *What we are doing and why?*

Contain nassella tussock to known areas within the region – around Roxburgh/Alexandra (Galloway and Knobby Range areas – approx. 32,000 ha.), lower Cardrona Valley (Deep Creek to Riverbank Road – approx. 4,500 ha.) and the lower Waitaki Valley (Georgetown and Tussocky/Ridge Roads – approx. 4,100 ha.), reduce its densities at these sites and prevent spread to new sites.

Containment is required, over time, to protect economic (pastoral farming) and environmental (indigenous ecosystem and habitat) values, such as displacement of native tussocklands.

Deliverables: *How the programme will be implemented?*

- Regulation/enforcement – occupier control of all nassella tussock is required and issuing of formal notices is undertaken as required by ORC.
- Inspection – continuation of at least twice yearly inspections at known sites during autumn and winter (Waitaki and Cardrona Valley areas = 40 person days in each area and Roxburgh/Alexandra areas = 46 days).
- Surveillance – 'tussock ranging' undertaken outside of traditional and known areas, focusing on likely high-risk habitats currently free of nassella (Figure 5).
- Monitoring – establish appropriate monitoring sites where nassella densities can be practicably measured to determine programme/occupier control success over the RPMP period.

- Service delivery – undertake direct control of individual/isolated plants as found through opportunistic discovery.
- Advocacy – stepped up education and awareness of Cardrona and Waitaki Valley landowners and ongoing support provided for the Roxburgh Nassella Community Group (RNCG).
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ At least 40,000 hectares of nassella infested land is inspected biannually, between March and October (prior to seeding).
- ✓ All Biosecurity Act Notices of Direction (NOD) issued are assessed for compliance at expiry of the relevant NOD period.
- ✓ Density measurement/recording method established at chosen sites (appropriate for an occupier control programme) which can demonstrate in subsequent years that nassella densities are reducing.
- ✓ Service delivery carried out to 'best practice' standards.
- ✓ At least one 'new approach' nassella field day held in each of the Cardrona and Waitaki communities by June 2021.



Figure 5: Nassella ranging in North Otago. Photo source: R. Lord, ORC.

3.3.3 Old Man's Beard

Objective: *What we are doing and why?*

Contain Old Man's Beard (refer to Figure 6a) to known areas within the region:

- Dunedin City and surrounds;
- Waitaki District – Oamaru, Waianakarua, Kakanui/Kauru Rivers, Hampden and Palmerston;
- Clutha District – Beaumont to Balclutha (along the Clutha Mata-Au riverbanks);
- Central Otago District – Cromwell, Alexandra, Roxburgh/Teviot/Ettrick;
- Queenstown Lakes District – urban Queenstown, Closeburn, Rees Valley, Kawarau Gorge and Wanaka;

To reduce its densities at the above sites and prevent spread to new locations.

Containment is required, over time, to protect environmental (ecosystem and habitat) values where old man's beard smothers and pulls down trees and prevents seedling regrowth.

Deliverables: *How the programme will be implemented?*

- Regulation – occupier control of Old Man's Beard (refer to Figure 6b). Two rules require:
 - General clearance on any land where it occurs (to reduce infestation levels).
 - Manage spread (20m along shared boundaries) to prevent effects on neighbours undertaking control work.
- Inspection – annual summer inspections at known sites, where two-thirds of time/effort is dedicated to coastal Otago city/district sites. QLDC is a large area to cover and requires support.
- Enforcement action where/when required – following Biosecurity Act and ORC procedures.
- Advocacy – continuation of education among landowners in the areas above, encouraging the majority of occupier control to occur between November and April. <https://www.orc.govt.nz/news-and-events/news-and-media-releases/2020/january/old-man-s-beard-must-go>
- Monitoring and research – undertake herbicide trials as technology and products develop, including new biological control release possibilities.
- Collaboration – regular liaison and working closely with ORC river engineers (joint programmes/cost-sharing), LINZ and DOC on priority control areas.
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ At least 2,500 properties inspected annually and within budget:
 - Dunedin City – 1,800
 - Waitaki – 100
 - Central Otago – 300
 - Queenstown Lakes – 250
 - South Otago – 50

- ✓ All Biosecurity Act Notices of Direction (NOD) issued are assessed for compliance at expiry of the relevant NOD period.



Figure 6a (left): Old Man's Beard in full flower. It is most prevalent in Dunedin, but is a problem in many parts of the region, particularly around Teviot Valley, the Clutha River and along North Otago river banks. Stems can be destroyed using the cut and paste technique (Figure 6b, right) but requires vigilance to ensure all vines are severed. Both photos sourced from ORC.

3.3.4 Spartina

Objective: *What we are doing and why?*

Contain spartina to known areas within the region, such as in and around Waikouaiti Estuary, Karitane Estuary and in Pleasant Estuary, reduce its densities at the above sites and prevent spread to new locations.

Containment is required, over time, to protect environmental (natural habitats of estuarine flora and fauna) values.

Deliverables: *How the programme will be implemented?*

- Inspection – regular (at least annual) inspections at known sites – over 33 days.
- Service delivery – undertake direct control using contractors, only where access, spraying or safety issues require expert involvement (Figure 7).
- Surveillance/monitoring at historic sites: Harwood (Otago Peninsula), Blueskin Bay, Taieri Mouth and Catlins Lake.
- Regulation – occupiers must eliminate spartina infestations on land, upon receiving a written NOD from ORC.
- Enforcement – above rule enforced as necessary, and issuing of formal notices following Biosecurity Act and ORC procedures.
- Advocacy – undertake education initiatives with occupiers in and around the areas above, including at current and historic sites.
- Monitoring and research – undertake trials as technology and products develop, including drone trials such as at Pleasant Estuary to better detect new sites/regrowth.
- Collaboration – regular liaison and working closely with DOC on priority control areas involving public conservation land (PCL) and LINZ managed land and the rail corridor at Karitane and Pleasant River sites.
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ No new infestations found at historic sites (Harwood – Otago Peninsula, Blueskin Bay, Taieri Mouth and Catlins Lake).
- ✓ Service delivery carried out to 'best practice' standards, especially following Environmental Protection Authority permissions for spraying agrichemicals over water.
- ✓ Annual monitoring completed at all current and historic sites.
- ✓ Partnerships further enhanced with DOC and LINZ managers.



Figure 7: Spraying spartina in the Pleasant River estuary. Photo source: K. Robertson, ORC.

3.3.5 Six containment pest plants

Six pest plants have been grouped for ease of reporting, although they all occur in different parts of the region they are all required to be managed by occupiers to the same RPMP requirements, being elimination wherever they occur on properties.

Objective: <i>What we are doing and why?</i>		
<p>Contain the six pest plants listed below within the region for the duration of the RPMP, reduce their densities at known sites and prevent spread to new sites. The pests, known sites and the values that are being protected through their containment are:</p>		
<ul style="list-style-type: none"> • Bomarea 	<p>Dunedin City, Otago Peninsula, Waldronville and West harbour – 650 active sites/properties</p>	<p>Environmental (vines smother and prevent seedling growth)</p>
<ul style="list-style-type: none"> • Boneseed 	<p>Dunedin (Portsmouth Drive, Forbury, Port Chalmers and Aramoana); Taieri Mouth and Moeraki</p>	<p>Environmental (outcompetes natives and prevents access)</p>
<ul style="list-style-type: none"> • Bur daisy 	<p>Georgetown, Waitaki Valley (a 10 hectare block)</p>	<p>Economic (pastoral farming – wool contamination)</p>
<ul style="list-style-type: none"> • Cape Ivy 	<p>Dunedin City and Otago Peninsula – 65 sites/properties</p>	<p>Environmental (smothers ground plants and prevents seedling growth)</p>
<ul style="list-style-type: none"> • Perennial nettle 	<p>South Otago (Balclutha, Lawrence, Clydevale – along the Clutha / Mata Au River)</p>	<p>Economic (pastoral farming – pasture growth and animal health)</p>
<ul style="list-style-type: none"> • White-edged nightshade 	<p>One site at Hampden – historical sites on Otago Peninsula islands</p>	<p>Environmental (prevents understorey growth) and economic (agriculture – impenetrable to stock)</p>
Deliverables: <i>How the programme will be implemented?</i>		
<ul style="list-style-type: none"> • Regulation – occupier control rule for all six plants (total control of these pests is required on all land occupied). • Inspection – at least annual inspections of the six plants at all known sites. Bomarea is the biggest programme, allocated 450 hours. • Enforcement – above rules for the six plants is enforced as necessary, and issuing of formal notices following Biosecurity Act and ORC procedures. • Collaboration – with ECan over bur daisy control either side of the regional boundary. • Service delivery – when required, e.g. using abseiling contractors for boneseed control on cliffs (Andersons Bay) due to H&S requirements (refer to Figure 8). 		

- Advocacy – education and awareness programmes implemented, including encouragement of passive surveillance and reporting of isolated plants, e.g. bur daisy, boneseed and white-edged nightshade.
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ Annual monitoring completed and reported on at all current and historic sites.
- ✓ All Biosecurity Act Notices of Direction (NOD) issued are assessed for compliance at expiry of the relevant NOD period.
- ✓ Annual inspections of the six plants at all known sites completed.
- ✓ Passive surveillance and reporting of isolated plants mechanism developed and released for public use.

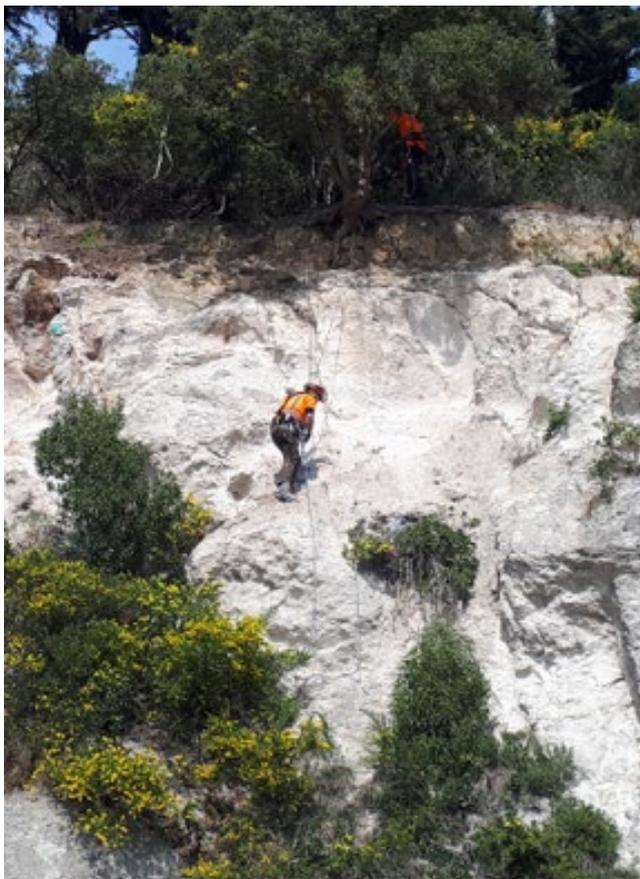


Figure 8: ORC contractor abseils to control cliffside flowering boneseed at Andersons Bay. Photo source: K. Robertson, ORC.

3.3.6 Wilding conifers (particularly contorta, Corsican, Scots, mountain and dwarf pine and European larch)

Wilding conifers are any introduced conifer tree, including the species listed below:

- Contorta (lodgepole) pine (*Pinus contorta*)
- Corsican pine
- Scots pine
- Mountain pine and dwarf mountain pine
- European larch
- Bishops pine
- Douglas fir
- Maritime pine
- Radiata pine
- Ponderosa pine

Wildings are established through natural means (unless located within a forest plantation, and they do not create any greater risk of spread to adjacent or nearby land than the forest plantation that they are part of). For RPMP purposes, a forest plantation is deemed to be an area of 1 hectare or more of predominantly planted trees. The definition also excludes planted conifers under 1 hectare, such as windbreaks and shelterbelts that existed before March 2019.

While the above species are 'named pests' in the RPMP, those in the left-hand column are the main subjects of RPMP rules. This is because they have little commercial value while all are highly invasive (contorta being the worst – refer Figure 9a).

Objective: *What we are doing and why?*

Contain wilding conifers within the region (in accordance with national strategy and programme aims), reduce infestation densities where practicable and prevent their spread to new locations (for example refer to Figure 9b).

Containment is required, over time, to protect economic values (pastoral farming and production forestry), landscape and recreational values (vistas, tourism, amenities) and environmental values (native ecosystems, especially high country tussock grasslands).

Deliverables: *How the programme will be implemented?*

- Regulation – specific rules:
 - Occupier control is required in areas previously controlled/funded under national or regional programmes (since January 2016).
 - Occupier control is required within 200m of an adjoining property where (since January 2016) the adjoining occupier has carried out control work.
 - A Good Neighbour Rule variation on the above – where an adjoining occupier is taking reasonable steps to manage wilding conifers.
 - A pest agent rule – occupier control is required where directed by ORC in relation to any wilding conifer capable of spreading (and is not in a plantation forest).

- Inspection – proactive monitoring (aerial inspections) undertaken in conjunction with the ‘gorse and broom free’ aerial inspection programme (see section 3.4.1), with follow up ground inspections/compliance as appropriate. Up to 300 hours allocated for inspections in Queenstown Lakes and Central Otago districts.
- Enforcement – above rules enforced as necessary, and issuing of formal notices following Biosecurity Act and ORC procedures.
- Collaboration:
 - Regional partnerships – attend and contribute to Wakatipu Wilding Conifer Control Group (WWCCG) and Central Otago Wilding Conifer Control Group (COWCCG).
 - National partnerships – implement the MPI national programme in the region (contract management, auditing, reporting) and attend and contribute to the national focused Operations Advisory Group (OAG).
- Service delivery – undertake direct control operations as required through working alongside established groups. A regional site inventory/assessment is required.
- Advocacy – continued education among landowners, including identification guides for species contained in shelterbelts and increased liaison with forestry companies.
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report and through the national programme as required.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ No new plantings of contorta, Corsican, Scots, mountain and dwarf pine and European larch occur.
- ✓ Aerial inspections carried out in Queenstown Lakes and Central Otago districts and compliance actions followed up on the ground with occupiers.
- ✓ Any legal notices issued are assessed for compliance at expiry period and appropriate enforcement action initiated under the Biosecurity Act.
- ✓ National control programme completed to contract standards and within budget allocations and reporting timelines.



Figure 9a: Wilding *Pinus contorta* spread well evident in the Nevis Valley. Photo source: N. Manning, ORC.



Figure 9b: Aftermath of wilding conifer control on slopes of Mt Colin, near Roaring Meg power station, November 2019. Photo source: P. Russell.

3.4 Sustained control pest programmes

The six pests in this category are well-established legacy pests in most regions of New Zealand. In Otago, five of the six pests have been managed for many years under legislation prior to the Biosecurity Act and RPMPs. Although eradication isn't viable, opportunities exist to prevent spread from infested areas to clear areas and to reduce 'externality impacts' on adjoining occupiers' values (e.g. reducing impacts on farming and recreational/environmental values) where those adjoining occupiers are motivated to undertake control.

The species named for ongoing control include five pest plants (two shrubs, two herbs, and a thistle) and one pest animal (feral rabbits). Operational programmes are divided into and described in the four sub-sections below, grouped or listed in relation to their occupier control management regimes across (predominantly) rural zoned land in the region:

- Gorse and broom – same method of seed dispersal, same rules apply.
- Nodding thistle and ragwort – rules requiring property boundary clearance (although the clearance distances differ other requirements are identical).
- Russell lupin – new rules, mostly relating to prevention of further lupin spread via water courses and through new plantings.
- Feral rabbits – rules to maintain rabbit densities below a common regional level.

3.4.1 Gorse and broom

Objective: *What we are doing and why?*

Ensure continuing control of gorse and broom, that prevents land free of these pests from becoming infested (primarily in Central Otago and Queenstown Lakes districts) and reduces adverse effects on the economic (and environmental) wellbeing of occupiers regionwide.

Ongoing control is required to maintain the gains and investment of prior control by occupiers to protect production (pastoral farming) and environmental (native ecosystem) values.

Deliverables: *How the programme will be implemented?*

- Regulation:
 - Occupier control rules require clearance of all plants on properties in mapped gorse and broom free areas (Central Otago, Queenstown Lakes).
 - Occupiers outside of gorse and broom free areas (Dunedin City, coastal districts and in 3-4 broad central Otago areas) are required to clear infestations within 10 m of their boundaries (on a valid complaint from adjoining occupiers).
- Inspection – the region is divided into four management blocks (Central Otago, Earnscliffe, Queenstown Lakes and Lindis blocks). Proactive monitoring (aerial inspections) is carried out in a different block each year (November/December), in conjunction with the wilding conifer aerial inspection programme. In the designated

aerial block for the year follow up ground inspections are made along with pre-programmed ground inspections in the other three blocks. Up to 50 staff days are allocated.

- Enforcement – above rules enforced as necessary, and issuing of formal notices following Biosecurity Act and ORC procedures.
- Advocacy – continuation of education among landowners. New occupier control rules come into effect in 2024 with regard to extensions to the current gorse and broom free areas¹⁰.
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report as required.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ At least 100 properties inspected and assessed for compliance:
 - Earnsclough – aerial inspection (of at least 25 properties) and follow up enforcement with occupiers who are required to comply with rules.
 - Central Otago – 50 properties, as above (this block was aerially inspected the previous year).
 - Queenstown lakes area – 15 properties, as above, (aerial for 2021/22).
 - Lindis – 15 properties, as above, (aerial for 2022/23).
- ✓ All Biosecurity Act Notices of Direction (NOD) issued are assessed for compliance at expiry of the relevant NOD period.
- ✓ Occupier complaints received outside of gorse and broom free areas responded to within 10 working days.
- ✓ Advocacy material to engage occupiers in designated gorse and broom free extension areas drafted by June 2021 (to roll out during 2021/2022).

¹⁰ For example, the gorse and broom free extension in the Cardrona Valley covers approx. 500 ha of land, where currently the 10m boundary clearance rule (on complaint) applies, until October 2024.

3.4.2 Nodding thistle and ragwort

Objective: *What we are doing and why?*

Ensure continuing boundary control of nodding thistle and ragwort to reduce adverse effects on the economic wellbeing of rural land occupiers regionwide.

Ongoing control is required to maintain the gains and investment of prior control by occupiers to protect production (pastoral farming) values.

Deliverables: *How the programme will be implemented?*

- Regulation:
 - Rural land occupiers are required to clear nodding thistles within 100m of their boundaries.
 - Rural land occupiers are required to clear ragwort within 50m of their boundaries.
- Inspection – initiated by ORC receiving a valid complaint from adjoining occupiers who are undertaking effective control work.
- Enforcement – above rules enforced as necessary, and issuing of formal notices following Biosecurity Act and ORC procedures.
- Advocacy – continuation of education among landowners.
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report as required.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ Occupier boundary related complaints responded to within 10 working days.
- ✓ All Biosecurity Act Notices of Direction (NOD) issued are assessed for compliance at expiry of the relevant NOD period.

3.4.3 Russell lupin

Objective: *What we are doing and why?*

Instigate boundary controls of Russell lupin (clearance distances differ depending on the infestation situations) to prevent spread (e.g. the planting and subsequent seeding) of wild lupin plants, and to reduce adverse effects in rural zoned land.

Proactive management is required to protect regional environmental values (natural ecosystems, and especially braided rivers and 'at risk' catchments such as the Dart, Rees, Matukituki, Makarora, Hunter and Shotover, downstream of Arthurs Point, river catchments).

Deliverables: *How the programme will be implemented?*

- Regulation:
 - A pest agent rule makes it an offence to plant this pest within 200m of a braided river edge, 50m of a non-braided river¹¹, and within 10m of an artificial water course or adjoining property boundary.
 - Rural land occupiers are required to clear wild Russell lupin on their properties within the parameters outlined in the rule above.
 - Rural land occupiers (including Crown managed public conservation land) are required to clear wild Russell lupin on their properties within 10m of their boundaries, as directed by ORC and where adjoining occupiers are undertaking effective control.
- Inspection – initiated by ORC based on risk and available resources. Establishment of a baseline of highest risk sites in the region commenced in 2019/2020 as there were no prior records. Continuation of this work will occur during 2020/21, focusing on tussock country and braided riverbeds.
- Enforcement – above rules enforced as necessary, and issuing of formal notices following Biosecurity Act and ORC procedures.
- Advocacy/collaboration – targeted education among landowners in high-risk areas and liaison further established with owners who grow Russell lupin on a commercial scale – so they fully understand the rule implications and their obligations (Figure 10).
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report as required.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ Baseline of highest risk sites documented and operational in time for the 2020/21 year inspections to commence, by 30 June 2020.

¹¹ This requirement can be reduced to 10m provided the river is not within the six at risk catchments named (refer to the heading 'objective' above) and planting is in accordance with a Russell lupin management plan – see Appendix 1.

- ✓ All Biosecurity Act Notices of Direction (NOD) issued are assessed for compliance at expiry of the relevant NOD period.
- ✓ Establish relationships with commercial suppliers and advise them about the rules and obligations.
- ✓ Annual inspection of high-risk areas where Russell lupin is planted as production crop to ensure there is no spread (e.g. tussock country and braided riverbeds).
- ✓ Approval of lupin management plans within 25 working days of being received from occupiers.



Figure 10: Wild Russell lupin looks colourful but is out of place in Central Otago's iconic tussock landscape. Photo source: ORC.

3.4.4 Feral rabbits

Objective: *What we are doing and why?*

Ensure continuing control of feral rabbits to manage their spread and to reduce adverse effects and externality impacts on the economic wellbeing of land occupiers regionwide (refer to Figure 11a). By keeping rabbit densities below a set threshold, adverse effects on the regional environment will also decrease.

Ongoing control is required to maintain the gains and investment of prior control by many occupiers, to protect production (pastoral farming) and environmental (soil stability and native vegetation) values.

Deliverables: *How the programme will be implemented?*

- Regulation:
 - All occupiers are required to control rabbit densities to at or below level 3 on the Modified McLean Scale (refer to Appendix 2).
 - A Good Neighbour Rule (GNR) requires occupiers to control rabbits to the same density above (on written direction from ORC) within 500m of their boundaries.
 - No one can use firearms where they will interfere with ORC-led control baiting operations.
- Monitoring – night counts (along preset transects/routes) are carried out across 14 locations (Cromwell, Roxburgh, Roxburgh North, Roxburgh south, Ettrick, Lindis, Cromwell, Luggate, Manorburn, Fruitlands, Bannockburn, Otarehua, Poolburn, Tarras – refer Appendix 3) to assess trends in rabbit densities. These data will help inform where inspections are carried out (along with RHD K5 virus sampling).
- Inspections:
 - No less than 130 rural property (over 10 ha in size) inspections carried out, provisionally:
 - Upper Clutha/Queenstown/Wakatipu = 35
 - Alexandra/St Bathans/Ida/Manuherikia = 25
 - Roxburgh = 35
 - Cromwell/Bannockburn = 20
 - Hyde/Middlemarch/Strath Taieri/Sutton/Macrae's/Waihola = 25
 - Otago Peninsula/Moeraki = 10
 - No dedicated inspection work is carried out on properties under 10 ha unless they border a larger property which is being impacted.
 - The GNR is initiated by ORC on receiving a valid complaint from adjoining occupiers who are undertaking effective control work.
- Enforcement – above rules enforced as necessary, and issuing of formal notices following Biosecurity Act and ORC procedures. Exemptions may apply under s.78 of the Act (rules 1 and 2 only).

- Advocacy:
 - Continuation of education of regional landowners via the web-based ORC Pest Hub, to meet increased expectations of control.
 - Develop awareness programmes targeting owners of rural residential (lifestyle blocks) and other peri-urban properties (under 10 ha in size).
 - Stepped up farmer and community engagement through rural liaison groups/committees.
- Service delivery – if appropriate, including biocontrol. Biological control of rabbits (RHD) management/research (refer to Figure 11b) is covered under section 4.2.
- Collaboration – ORC will facilitate the establishment of landowner-led rabbit control groups in the region, as appropriate and including DOC, LINZ, landowners and contractors, modelled on best practice examples within Otago (such as Maniototo Pest Management Incorporated - MPM) other regions and an Australian model based on landcare groups leading management efforts¹².
- Reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report as required.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ All rabbit complaints responded to within 10 working days.
- ✓ At least 130 rural property inspections carried out annually, within budget and follow up enforcement measures implemented as appropriate.
- ✓ All Biosecurity Act Notices of Direction (NOD) issued are assessed for compliance at expiry of the relevant NOD period. Default action, where required, is carried out to 'best practice' and always in accordance with animal welfare legislation
- ✓ Exemptions processed in accordance with Biosecurity Act criteria and ORC procedures, with records maintained annually for public inspection.
- ✓ Night count monitoring programme completed and outcomes reviewed in a timely manner for the season.
- ✓ Council to consider preferred operating model for landowner-led rabbit control groups, and its role in such groups.
- ✓ Establish at least one central and one coastal Otago new landowner-led rabbit control group by December 2021.

¹² An example is the 2014 Victorian Rabbit Management Collaboration Initiative – An Invasive Animals CRC Project https://www.pestsmart.org.au/wp-content/uploads/2014/11/VICRabbitInitiative_LAdams_Oct2014_FINAL.pdf



Figure 11a: Vegetation loss and soil damage and erosion from high rabbit numbers, near Arrowtown. Photo source: N. Manning, ORC.



Figure 11b: Equipment used for the release of rabbit haemorrhagic disease – RHD (K5 strain). Photo source: N. Manning, ORC.

3.5 Site-led pest programmes

The RPMP site-led programme is about protecting the environmental values at several named sites from the ravages of multiple pests. As a result, the management programme focuses on specific threats to each site and provides for the control of many pests, often those that are not managed elsewhere in the region (e.g. possums, rats).

The RPMP Includes four site-led programmes. For the Operational Plan three of them, Otago Peninsula, West Harbour-Mount Cargill and Quarantine and Goat islands (all within Dunedin City) are grouped, as the same six pest plant species and 15 pest animal species are managed generically across all three places. The fourth site-led programme concerns the LINZ-led management of lagarosiphon (oxygen weed), where different controls are implemented in different lakes. New site-led programmes will be considered via the RPMP in the future.

3.5.1 Otago Peninsula, West Harbour – Mount Cargill and Quarantine and Goat Islands

Objective: *What we are doing and why?*

Support community groups and other agencies to protect the ecological integrity of the Otago Peninsula (9,000 ha), West Harbour-Mt Cargill (12,500 ha) and Quarantine and Goat islands. The intention is to exclude, eradicate, or implement progressive/sustained control of the 15 named pest animals (although objectives/targets differ slightly at each site):

- Bennett’s wallaby
- Feral cat
- Feral deer – 3 species
- Feral goat
- Feral pig
- Hedgehog
- Mustelids – 3 species
- Possum (eradication from the Peninsula)
- Rats – 3 species (eradication from Quarantine Island)

In relation to six named pest plants, there is a common objective to progressively contain them at all three sites:

- Banana passionfruit
- Chilean flame creeper
- Darwin’s barberry
- Sycamore
- Gunnera
- Tradescantia

The above measures protect many different indigenous ecosystems, and the interrelated programmes will enhance regional biodiversity values (where many Dunedin residents live, work and play).

Deliverables: *How the programme will be implemented*

- Collaboration (‘whole of site’ management planning is required):
 - ORC supports existing community and landowner efforts on the Peninsula (through the Otago Peninsula Biodiversity Group).

- The Landscape Connections Trust, Otago Natural History Trust, Orokonui Ecosanctuary (and Halo Project), OSPRI (bovine TB eradication) and volunteers are all partners with ORC in the growing momentum of work occurring at West Harbour-Mt Cargill.
- There are joint efforts to rid the two islands of rats and exclude other pests.
- Advocacy – continuation of education among landowners and volunteer groups on the benefits of partnering and importantly, ‘telling the success’ stories.
- Service delivery – Implement enforcement action where there are barriers to occupier participation.
- Regulation:
 - Generic rules make it an offence to hold or harbour the pest animals listed (except rats) on Otago Peninsula and West Harbour-Mount Cargill.
 - For Quarantine and Goat islands only the above rule also applies but extends to include rats.
 - There are no occupier rules for the pest plants listed but they may be considered in the future.
- Enforcement – above rules enforced as necessary and issuing of formal notices following Biosecurity Act and ORC procedures.
- Monitoring and reporting – ORC will audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ Adopt Predator Free Dunedin 2050 ‘whole of site’ management plan/s by December 2020.

3.5.2 Lagarosiphon (in conjunction with Land Information New Zealand)

Objective: *What we are doing and why?*

Support LINZ in controlling and eradicating lagarosiphon in the region's rivers and lakes. ORC works collaboratively with LINZ (and others) on ten-year lagarosiphon management plans (which are aimed to align with the 2019 to 2029 RPMP) at the following sites:

- Prevent lagarosiphon establishment specifically in Lake Wakatipu (and other regional water bodies where it isn't present).
- Progressively contain lagarosiphon in Lake Wanaka and the Kawarau River, to reduce its extent.
- Undertake sustained control of lagarosiphon in Lake Dunstan to reduce its impacts on water users.

The above measures protect significant freshwater values in the region as well as enhancing recreational pursuits, tourism/aesthetic enjoyment of and access to these iconic places.

Deliverables: *How the programme will be implemented?*

- Collaboration:
 - Joint planning and meetings with LINZ and other stakeholders.
 - Meetings attended annually with three groups – Wakatipu/Kawarau River Group, and Lake Dunstan and Wanaka community groups.
- Surveillance – ORC will survey other water bodies that are not a LINZ responsibility – Moke Lake, Manorburn and Poolburn dams, Butchers and Conroys Dams, Falls Dam, Fraser Dam and monitor Albert Town stormwater detention ponds and Bullock Creek sites.
- Monitoring – liaise with Boffa Miskell to ensure monitoring is carried out at Wakatipu / Kawarau, Wanaka and Dunstan sites in accordance with management plans (refer to Figure 12).
- Advocacy – continuation of education among water users and landowners with ponds on the threats posed by having 'dirty boats/equipment' (advocacy extends into the *Check Clean Dry* programme – covered under section 4.5).
- Regulation (with appropriate enforcement action if required):
 - Water users, before leaving lakes Dunstan, Wanaka or Roxburgh, and the Clutha/Mata-Au and Kawarau rivers, must remove all lagarosiphon fragments from boats and equipment and safely dispose of them.
 - Occupiers must destroy all lagarosiphon in ponds and aquariums on their properties and dispose of material safely.
- Service delivery – when required on a case by case basis (e.g. Bullock Creek control programme).

- Monitoring and reporting – ORC will work closely with LINZ, audit all reports received, document monitoring and control outputs and report against KPIs via the RPMP Annual Report.

Key Performance Indicators for 2020/21: *What are the targets to meet?*

- ✓ No lagarosiphon found in Lake Wakatipu or at Moke Lake, Manorburn and Poolburn dams, Butchers and Conroys Dams, Falls Dam, or Fraser Dam during 2020/21.
- ✓ At least annual surveys of the nine priority 'non-LINZ' managed sites identified.
- ✓ Attend and contribute to stakeholder meetings (as required) and up to two meetings per year with each of the three community/lake user groups identified.
- ✓ Service delivery carried out to 'best practice' standards, especially following Environmental Protection Authority permissions for spraying agrichemicals over water.



Figure 12: Lagarosiphon control in a Central Otago lake. Photo source: Boffa Miskell/LINZ.

4. Other Biosecurity Activities

4.1 Overview

The regional council undertakes many other biosecurity leadership and coordination activities that are not directly related to the management of individual pest species or provisions set out in the RPMP (or the Biosecurity Act). These activities are discussed more fully in the Biosecurity Strategy (the Strategy¹³) under four key headings:

- Proactive biosecurity management – showing leadership and addressing issues before they become significant (refer to Figure 13).
- Responsive and flexible – utilising the most efficient and effective methods to control harmful organisms.
- Integrated and collaborative action – working with all parties at all levels.
- Landscape-scale and site scale – targeting key areas for collaborative and coordinated control.



Strategy actions have many overlaps with individual pest species management, such as landowner-led rabbit programmes and lagarosiphon control which are outlined in their respective categories in section 3.

The following sub-sections summarise priority projects from the Strategy and other internal work programmes, which target issues and opportunities that are current and were identified in the development of the RPMP and Strategy. Projects are presented in a generic format to assist readers, with KPIs noted where relevant.

Figure 13: Ubiquitous spring scene near Bannockburn, with hillsides covered with wild thyme and wild briar. One of ORC’s biosecurity leadership roles is to prevent further exotic invaders establishing in the region. Photo source: P Russell

¹³ While the Strategy is a non-statutory document, ORC is committed to working collaboratively with stakeholders, groups, communities and individuals to implement the Strategy to achieve good biosecurity outcomes.

4.2 Proactive biosecurity management

Actions / activities	KPIs / comments
<p>Leadership and liaison: Establish and facilitate a biosecurity technical working group (TWG) to meet twice a year to share ideas and innovations, identify synergies and collaborate on biosecurity projects.</p> <p>Parties to include: DOC, LINZ, MPI, farming, industry, tourism and environmental organisations, and Kāi Tahu.</p> <p>Recent project development has included liaison on marine pest organisms with Environment Southland and NIWA, exploring options for an inter-regional pest pathway plan similar to the successful plan implemented for Fiordland.</p>	<ul style="list-style-type: none"> • TWG set up by October 2020 with the first meeting held before December 2020 and second meeting (if appropriate) before 30 June 2021. • Develop a meaningful partnership with Kāi Tahu in order to connect regularly on biosecurity issues, to identify areas of importance to Kāi Tahu and actively promote collaborative action. • Biannual liaison with parties interested in keeping marine pest organisms out of the region.
<p>Biocontrol: For many organisms that are well-established biocontrol can be a cost-effective option. A good biocontrol will weaken a pest sufficiently and can greatly reduce impacts that the pest causes, however eradication is not a likely outcome.</p> <p>ORC provides funding to the National Biocontrol Collective which operates a pooled resource from the councils around the country to fund research to seek out and test biological agents for invasive weeds. Other research is carried out for pest animals (e.g. RHD research around rabbit management).</p> <p>ORC also funds the strategic release of biocontrol agents as part of the service delivery for certain RPMP pests (e.g. broom – refer to Figures 14a and 14b).</p>	<ul style="list-style-type: none"> • Support the national biocontrol collective for research and introduction of biocontrol agents into New Zealand • Undertake rabbit RHD sampling as required and K5 research work • Broom Gall Mite and other agents – harvest and release these agents at 25 new sites Otago wide, along with other biocontrol initiatives



Figure 14a: The broom gall mite is having a devastating impact on broom in parts of the region, seen here dying off, pictured near Quartzville, November 2019. Photo source: P Russell.



Figure 14b: Biosecurity Team Leader Richard Lord inspects galls on dead broom near Quartzville which has succumbed to the mite's deadly effects. Photo source: P Russell.

Actions / activities	KPIs / comments
<p>Landowner-led possum control programme: Develop a possum control programme focusing on OSPRI completed areas for long-term bovine tuberculosis eradication and biodiversity gains.</p> <p>A volunteer landowner programme is anticipated, starting with the RPMP site-led areas, and informed by successful models in other regions.</p> <p>Parties to include: OSPRI, landowners, other regional councils.</p>	<p>It will never be cheaper to 'maintain the gains' of prior possum control (where low densities have been achieved over large areas) than possum control ceasing and restarting some years later:</p> <ul style="list-style-type: none"> • Develop terms of reference and background scoping of the project by April 30th, 2021 (with a view to inclusion in a five-year RPMP review). • Liaison with Horizons, Hawkes Bay and Waikato regions where landscape-scale (non-OSPRI managed) possum control programmes have operated for many years.

Actions / activities	KPIs / comments
<p>Excluding harmful organisms from the region: Establish a surveillance programme for exclusion pests in partnership with neighbouring regional councils where this is efficient and effective. The key is for the parties to work collaboratively on research and surveillance where it is efficient and effective to do so (e.g. Chilean needle grass is managed in Canterbury through sustained control programmes, however like Otago, it is not found in Southland). Likewise, with nassella, it is present in Otago but not recorded in Southland.</p> <p>The surveillance programme could also include organisms of interest (OOI) where these require ORC surveillance. There are 37 OOIs listed in Appendix 1 of the RPMP, including 27 plants, 3 animals, 1 algae, 1 freshwater fish and 5 marine organisms.</p>	<ul style="list-style-type: none"> • Undertake research and surveillance, with others, for exclusion pests in Otago, where neighbouring councils manage or exclude the same species. • Undertake risk assessments of other harmful organisms that are not yet present in Otago but may have the potential to cause significant harm if they were established: <ul style="list-style-type: none"> - Collaborate with neighbouring councils where they are also investigating the same species (e.g. marine organisms). - Implement a trial to record OOI information through 'Survey123' – for plants by July 2020 and animals by June 2021.

4.3 Responsive and flexible approaches (effectiveness and efficiency)

Actions / activities	KPIs / comments
<p>Adopt Standard Operating Procedures: Prepare updated operating procedures for administering the RPMP for enforcing plan rules, working proactively with land occupiers, and wisely utilising powers available under the Biosecurity Act.</p>	<ul style="list-style-type: none"> • A standalone SOP document prepared by October 2020. • Utilise Exemption Powers under the Act, where a flexible approach is required, and where occupiers meet criteria set out in section 78 of the Act.
<p>Maintain and expand pest management information on the 'Pest Hub': The website details identification, effects and control methods for pests. Priority species include named RPMP pests, aquatic and marine weeds, and hieracium (in conjunction with DOC and neighbouring councils).</p>	<ul style="list-style-type: none"> • Prepare new guidance material for the Pest Hub which is both practicable and easily followed.

4.4 Integrated and collaborative actions

Actions / activities	KPIs / comments
<p>National biosecurity leadership, coordination and strategy; ORC participates in a variety of national biosecurity management groups, including the BioManagers Group (BM – a collective of regional council biosecurity managers), the Biosecurity Working Group (BSWG – regional council biosecurity technical managers and policy developers).</p> <p>Other national meetings are also be attended such as the National Pest Plant Accord https://www.mpi.govt.nz/protection-and-response/long-term-pest-management/national-pest-plant-accord/ and National Pest Pet Biosecurity Accord https://www.mpi.govt.nz/protection-and-response/finding-and-reporting-pests-and-diseases/keeping-watch/stopping-pets-becoming-pests/.</p> <p>Meetings allow ORC to remain up-to-date with national trends and developments in pest management and policy.</p>	<ul style="list-style-type: none"> • Designated senior managers regularly attend and contribute to at least quarterly national meetings of the BM and BSWG. • Above attendees continue to advocate for a business case through MPI for national funding of wallaby management (see also section 3.2.1) • NPPA meetings attended as required (generally when the NPPA list is reviewed or changes mooted). All plants on the Accord list are unwanted organisms under the Biosecurity Act 1993. This means they cannot be distributed or sold in New Zealand. Note: the NPPA is used as an enforcement tool alongside other RPMPs. • ORC inspects 20 nurseries in the region annually to ensure compliance with the NPPA. Staff also respond to any MPI requests to investigate issues.
<p>Biosecurity response training under the National Biosecurity Capability Network (NBCN): All regional councils are part of the NBCN which responds to national biosecurity emergencies such as recent <i>M. bovis</i> and velvetleaf incursions, and possible threats such as the brown marmorated stinkbug (BMSB). Councils have a separate agreement with MPI on how the collective councils will respond, including being adequately trained and prepared.</p>	<ul style="list-style-type: none"> • Biosecurity staff attend MPI / regional council training on implementation of National Biosecurity Capability Network (every 2-3 years). • Staff maintain liaison with MPI regarding national issues affecting Otago, e.g. <i>Mycoplasma bovis</i> and Velvet leaf, and coordination of any responses and monitoring requirements.
<p>Empower Otago’s people and communities to control harmful organisms: A key role for ORC is to showcase and celebrate significant case</p>	<ul style="list-style-type: none"> • Support the enviro schools programme with key messages, information and tools relating to biosecurity issues in Otago.

studies and achievements where communities and groups have provided improved biodiversity, amenity, cultural and social outcomes

- Promote the newly developed ECO Fund to individuals, groups and non-governmental organisations involved in voluntary initiatives.

4.5 Landscape-scale and site scale initiatives

Actions / activities	KPIs / comments
<p>Predator Free 2050: ORC wants to make a meaningful contribution to the national Predator Free 2050 vision to reduce the effects of introduced predators of native fauna. Meaningful contribution requires projects of significant scale in areas of very high biodiversity importance. Our approach is demonstrated by providing leadership of the site-led programmes outlined in section 3.5.</p> <p>Other parties include Predator Free Dunedin 2050, Landscape Connections Trust, Otago Peninsula Biodiversity Trust.</p>	<ul style="list-style-type: none"> • Contribute to the development of the Predator Free Dunedin 2050 'whole of site' management plan/s by December 2020. • Within 6 months of establishing the above plans, develop a plan of action for ORC's role in the delivery of the plan outcomes (e.g. service delivery, monitoring, research). • Develop guidance on how ORC can support groups with smaller site-led initiatives to manage harmful organisms by June 2021.
<p>Participate in Check, Clean and Dry (CCD) campaigns: CCD is a joint ORC / MPI National Aquatic Pests Programme. Advocates provide education to boat owners and other recreational users of the lakes and rivers around good aquatic biosecurity hygiene practice and preventing the unknowing transfer of aquatic pest species from waterbody to waterbody.</p> <p>MPI has developed a new structure made up of many government agencies and representatives from West Coast, Ecan, ORC and ES. The new structure refreshes the program, determining how it will be implemented over the next 10 years.</p>	<ul style="list-style-type: none"> • Support the South Island Co-ordinator and the formation of a new group in the lower South Island. Report annually as appropriate to MPI. • Achieve 650 interactions during 2020/21. Programme targets lagarosiphon, didymo and lake snow in the main water bodies upstream of Roxburgh. Attend major aquatic events, such as Wanaka and Motatapu challenges.

5. Glossary

Adjacent: means a property that is next to, or adjoining, another property.

Artificial watercourse: means a watercourse that is created by human action. It includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal channel. It does not include artificial swales, kerb and channelling or other watercourses designed to convey stormwater.

Authorised person: has the same meaning as in the Biosecurity Act 1993: “a person for the time being appointed an authorised person under section 103 of this Act.”

Bed: means:

- a. in relation to any river, the space of land which the waters of the river cover at its fullest flow without overtopping its banks;
- b. in relation to any lake, except a lake controlled by artificial means, the space of land which the waters of the lake cover at its highest level without exceeding its margin;
- c. in relation to any lake controlled by artificial means, the space of land which the waters of the lake cover at its maximum permitted operating level; and
- d. in relation to the sea, the submarine areas covered by the internal waters and the territorial sea.

Biological control: means the introduction and establishment of natural enemies that will prey on or adversely affect a pest or other organisms to be controlled.

Braided river: means any river with multiple, successively divergent and rejoining channels separated by gravel islands.

Destroy: means pull, breakdown, demolish, make useless, kill, cause to cease to exist.

Direction: in relation to Part 6 powers under the Act means a notice issued in accordance with section 122 of the Biosecurity Act 1993 requesting a person or land occupier to carry out certain work or measures.

Eliminate: means the permanent preclusion of the pest plant’s ability to set viable seed.

Forest plantation or plantation forest: means a forest deliberately established for commercial purposes, being at least 1ha of continuous forest cover of forest species that have been planted and has or will be harvested or replanted.

Kāi Tahu: descendants of Tahu, the tribe, who maintain manawhenua within Otago and much of Te Waipounamu, the South Island.

Kāi Tahu ki Otago: the collective term Kāi Tahu ki Otago is used to describe the four Papatipu Rūnaka and associated whānau and rōpū of the Otago region, The four Rūnaka are Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki, Te Rūnanga o Ōtākou, and Hokonui Rūnanga.

Landowner: has the same meaning as occupier in the Biosecurity Act 1993.

Management agency: has the same meaning as in the Biosecurity Act 1993: “means the body specified as the management agency in a pest management plan or a pathway management plan”. For the purposes of the RPMP and Operational Plan, Otago Regional Council is the management agency (MA) for pests to be controlled in the Otago region.

Modified McLean Scale: this scale assesses rabbit population levels – refer to Appendix 2.

Monitoring: in relation to a pest or other organisms to be controlled means to observe and measure the occurrence or non-occurrence of a pest or other organisms to be controlled.

Notice of direction: means the same as actions required and notice issued pursuant to section 122 of the Biosecurity Act 1993.

Non-braided river: means a continually or intermittently flowing body of fresh water that is not a braided river; and includes a stream and modified watercourse; but does not include any artificial watercourse (e.g. irrigation canal, water supply race, canal for the supply of water for electricity generation, and farm drainage canal). Occupier: (see landowner).

Operational plan: means a plan prepared by the MA under Section 100B of the Act.

Pest: has the same meaning as in the Biosecurity Act 1993: “an organism specified as a pest in a pest management plan”.

Pest agent: has the same meaning as in the Biosecurity Act 1993: “in relation to any pest, means any organism capable of: a. helping the pest replicate, spread, or survive; or b. interfering with the management of the pest”.

Public conservation land: means any Crown managed land primarily managed by the Department of Conservation for conservation and biodiversity purposes.

River: means a continually or intermittently flowing body of fresh water; and includes a stream and modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity generation, and farm drainage canal).

Rural zoned land: means land zoned for rural use under any territorial district plan applicable within the Otago Region. This includes rural residential and lifestyle zones but excludes large lot residential.

Surveillance: means survey work undertaken to determine the status of pest species. Can be either ‘active’ (or targeted) surveillance (by specialists) and pre-determined visits looking for a particular pest issue, or ‘passive’ surveillance, which are opportunistic observations made by interested members of the public – noting *“I haven’t seen this plant here before”*.

Water body: means fresh water in a river, lake, stream, pond, wetland, or aquifer, or any part thereof, that is not located within the coastal marine area.

Wilding conifer: wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in Table 3 of the RPMP, established by natural means, unless it is located within a forest plantation, and does not create any greater risk of wilding conifer spread to adjacent or nearby land than the forest plantation that it is a part of. For the purposes of this definition, a forest plantation is an area of 1 hectare or more of predominantly planted trees. This also excludes existing planted conifers of less than 1ha, such as windbreaks and shelterbelts at March 2019.

Zero level/zero density: where the pest is destroyed from an area and is not detectable, but biosecurity managers accept that the pest may continue to appear in the area afterwards due to plant seed sources or animal migration from an unmanaged area.

Appendix 1: Russell Lupin Management Plan Requirements

A **Russell Lupin Management Plan** is a management plan prepared by an occupier and certified by ORC, which:

- Identifies all rivers on a property, including all intermittent rivers of a property where the property occupier may plant Russell lupin up to 10m from the river; and
- Identifies where Russell lupin may be planted on a property; and
- Provides information on how the sowing of Russell lupins on the property will avoid encroaching within the identified 10m setback areas; and
- Provides information on the ongoing farm management practices that will be applied to avoid Russell lupin spreading into the identified 10m setback areas.

The Russell Lupin Management Plan must be submitted to ORC at least 90 working days prior to planting for certification that it contains the matters listed above and does not compromise the achievement of RPMP Objective 6.4.5. When certifying the Russell Lupin Management Plan ORC shall consider:

The extent to which the sowing and farm management practices proposed will avoid the spread of Russell lupins in and along rivers;

- The intermittence of the river (how frequently the river flows);
- The aquatic species that may be present in the river or downstream of the river;
- The bird habitat provided by the river or downstream of the river; and
- Any other environmental values associated with the river or downstream of the river.

The maximum duration of a Russell Lupin Management Plan is 10 years.

A Russell Lupin Management Plan may be reviewed by the ORC at any time for the purposes of ensuring that the achievement of RPMP Objective 6.4.5 is not compromised.

A Russell Lupin Management Plan may also be reviewed by the occupier at any time. Any amendments resulting from the review that are more than minor must be certified by the Council prior to implementation.

Appendix 2: Modified McLean Scale for Rabbits

Rabbit control is required to at or below level 3 on the scale below. This scale assesses rabbit population levels.

1. No sign found. No rabbits seen.
2. Very infrequent sign present. Unlikely to see rabbits.
3. Odd rabbits seen; sign and some buck heaps showing up. Pellet heaps spaced 10 metres or more apart on average.
4. Pockets of rabbits; sign and fresh burrows very noticeable. Pellet heaps spaced between 5 metres and 10 metres apart on average.
5. Infestation spreading out from heavy pockets. Pellet heaps spaced 5 metres or less apart on average.
6. Sign very frequent with pellet heaps often less than 5 metres apart over the whole area. Rabbits may be seen over the whole area.
7. Sign very frequent with 2-3 pellet heaps often less than 5 metres apart over the whole area. Rabbits may be seen in large numbers over the whole area.
8. Sign very frequent with 3 or more pellet heaps often less than 5 metres apart over the whole area. Rabbits likely to be seen in large numbers over the whole area.

Appendix 3: Otago Rabbit Night Count Locations

