



Proposed **Biosecurity Strategy**



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Vision

*Working to protect Southland from
harmful species*



Executive Summary

Harmful species can damage Southland's economy and environment. As a regional council Environment Southland has a lead role in protecting the region from these species. This strategy outlines how Environment Southland will manage biosecurity throughout Southland over the next 10 years. It provides an overview of the key management objectives, how these may be achieved and how Environment Southland will interact with the wider biosecurity framework and our partners.

The strategy covers how Environment Southland will implement biosecurity including the use of non-statutory tools and statutory tools such as the Regional Pest Management Plan (RPMP).

Environment Southland's Biosecurity Strategy has three key objectives:

- to lead regional biosecurity management;
- to connect people to biosecurity solutions; and
- to have appropriate legislation and enforcement in place.

The region's biosecurity requirements are complex and a multifaceted approach is needed. Even though Environment Southland is the lead biosecurity agency for Southland, Environment Southland recognises that it cannot be successful on its own. Effective biosecurity requires collaboration and partnerships as well as individuals to take personal responsibility.

Environment Southland's methods will:

- enable, support, educate and collaborate with our community to achieve the best biosecurity outcomes for the region;
- be achievable, cost effective and based on sound science and/or the best information available;
- ensure that biosecurity is an important tool in the protection of Southland's values;
- actively control key species where regular and targeted control is essential for success; and
- provide regulation and enforcement only when voluntary actions are not adequate.

Working to protect Southland from harmful species

Objectives		
Provide regional leadership	Connect people to biosecurity solutions	Ensure appropriate regulatory tools are in place
Outcomes		
<p>1.1 Management programmes:</p> <ul style="list-style-type: none"> • focus on regional priorities, • are achievable, cost effective and based on sound science, • are coordinated with occupiers, iwi and other agencies to increase efficiency and effectiveness, • are consistent and complementary to those of other government agencies, particularly our neighbours. <p>1.2 New threats are identified quickly and dealt with appropriately.</p> <p>1.3 Our knowledge of and ability to respond to biosecurity threats is strengthened through capacity and capability development.</p> <p>1.4 Our biosecurity management supports Environment Southland's wider objectives such as the Biodiversity Strategy and the People Water and Land programme.</p>	<p>2.1 Our efforts lead to an increased understanding of the biosecurity roles and responsibilities of Southlanders.</p> <p>2.2 Communities are empowered to undertake and engage in biosecurity actions.</p> <p>2.3 Environment Southland is recognised as a reliable and credible source of biosecurity information.</p> <p>2.4 Biosecurity advice and assistance is accessible to those who need it.</p>	<p>3.1 A consistent and effective policy framework is in place.</p> <p>3.2 Regulation is appropriate for the organism's type (pests, unwanted organisms and organisms of interest).</p> <p>3.3 Specified pests are managed in accordance with the stated intermediate outcomes in the Regional Pest Management Plan.</p> <p>3.4 The risk of marine pests entering Fiordland is managed in accordance with the Fiordland Marine Regional Pathway Management Plan.</p> <p>3.5 Biosecurity pathway plans that identify key risk pathways and interventions are investigated and implemented as appropriate.</p>

Methods		
<ul style="list-style-type: none"> • Risk assessment and cost benefit analysis tools are used to determine regional priorities. • Practical and effective pest management work programmes are in place (see operations plan). • Liaise and partner with land occupiers, industry partners, community groups and agencies to coordinate biosecurity solutions. • Respond to arising national and regional biosecurity issues using the tools and networks available. • Carry out monitoring and surveillance to inform future programmes, measure success and identify incursions. • Share knowledge with other agencies and individuals. • Environment Southland leads by example and carries out biosecurity management on its own land. 	<ul style="list-style-type: none"> • Education and advocacy programmes ensure Southland's communities and agencies understand and undertake their roles. • Collect and communicate up to date information on best practice management of harmful species. • Offer support to communities through community grants and by utilising site-led programmes to protect the values of places important to them. • Provide timely assistance and advice. 	<ul style="list-style-type: none"> • There is a clear framework for the regulation of pests, unwanted organisms and organisms of interest. • The Regional Pest Management Plan establishes achievable and fair outcomes for each specified pest programme (exclusion, eradication, progressive containment, sustained control and site-led). • Good neighbour rules allow Environment Southland staff to receive and resolve complaints. • Pest programmes are monitored to determine whether they are achieving their objectives. • Assistance and advice are followed up with enforcement when required. • Exemptions and alternative management solutions are considered with optimum outcomes in mind. • Regulatory tools are employed when required to manage threats and harmful species. • Environment Southland officers are appropriately trained and warranted under the Biosecurity Act. • Environment Southland staff are authorised to carry out surveillance and inspections for the National Pest Plant Accord.

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1. Introduction

The Strategy

This strategy provides an overview of Environment Southland's approach to biosecurity. It covers how Environment Southland manages harmful species known to be in Southland and those that have a high risk of establishing themselves here. This strategy does not consider organisms that are not currently present in New Zealand, as these species are managed at the national border by the Ministry for Primary Industries (MPI).

What is biosecurity?

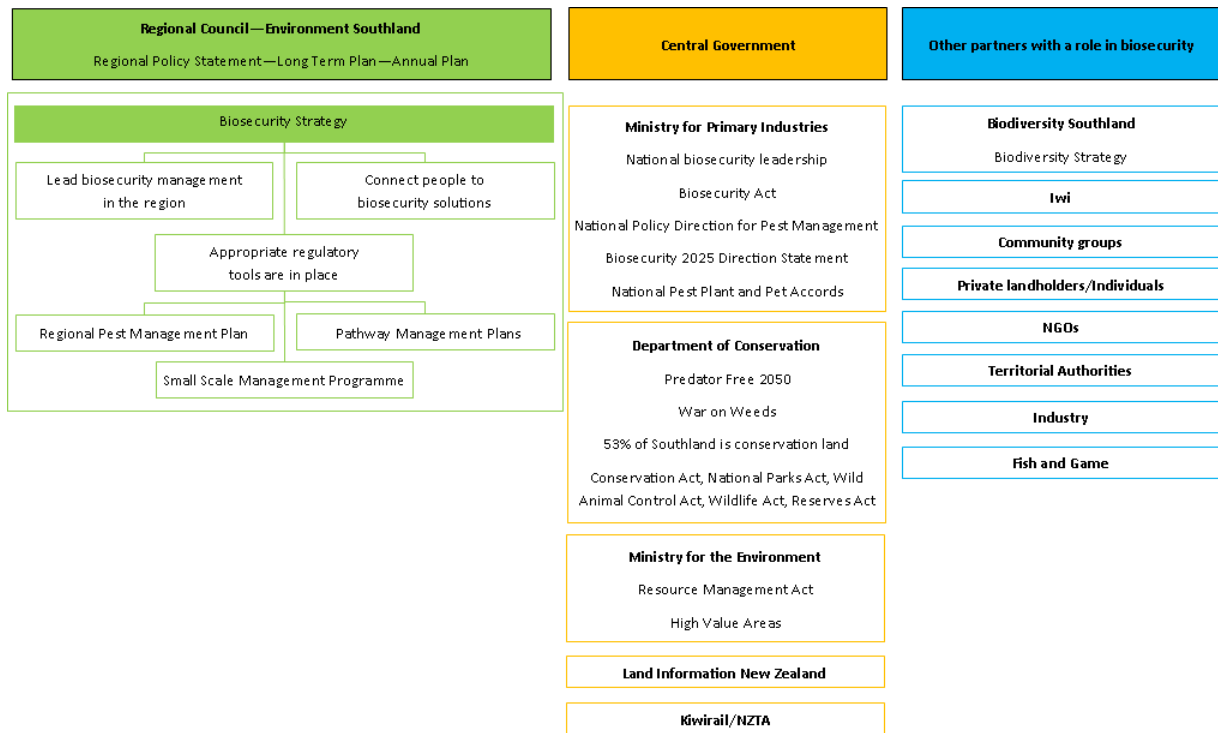
Biosecurity is the process by which the risks posed by harmful species are managed. The biosecurity system is in place to protect us from threats to our economy, environment, health and social and cultural values.

Biosecurity in New Zealand is managed by a range of different organisations, communities and individuals. National responses are led by the Ministry of Primary Industries (MPI), government departments such as the Department of Conservation (DOC) and Land and Information New Zealand (LINZ). These agencies are responsible for biosecurity on Crown land whereas communities and individuals are responsible for local issues and protecting places they value.

Who	Where	What
<i>MPI, global community</i>	<i>Global</i>	Managing risk offshore, developing international standards and rules, trade and bilateral agreements, monitoring emerging risks, setting import health standards.
<i>MPI</i>	<i>National</i>	Intercepting biosecurity risks at the border, verifying compliance with the rules. National readiness, surveillance, response and management.
<i>Regional councils</i>	<i>Regional</i>	Eradication, containment and control of harmful species and diseases within and between regions.
<i>Regional councils, territorial authorities, communities</i>	<i>Local</i>	Protecting the places that we value.

Biosecurity roles in New Zealand (MPI - Biosecurity 2025: Protecting to Grow New Zealand)

The role of regional councils, such as Environment Southland, is to lead regional programmes to eradicate, contain and control harmful species. Regional councils have powers and responsibilities under the Biosecurity Act 1993 (the Act) and this involves the management of legacy pests (pests that were previously managed by the Agricultural Pest Destruction Council, rabbit boards and the Noxious Plant Act 1978) such as rabbits, gorse and broom, as well as other pests (rooks, Old man's beard and *Undaria*) that have arrived more recently. Each region has the authority to develop and implement a regional pest management plan (previously called a strategy).



Biosecurity in New Zealand: A complex space where everybody has a role.

Why is biosecurity important?

Biosecurity is important because it protects Southland's values such as economy, environment and people from the negative impacts of harmful species. The adverse effects of harmful species impact all natural systems, 'ki uta ki tai' from the mountains to the sea.

The widespread nature of harmful species means it is important for the biosecurity strategy to encompass all aspects of Southland including terrestrial, freshwater and marine environments, urban and rural areas, production land and reserves. Environment Southland's biosecurity protocols, rules and management tools are intended to protect the region's values from, and reduce the severity of, the adverse effects of harmful species.

It is also important to note that the risks posed by harmful species are many and not always predictable.

Māori and cultural values

The loss of biodiversity in Aotearoa, New Zealand has been devastating to Māori. The ability to retain cultural practices including kaitiakitanga (guardianship) and mahinga kai (customary gathering practices) are vital to tino rangatiratanga.

Tiakina ngā manu, kā ora tē ngahere
Look after the birds and the forest flourishes

Kā ora tē ngahere, kā ora ngā manu
If the forest flourishes, the birds flourish

To Ngāi Tahu ki Murihiku, biosecurity is an essential measure to slow down biodiversity loss in Murihiku, including taonga (treasured) and other indigenous species impacted by harmful species.

Case Study: Biosecurity can help protect Māori values

Totara is a highly prized forest tree due to the qualities of the timber. Māori use the timber for carving, and the bark for thatching and lining pōhā. Totara is highly palatable to possums, which devastate the trees. Most of the giant totara within the small pockets of forest left in Murihiku are standing dead. Ongoing control of possums is vital for protecting our heritage.

Economic wellbeing

Harmful species can have significant economic impacts by weakening earning potential and introducing new costs, through:

- reducing the health and productivity of commercial animals, plants and land;
- transmitting disease;
- limiting New Zealand's access to export markets;
- damaging infrastructure;
- degrading wilderness areas so they are less attractive to tourists; and
- requiring costly control programmes.

Case Study: Biosecurity can help protect our coastal and marine economy

The Australian droplet tunicate forms large colonies or groups that attach to hard surfaces and cause fouling on cultured oyster racks. It is not currently present in Southland and keeping it excluded from the region is a priority.

The environment

Harmful species can endanger indigenous biodiversity and upset delicate ecosystems by:

- competing for resources;
- predating on native flora and fauna;
- causing outbreaks of disease; and
- clogging waterways or causing land erosion.

These impacts can result in reduced native species numbers, a decline in the quality and quantity of their habitats, and may ultimately result in extinctions.

Case Study: Biosecurity can help to protect wetlands

Purple loosestrife is an aggressive invader of freshwater systems like wetlands. It forms dense stands that can out-compete native vegetation and destroy habitats and food sources. Its rapid growth can also block water flow and increase flood risk, placing homes and businesses in danger. Distribution of the plant within Southland is currently low and a programme to eradicate it is in place.

Human health

Harmful species can cause harm to humans, act as a vector for disease and infest homes. Harmful species can also be a general nuisance causing distress.

Enjoyment of the natural environment

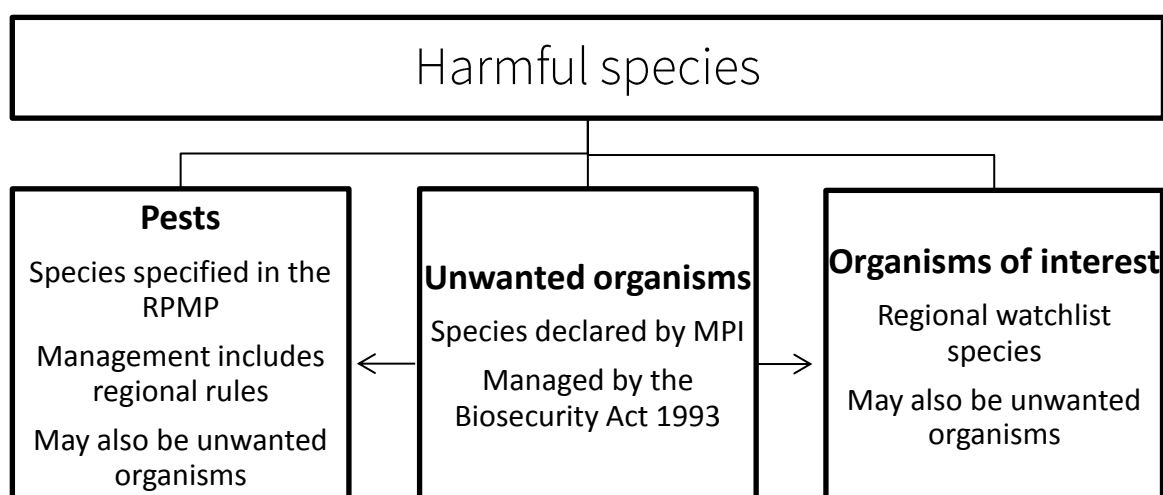
Harmful species can reduce the community's enjoyment of natural areas. They can change things we value by:

- stopping us from moving freely around the country (travel restrictions);
- destroying wilderness areas;
- reducing biodiversity;
- spoiling our waterways; and
- reducing animal, plant and fishing stocks.

What are harmful species?

A harmful species is a generic term used throughout this strategy to cover the full range of species that are capable of causing harm to Southland's values.

Environment Southland differentiates harmful species into three categories - pests, unwanted organisms and organisms of interest. Each category is treated in a different way based on its regional impact, legal status and the required response. As 'unwanted organism' is a nationally applied term, some species may fall into more than one category (see Section 4 Outcomes and Methods for more details).



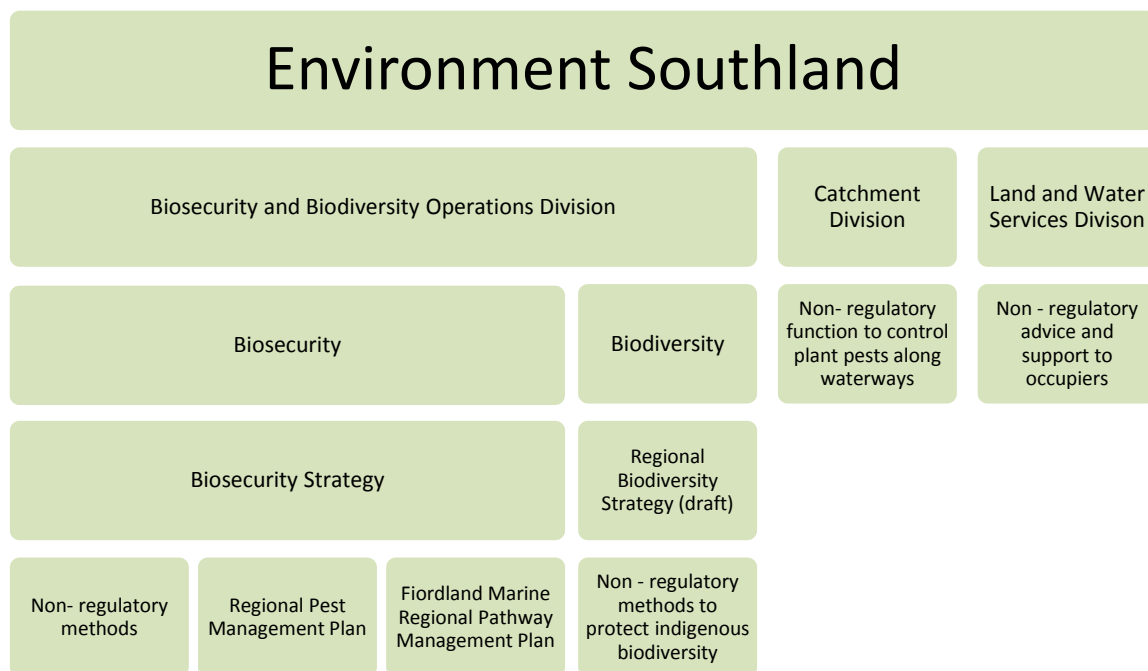
How harmful species are categorised in Southland

2. Biosecurity at Environment Southland

Biosecurity in Southland is managed within Southland's regional boundaries and across all natural systems, including land, water, air and coast. The biosecurity team has the primary responsibility for managing the adverse effects of harmful species. A summary of the proposed operational plan to fulfil this strategy can be found in Appendix 1. However, other Environment Southland divisions such as Catchment and Land and Water Services also have an important role to play.

Environment Southland has two plans that provide the regulatory framework in Southland - the Regional Pest Management Plan and the Fiordland Marine Regional Pathway Management Plan. In general, regulatory methods are only used when non-regulatory methods are unsuccessful, impractical or inefficient.

Because of the rapidly changing nature and size of biosecurity risks, Environment Southland has developed the capability to work collaboratively with other agencies and stakeholders to respond effectively to new and existing threats as and when they occur. Environment Southland plays an important role in national programmes such as the wilding conifer programme and is a member of the National Biosecurity Capability Network that supports MPI to respond to incursions of new harmful species, e.g. didymo and velvetleaf.



Protecting the region through biosecurity and biodiversity management

3. Objectives

Environment Southland's aim is to provide the most effective, sustainable and cost efficient pest management services it can to ratepayers. To do this Environment Southland has three high level objectives. Section 4 - Outcomes and Methods details how Environment Southland will approach each of this strategy's objectives. Additionally, an operational plan, reviewed annually, gives on-the-ground effect to both this strategy and the RPMP by providing information on specific actions.

Objective	Explanation
1: Provide Regional leadership	<p>Environment Southland embraces its role as a regional leader and will work collaboratively with stakeholders to achieve optimal biosecurity outcomes.</p> <p>Environment Southland will promote alignment in the management of harmful species. Environment Southland will work with stakeholders and collaborate with other national, regional and local partners to facilitate the best possible biosecurity solutions for Southland.</p>
2: Connect people to biosecurity solutions	<p>The ways in which it is possible to manage harmful species is broader than the tools provided for under the Act. Non-statutory interventions are a critical piece in effective biosecurity management.</p> <p>It is essential that land occupiers and communities are aware of biosecurity risks, and have access to the knowledge and materials that allow them to respond appropriately. This will generate the best outcomes for the range of values that are at risk.</p>
3: Ensure appropriate regulatory tools are in place	<p>Regulation enables the use of enforceable rules and restrictions to manage harmful species. Environment Southland has access to a broad range of regulatory tools under the Act.</p> <p>Environment Southland is committed to ensuring that the regulatory mechanisms in place are fit for purpose, can achieve their stated objectives and take into account the broad range of interests involved.</p>

4. Outcomes and Methods

Objective 1 – Provide regional leadership

Outcomes	
1.1	Management programmes: <ul style="list-style-type: none">(a) focus on regional priorities;(b) are achievable, cost effective and based on sound science;(c) are coordinated with occupiers, iwi and other agencies to increase efficiency and effectiveness;(d) are consistent and complementary to those of other government agencies, particularly our neighbours.
1.2	New threats are identified quickly and dealt with appropriately.
1.3	Our knowledge of and ability to respond to biosecurity threats is strengthened through capacity and capability development.
1.4	Our biosecurity management supports Environment Southland's wider objectives such as the Biodiversity Strategy and the People Water and Land programme.
Methods	
	<ul style="list-style-type: none">• Risk assessment and cost benefit analysis tools are used to determine regional priorities.
	<ul style="list-style-type: none">• Practical and effective pest management work programmes are in place (see operations plan).
	<ul style="list-style-type: none">• Liaison and partner with occupiers, industry partners, community groups and agencies to coordinate biosecurity solutions.
	<ul style="list-style-type: none">• Respond to arising national and regional biosecurity issues using the tools and networks available.
	<ul style="list-style-type: none">• Carry out monitoring and surveillance to inform future programmes, measures success and identify incursions.
	<ul style="list-style-type: none">• Share knowledge with other agencies and individuals.
	<ul style="list-style-type: none">• Environment Southland leads by example and carries out biosecurity management on its own land.

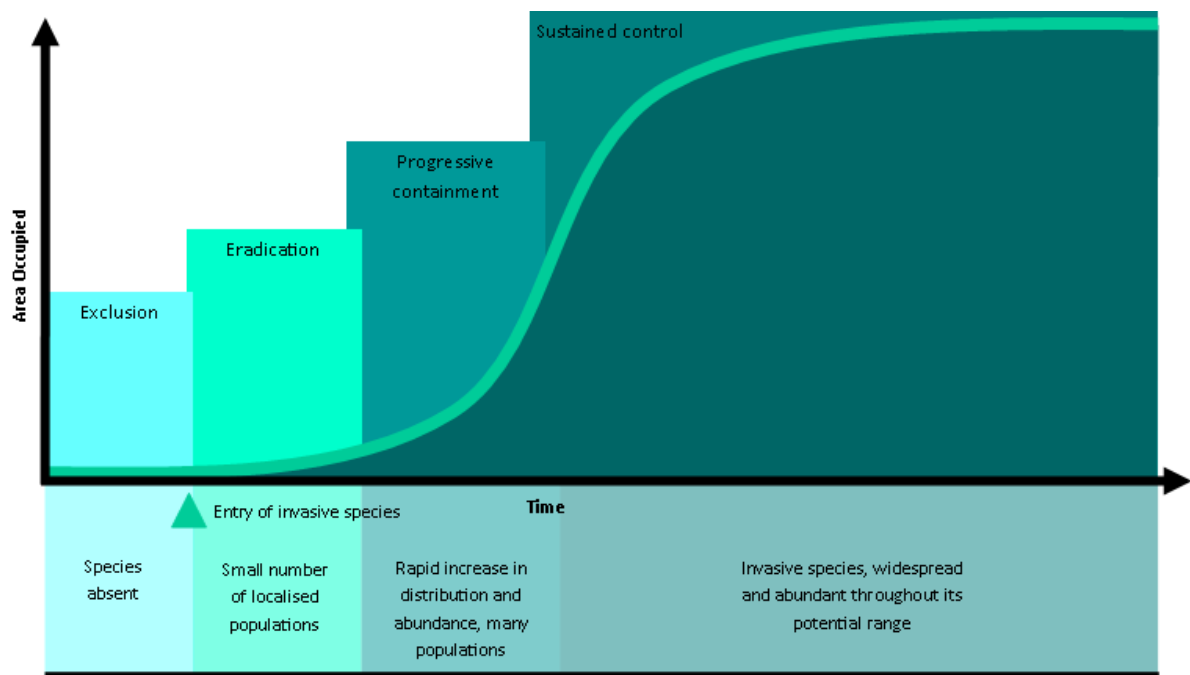
1.1(a) Focus on regional priorities

Not all harmful species are equal in their impact and distribution and it is important to focus on regional priorities. Environment Southland prioritises a biosecurity management based infestation stage and a costs benefit analysis approach. Priorities also need to take external factors, such as the impacts of climate change, an increasingly connected global community and the availability of resources, into account as these will all play a role in how a species can be regionally managed.

Infestation stage analysis

In general the initial establishment will be slow but as species numbers increase the growth rate becomes very rapid (i.e. exponential) until the environmental carrying capacity is reached and the curve flattens. As a species becomes established and moves along the invasion curve the appropriate management approach changes from eradication to sustained control. From a management perspective the greatest economic return comes from preventing or excluding a harmful species from coming into the region.

Generally speaking, the more widespread and established a harmful species becomes, the harder and more costly it becomes to manage.



The invasion curve

Cost versus benefit analysis

Environment Southland aims to provide cost effective biosecurity management for Southland. To do this, control programmes for harmful species are assessed for cost versus benefit. The analysis looks at:

- the impact to the regional economy and the environment;
- the stage of infestation;
- the regional distribution and potential future distribution;
- the availability, effectiveness and practicality of control methods.

Programmes with positive cost benefit analysis are prioritised.

1.1(b) Achievable and cost effective management based on sound science

Most biosecurity programmes require a long-term investment and control can be expensive. Effective management of the range of harmful species requires a variety of adaptable and situational appropriate tools.

Environment Southland's programmes aim to be effective by utilising best practice methodologies and innovative solutions based on high quality science and monitoring. Its programmes are also designed to empower communities to achieve local outcomes and provide solutions to parties adversely impacted by harmful species.

Active management

Environment Southland may take an active management role when:

- a new harmful species enters or establishes in Southland that does not fall under a Ministry for Primary Industries incursion programme;

- the most cost effective action is exclusion or eradication and this would incur unreasonable costs to the affected parties;
- a cost benefit analysis shows that Environment Southland is the best placed organisation to carry out the work and there is significant regional benefit in doing so;
- there is a threat to significant indigenous biodiversity or values at a place.

How Environment Southland will manage different types of harmful species			
Eradiation species: German Ivy	Sustained control species: gorse and broom	Organism of interest: holly	Organism of interest: mustelids
<ul style="list-style-type: none"> • Control and monitor all known German ivy sites. • Work with DOC to control and monitor known sites on Rakiura/Stewart Island. • Educate and encourage reporting. • Actively survey for new sites. 	<ul style="list-style-type: none"> • Provide advocacy and education on suitable control methods. • Conduct inspections on receipt of complaints. • Require occupiers to comply with RPMP rules. • Release biocontrol agents to minimise impacts. 	<ul style="list-style-type: none"> • Identify and monitor holly infestations in the High Value Area programme and annual weed survey. • Provide support and advice to occupiers and community groups who are tackling holly. • Control holly on Environment Southland owned high value biodiversity land (e.g. lower Matura covenants). • Help fund community projects in high risk Holly environments e.g. border of Rakiura National Park. 	<ul style="list-style-type: none"> • Support community groups and land occupiers who wish to carry out control. • Provide advocacy and advice. • Control mustelids to low levels on Environment Southland owned high value biodiversity land (e.g. lower Matura covenants). • Include in multi-species animal pest programmes.

1.1(c) Programmes are coordinated with occupiers, iwi and other agencies to increase efficiency and effectiveness

A partnered approach to biosecurity management with strong regional leadership will ensure an efficient allocation of resources to target biosecurity risks most effectively. Working with and empowering our neighbours, other agencies and the community will ultimately provide the best outcomes for Southland. Coordinating biosecurity programmes will prevent fragmented responses by connecting available resources.

Environment Southland will continue to establish the mechanisms to allow for information exchange, coordination, and cooperation between all levels of government, the community and the private sector to facilitate a coordinated biosecurity response.

For the majority of harmful species the affected land occupiers are best placed to carry out this control. For these species Environment Southland focuses on supporting affected parties through 'landowner responsibility' programmes. These programmes give the land occupier the primary responsibility for managing the impacts of pests on their land. Environment Southland supports affected owners by providing information, advice and in some cases control tools.

Where individual land occupiers are unable to get relief because a harmful species is affecting multiple properties, and neighbours are either unwilling or unable to carry out effective control on their land, then Environment Southland can help land occupiers to develop a coordinated approach.

Case study for Landowner Management Programme – Possum Control Areas

Possums are a concern in many areas of Southland, as they can severely impact on the environment by damaging flora and fauna. They pose an economic impact by reducing agricultural production, competing with livestock for food and acting as a carrier of bovine TB. Possums have been specified as a pest under the Regional Pest Management Plan for Southland.

The Possum Control Areas (PCA) programme was first established in 2009 and has achieved significant progress since then. As part of this programme, Environment Southland supports and assists land occupiers with possum control by establishing possum control areas. Environment Southland implements the initial possum control (including bait stations) to reduce the possum levels to a low level that occupiers effectively manage and maintain. Environment Southland advises occupiers about what possum control options best suit their individual property. Environment Southland continues to liaise with occupiers to ensure future possum control is successfully completed. As at 2018, more than 300,000 hectares are part of the highly successful PCA programme.



1.1(d) Management approaches are consistent and complementary to those of other government agencies, particularly our neighbours

Environment Southland is committed to working with other councils and government agencies to ensure that its approaches to biosecurity management are consistent. For instance Environment Southland's approach to marine biosecurity management for Fiordland is collaborative, drawing on resources, networks and expertise from Environment Southland, MPI, DOC and the Fiordland Marine Guardians to deliver effective and efficient management tools such as the Fiordland Marine Regional Pathway Management Plan.

A consistent approach will increase programme effectiveness through collective management of risk, as well as making it simpler for people in the community to understand their obligations as they move between regions. While consistency where possible is important, not every region faces the same biosecurity risks and there will be some differences in our approaches. The availability of resources to implement a work programme and the level of community interest in a specific species may also impact how Environment Southland approaches biosecurity management.

1.2 New threats are identified quickly and dealt with appropriately

Not all biosecurity threats can be foreseen. It is possible that during the life of this strategy, new and emerging biosecurity risks will require regional intervention. Depending on the nature and scale of the risk, an approach coordinated by central government is possible. Where risks to regional values are posed by harmful species already present in New Zealand, there are a range of tools available to regional councils responding to emerging threats including:

- working with land occupiers and communities collaboratively;
- amending the Regional Pest Management Plan to include new species or rules best suited to managing the impacts of that species;
- implementing small-scale management programmes;
- monitor organisms of interest and adapt management as appropriate.

Environment Southland is committed to continuously evaluating risk to pre-empt and avoid threats wherever possible. This approach is bolstered by its commitment to growing its knowledge and science base to inform its actions.

Case Study: Velvetleaf (Responding to new threats)

Velvetleaf is an aggressive weed, which damages crops by competing with them for nutrients and water. It also has the potential to destroy future crops if it is established. By May 2016, nearly 200 velvetleaf plants were identified in fodder beet crops in the Southland region. MPI declared a national response as contaminated fodder beet seeds had been sown in 11 regions throughout the country.

MPI coordinated this national biosecurity response with support from regional councils, AsureQuality and affected industries. In Southland, under MPI's lead Environment Southland commenced its response in March 2016. As required by MPI, staff from Environment Southland and territorial authorities within the region undertook field inspections and oversaw the removal of velvetleaf plants. In 2017, Environment Southland and MPI worked collaboratively to develop farm management plans for contaminated properties. Environment Southland engaged with the occupiers of those properties and developed 395 velvetleaf farm management plans customised to their individual properties. The recent investigations of high risk properties and reports of suspected plants found no velvetleaf plants. However, velvetleaf is listed as an organism of interest under the Regional Pest Management Plan and Environment Southland will continue to investigate reports of velvetleaf in Southland.



1.3 Our knowledge of and ability to respond to biosecurity threats is strengthened through capacity and capability development

Science, research and our ability to implement that information are critical to achieving effective biosecurity management. Solutions for how Environment Southland monitors, detects, eradicates and controls harmful species should be informed by evidence and best practice. This strategy recognises that the capacity to manage biosecurity risks in Southland depends upon the information that underpins Environment Southland's decision making and work programme.

Environment Southland collaborates with research organisations, universities and the community to increase its knowledge base and address any knowledge gaps relevant to managing biosecurity risks in Southland. Environment Southland also ensures its staff, contractors and partners are appropriately skilled and capable of undertaking their work.

1.4 Our biosecurity management supports Environment Southland's objectives such as the Biodiversity Strategy, catchment management and the People Water and Land programme

Biosecurity does not stand alone and it is important to ensure that biosecurity programmes fit in with other priorities. The biosecurity team engages with many other parts of Environment Southland to provide advice and support.

Case Study: Predator Free Landscapes (Supporting other Environment Southland priorities: biodiversity)

Native species and ecosystems are at risk from a range of introduced species – especially predators such as possums, rats and stoats. Protection of indigenous biodiversity is a key focus for Environment Southland. Environment Southland considers that landscape scale control increases effectiveness and efficiency of biosecurity management. As part of the national Predator Free 2050 movement, Environment Southland is collaborating with the following communities and agencies for improving the region's biosecurity.

- Predator Free Rakiura;
- Predator Free Waituna;
- Bluff Hill/Motupōhue Environment Trust (BHMET);
- Otatara Pest Busters;
- Otatara Landcare Group;
- Aparima Pest Busters;
- Omaui landcare group;
- Rakiura/Stewart Island Community & Environment Trust (SIRCET);
- Hollyford Conservation Trust.

Objective 2 - Connect people to biosecurity solutions

Outcomes	
2.1	Our efforts lead to an increased understanding of the biosecurity roles and responsibilities of Southlanders.
2.2	Communities are empowered to undertake and engage in biosecurity actions.
2.3	Environment Southland is recognised as a reliable and credible source of biosecurity information.
2.4	Biosecurity advice and assistance is accessible to those who need it.
Methods	
	<ul style="list-style-type: none">• Education and advocacy programmes ensure Southland's communities and agencies understand and undertake their roles.
	<ul style="list-style-type: none">• Collect and communicate up-to-date information on best practice management of harmful species.
	<ul style="list-style-type: none">• Offer support to communities through community grants and by utilising site-led programmes to protect the values of places important to them.
	<ul style="list-style-type: none">• Provide timely assistance and advice.

2.1 Our efforts lead to an increased understanding of biosecurity roles and responsibilities for all Southlanders

By being proactive about and promoting biosecurity within the region, Environment Southland aims to engage all Southlanders and visitors in the biosecurity process. A community that understands its roles and responsibilities can be proactive in managing biosecurity risk and is aware of matters that may require reporting and action. Community engagement and leadership provide the platform by which Environment Southland can educate and empower everybody within the region to be a part of managing biosecurity risk.

A key method for managing biosecurity risks is through enforceable regulatory tools such as bans and restrictions. All stakeholders have an obligation to manage biosecurity risks. For stakeholders to take an active role in reducing the impacts of biosecurity risks it is important for them to understand how they can be involved and which regulatory tools are relevant to them. Biosecurity regulation needs to be supported by education and information such as through guidelines, fact sheets and clear and concise policy instruments. This will provide more effective biosecurity management by making the best use of available resources and people. Ongoing education through our presence in the community, online and through advertising will continue to support the regulatory component of biosecurity management.

2.2 Communities are empowered to undertake and engage in biosecurity actions

In order to minimise biosecurity risk in the region the awareness and active participation of the community is essential. This participation takes several forms, from individual awareness to the hard work contributed by non-governmental organisations (NGOs). Environment Southland understands that community engagement in the biosecurity process is vital to success. Environment Southland facilitates targeted education and information sharing programmes through various forums including online and onsite. Environment Southland regularly engages with the community to grow understanding of healthy natural ecosystems and the potential impacts of biosecurity risks.

Members of the community have a vital role to play, from seeing and reporting biosecurity threats to Environment Southland to understanding what may or may not be appropriate garden plants or domestic pets. This involvement is encouraged and supported through education, advocacy and engagement.

The ongoing management of harmful species also benefits from NGOs and community interest groups that have significant expertise in community engagement and greatly assist in hands-on biosecurity activities such as weed removal, habitat regeneration and native rehabilitation projects. Environment Southland will continue to engage with and support these initiatives to result in longer-term and self-sustaining programmes. Where possible Environment Southland will bolster locally led biosecurity programmes with the support they need.

Site-led programmes under the Regional Pest Management Plan have also been designed with community and environmental values in mind. Environment Southland aims to continue supporting community initiatives with a biosecurity focus through the continued use of site-led programmes, including supporting community initiatives through the creation of new site-led programmes where appropriate.

Guidance for amending or creating new site-led programmes

- The site has significant value at a community, district, regional or national scale. For example:
 - significant indigenous vegetation;
 - significant habitats of indigenous fauna;
 - outstanding natural character, features and landscapes.
- There is strong volunteer and/or community support for the programme, including from land occupiers who are willing to provide access to private property.
- The programme will result in environmental, social and/or cultural benefits.
- The programme meets the requirements of the Biosecurity Act 1993 and the National Policy Direction for Pest Management 2015.
- There is an agreement with Environment Southland about:
 - how the site will be managed;
 - how the programme delivered; and
 - the nature and level of support from needed from Environment Southland.
- The programme is resourced for its duration.

2.3 Environment Southland is recognised as a reliable and credible source of biosecurity information

Through the success of its programmes and the quality of information provided to those who require it, Environment Southland aims to increase its profile in the biosecurity space and be recognised not only for the work done, but the advice and assistance provided.

Growing its profile will ensure Environment Southland can continue to meet its other objectives of providing consistency, value for money, connecting resources and information, and engaging with its stakeholders and the community.

Environment Southland staff will be well trained and stay current with best practice methods and technological updates.

2.4 Biosecurity advice and assistance is accessible to those who need it

As part of growing its knowledge base and connecting the communities to solutions, Environment Southland maintains a commitment to provide advice and assistance to the community on biosecurity related matters. Staff are available to answer and respond to queries about specific harmful species, biodiversity, biosecurity and compliance. A full suite of material including fact sheets, best practice guidelines and links to resources is also available online. Keeping this information up-to-date and easily locatable is an ongoing commitment to provide high quality information to the people of Southland.

Objective 3 – Ensure appropriate regulatory tools are in place

Outcomes	
3.1	A consistent and effective policy framework is in place.
3.2	Regulation is appropriate for the organism type (pests, unwanted organisms and organisms of interest).
3.3	Specified pests are managed in accordance with the stated intermediate outcomes in the Regional Pest Management Plan.
3.4	The risk of marine pests entering Fiordland is managed in accordance with the Fiordland Marine Regional Pathway Management Plan.
3.5	Biosecurity pathway plans that identify key risk pathways and interventions are investigated and implemented as appropriate.
Methods	
•	There is a clear framework for the regulation of pests, unwanted organisms and organisms of interest.
•	The Regional Pest Management Plan establishes achievable and fair outcomes for each specified pest programme (exclusion, eradication, progressive containment, sustained control and site-led).
•	Good neighbour rules allow staff to receive and resolve complaints.
•	Pest programmes are monitored to determine whether they are achieving their objectives.
•	Assistance and advice are followed up with enforcement when required.
•	Exemptions and alternative management solutions are considered with optimum outcomes in mind.
•	Regulatory tools are employed when required to manage threats and harmful species.
•	Environment Southland officers are appropriately trained and warranted under the Biosecurity Act.
•	Environment Southland staff are authorised to carry out surveillance and inspections for the National Pest Plant Accord.

3.1 A consistent and effective policy framework is in place

The policy framework that supports Environment Southland's biosecurity objectives underpins much of the other work described in this strategy. The framework is a mechanism to ensure a level playing field that appropriately distributes biosecurity responsibilities and costs. Policy should be robust without becoming over prescriptive. It should clearly define roles and responsibilities and be prepared in accordance with legislation, in particular the Act and the National Policy Direction for Pest Management 2015.

In Southland the primary policy tools that support the biosecurity objectives are:

- the Regional Pest Management Plan, which declares pests in the region and provides for appropriate management through establishing regional outcomes and rules; and
- the Fiordland Marine Regional Pathway Management Plan which is designed to protect the sensitive marine environment of Fiordland by ensuring no harmful species are spread by vessels or equipment entering the area.

Other tools are available to respond to emerging issues, such as the ability to declare a Small-Scale Management Programme (a regional council may declare a Small-Scale Management Programme in the region if a pest could be eradicated or controlled effectively with small-scale measures within three years of the measures starting) and the suite of powers in Part 6 of the Act.

These policy tools, as well as powers conferred by other legislation, provide Environment Southland with the framework, powers and enforcement capability it needs to assist in the management of harmful species.

Resource Management Act 1991	Sets high level goals for resource management/biodiversity.
Conservation Act 1987	Among other things, allows for land to be managed for conservation purposes.
Wild Animal Control Act 1977	Provides powers for the control and eradication of wild animals.
Wildlife Act 1953	Provides for the protection of wildlife.
Local Government Act 2002	Provides numerous powers to regional and local governments and sets the parameters for government decision making.
Freshwater Fish Regulations 1983	Provides a framework for managing noxious fish.
National Animal Identification and Tracing Act 2012	Establishes an animal identification and tracing system for cattle and deer.
Hazardous Substances and New Organisms Act 1996	Manages the effects of hazardous substances and new organisms.
Health Act 1956	Provides powers to deal with infectious and notifiable diseases.

3.2 Regulation of pests, unwanted organisms and organisms of interest

Pests

Environment Southland exclusively uses the term 'pests' to describe species that are legally specified (named) as pests in its Regional Pest Management Plan. These species are different to other harmful species because the Act allows for the use of enforceable rules to manage pests at a regional scale.

The species specified as pests under the Plan are those that:

- are already present in New Zealand;
- are capable of causing 'adverse effects ... on economic wellbeing, the environment, human health, enjoyment of the natural environment, and the relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu, and taonga'; and
- require regional management through the use of enforceable rules for effective management.

The RPMP has designated 44 plants, 21 animals and 7 marine species as pests. These pests are further categorised as Exclusion, Eradication, Progressive Containment, Sustained Control or Site-Led pests. For information on which species are pests in Southland, and the rules and restrictions in place that relate to each pest, refer to the RPMP. A list of pests is available in Appendix 2 of this strategy.

Unwanted organisms

The term 'unwanted organism' is taken from the Act. Only a chief technical officer at MPI can declare a species to be an unwanted organism and MPI maintain the national list of these species <https://www1.maf.govt.nz/uor/searchframe.htm>.

Unwanted organisms are subject to national statutory controls which mean that they cannot be sold, propagated, bred, multiplied, communicated, released, caused to be released or otherwise spread, however, MPI has the ability to provide permits and exemptions.

Environment Southland has authority to deal with many unwanted organisms using the Act and these national rules are generally sufficient to protect Southland's values from negative impacts. Unwanted organisms are therefore not specified as pests unless additional regional rules are required to prevent regional harm.

Some unwanted organisms are also found on the National Pest Plant Accord list which means they cannot be distributed or sold within New Zealand.

Organisms of interest

There are numerous organisms existing in Southland which present, or in future may present, a biosecurity risk but do not currently meet the criteria to be designated as pests under the RPMP. These species have been classified as 'organisms of interest' (Appendix 3).

To prevent harm to Southland from these organisms additional research, management or other actions may be required. An organism of interest may still be targeted by Environment Southland's biosecurity operations and monitoring. For example, feral deer can cause harm to crops and native ecosystems but they are not a pest in Southland's RPMP because the Department of Conservation manages the distribution and density of feral deer under the Wild Animal Control Act 1977. However, they remain a regional organism of interest and Environment Southland will continue to provide advice and assistance to land occupiers to manage negative deer impacts.

The distribution, impact and ability to control organisms of interest will continue to be monitored by Environment Southland. If the threat, impact, distribution or other factors posed by an organism of interest changes to such a degree that it requires targeted regional action, Environment Southland may consider designating the organism as a pest. This would require a change to the RPMP.

Case study: Pest vs unwanted organism vs organism of interest			
Harmful Species			
Species Name	Ragwort	Old man's beard	Feral deer
Species status in Southland	Pest	Unwanted organism & pest.	Organism of interest.
Background information	Invasive herb with yellow daisy-like flowers. It can be spread by wind and rapidly colonise on ground.	Highly invasive deciduous woody wine.	Ruminant animals that selectively feed on plant communities.
Overall Impact	High impact especially to the dairy industry due to toxicity and reduced pasture production.	High environmental impact as it can kill mature trees and prevent natural regeneration of native plants.	Medium to high impacts including economic damage to crops, disease vectors and damage to native species and ecosystems.
Benefits to region	None	None	Highly valued as a recreational resource.
Species is subject to other management under other regulatory regime	No	Yes: Declared as unwanted organism by MPI (the Act prevents the sale and distribution).	Yes: Wild Animal Control Act 1977 and Game Animal Council Act 2013.
Is an additional regulatory tool needed/effective?	Yes: Voluntary action is unlikely to protect pastoral production from adverse impacts of ragwort. If an occupier complains to Environment Southland about presence of ragwort on a neighbouring property, that occupier is unlikely to take voluntary action to destroy ragwort.	Yes: Voluntary action is unlikely to occur to protect native forests, forest remnants, rivers and forestry plantations on private or Crown land from adverse impacts of old man's beard.	No: Species regulation is adequately covered by other legislation.
Effective control methods are available	Yes: Ragwort can be effectively controlled using herbicide and mechanical methods.	Yes: Old man's beard can be effectively controlled using herbicide.	No: Current costs high and may only have effect in small-scale areas (site-led).
Conclusion	Species is a pest. <ul style="list-style-type: none"> Good neighbour rule – 20 metre boundary rule to manage spread 	Species is a pest and an unwanted organism. <ul style="list-style-type: none"> Environment Southland 	Species is an organism of interest. There is a known negative impact but no effective control and

Case study: Pest vs unwanted organism vs organism of interest			
Harmful Species			
Species Name	Ragwort	Old man's beard	Feral deer
	between properties. • Not allow sale, propagation and transportation within the region to mitigate human spread. Land occupiers must destroy all ragwort before seeding.	progressive containment programme • Community awareness workshops on risks of OMB • Control work on active and recently inactive sites Continued monitoring and active reporting.	DOC has the statutory mandates and powers to manage deer populations. Environment Southland has an advocacy and education role in managing deer impacts.

3.3 Specified pests are managed in accordance with the stated intermediate outcomes in the Regional Pest Management Plan

Part 5 of the Act supports the eradication or effective management of harmful species in New Zealand by providing for the development of national or regional pest and pathway management plans, and small-scale management programmes. Part 5 also provides for the appropriate distribution of costs associated with these plans and programmes. The national and regional plan processes provide for consultation with communities on the control of established pests that are of concern to them.

These plans and programmes must meet the purpose of Part 5 of the Act, which is to provide for the eradication or effective management of harmful species that are present in New Zealand by providing for:

- (a) the development of effective and efficient instruments and measures that prevent, reduce, or eliminate the adverse effects of harmful species on economic wellbeing, the environment, human health, enjoyment of the natural environment, and the relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu, and taonga; and
- (b) the appropriate distribution of costs associated with the instruments and measures.

Each specified pest in the Regional Pest Management Plan is managed according to an intermediate outcome as required by the Act. A successful regulatory programme should see each of the intermediate outcomes for specified pests achieved over the life of the plan. As an example, the success of the plan will be measured on its ability to keep exclusion pests, such as wallabies and Chilean needle grass, out of Southland.

3.4 Marine pest pathways are managed in accordance with the Fiordland Marine Regional Pathway Management Plan

The impact of marine pests, such as the highly invasive Undaria or Mediterranean fanworm, establishing can be significant, jeopardising both the economic and ecological wellbeing of Fiordland. The Fiordland Marine Regional Pathway Management Plan is the first of its kind in New Zealand and is a huge step towards protecting and securing the future of this precious area. The purpose of the plan is to reduce the risk of marine pests establishing in Fiordland by addressing the threat of these species being transported within one nautical mile of the landward boundary of the Fiordland Marine Area.

Visitors to Fiordland are required to hold a Fiordland Clean Vessel Pass and be aware of the risks and the ways in which marine pests can spread. Obtaining a Clean Vessel Pass has been designed to be a simple process. Hull inspections at Bluff and a compliance and enforcement programme are in place to provide corrective action for non-compliant vessels and equipment.

3.5 Biosecurity pathway plans that identify key risk pathways and interventions are investigated and implemented as appropriate

It is important to consider the use of all the tools available in the Act to ensure that appropriate regulations effectively manage the impacts of harmful species in Southland. There are opportunities to investigate and implement pathway plans for areas in the region where the prevention or management of the spread of harmful organisms is required.

Environment Southland will continue to investigate harmful species pathways and the implementation of new pathway plans or biosecurity protocols.

Appendix 1: Proposed Biosecurity Operations Plan

Environment Southland will implement the Biosecurity Strategy using a range of methods and tools. In general, its methods will:

- enable, support, educate and collaborate with our community to achieve the best biosecurity outcomes for the region;
- be achievable, cost effective and based on sound science and/or the best information available;
- ensure that biosecurity is an important tool in the protection of Southland's values;
- actively control key species where regular and targeted control is essential for success; and
- provide regulation and enforcement only when voluntary actions are not adequate.

Exclusion pests	Comments
Prevent the establishment of exclusion species in the region	
<p>Primary methods</p> <p>Advocacy and education: Exclusion programmes will focus on education and advocacy using media releases, flyers, digital tools and liaison with stakeholders. Clean Vessel Passes will be a key promotional tool for marine exclusion pests. Environment Southland will work closely with its neighbouring regional councils, MPI and DOC, particularly on publicity programmes.</p> <p>Surveillance, detection and monitoring: Early detection of incursions is a key part of our response. Environment Southland will respond to all sightings, carry out annual inspections of high risk sites and develop risk pathways plans for exclusion pests.</p>	This is an existing programme with minor modifications to reflect the proposed changes to the species list.
<p>Secondary methods</p> <p>Incursion response: Any incursions of exclusion species will be controlled quickly and effectively. Environment Southland will work closely with its neighbouring regional councils on terrestrial control programmes and support MPI and DOC to carry out marine compliance checks and control programmes.</p> <p>Enforcement: Environment Southland will have trained and warranted staff, to deal with deliberate releases and incursions.</p>	

Eradication pests	Comments
Reduction to zero levels is achieved within 10 years	
<p>Primary methods</p> <p>Control: Effective control is key to Environment Southland's eradication programmes. Environment Southland will focus control on all active sites and respond to new signings. DOC is the lead agency for Boxthorn and Spartina. Environment Southland will support DOC with these programmes.</p> <p>Environment Southland or other organisations will undertake control work unless a land occupier agrees in writing with Environment Southland to carry out the control work themselves.</p>	This is an existing programme with minor modifications to reflect the proposed changes to the species list and

Eradication pests Reduction to zero levels is achieved within 10 years	Comments
<p>Surveillance, detection and monitoring: Early detection of new sites and monitoring the success of Environment Southland's control efforts is a key part of its response. Environment Southland will carry out annual inspections of high risk sites and respond to all reports.</p>	the addition of the Rakiura/Stewart Island Site-Led Programme.
<p>Secondary methods</p> <p>Advocacy and education: Eradication programmes will include promotion to encourage the public to report new sites.</p>	

Progressive containment pests (including wilding conifers and marine) Contain and reduce the geographic distribution or extent of pests throughout the region	Comments
<p>Primary methods</p> <p>Control: Effective control is a priority for progressive containment programmes. Environment Southland will control, or help its partners to control, sites outside of the containment area. Environment Southland's partners include: Mid Dome Wilding Trees Charitable Trust, National Wilding Conifer Programme, National Aquatic Weeds Partnership, Manapouri Community Development Association, Southland District Council, Department of Conservation.</p> <p>Surveillance, detection and monitoring: Monitoring the success of our control efforts and identifying new infestations outside of the containment area will be needed. Environment Southland will carry out hull inspections for marine pests, targeted aerial and ground surveys for terrestrial pests and regularly check regional pet sales (online and retail) for Bengal cats.</p>	This is an existing programme with modifications to reflect the proposed changes to the species list and the addition of the Rakiura/Stewart Island Site-Led Programme.
<p>Secondary methods</p> <p>Advocacy and education: Progressive programmes will include education and advocacy using media releases, flyers, digital tools and liaison with stakeholders and marine pest identification training workshops.</p> <p>Environment Southland will provide technical advice and support to groups working on progressive containment species e.g. Mid Dome Wilding Trees Charitable Trust.</p> <p>Enforcement: Environment Southland will have trained and warranted staff, to deal with breaches of the RPMP rules.</p>	

Sustained control pests	Comments
<p>Primary methods</p> <p>Advocacy and education: Sustained control programmes will rely on occupier responsibility. To support land occupiers Environment Southland will provide education and advocacy, support research and development into new control methods.</p> <p>Control: Enabling occupiers to work in a coordinated manner will be a focus of the sustained control programmes. Environment Southland will also actively carry out control on its land and support community groups with control.</p>	<p>This is an existing programme with modifications to reflect the proposed changes to the species list and the addition of the</p>
<p>Secondary methods</p> <p>Surveillance, detection and monitoring: Environment Southland will only carry out inspections in response to complaints and at medium – high risk sites.</p> <p>Enforcement: Environment Southland will have trained and warranted staff and occupiers may be directed to carry out works.</p>	<p>Rakiura/Stewart Island Site-Led Programme.</p> <p>The number of inspections will be reduced from the current inspection programmes to responding to written complaints from adjoining affected occupiers.</p>

Organisms of interest (OOI)	Comments
<ul style="list-style-type: none"> • Monitor the distribution and impact of organisms of interest • Actively manage risks at high risk and priority sites • To prevent harm to Southland from these organisms additional research, management or other actions may be required. <p>Primary methods</p> <p>Advocacy and education: Organisms of interest programmes will rely on education and advocacy using media releases, flyers, digital tools and liaison with stakeholders. Environment Southland will provide technical advice and support to land occupiers and community groups dealing with organisms of interest. We will actively engage with and support Weedbusters, the Check Clean Dry Programme and Aquatic Pest Plant Technical Working Group.</p> <p>Support research and development into new control methods.</p> <p>Surveillance, detection and monitoring: Environment Southland will use weed surveys and High Value Area Ecological surveys to identify infestations.</p>	<p>This is an existing programme with modifications to reflect the proposed changes to the species list and the addition of the</p> <p>Rakiura/Stewart Island Site-Led Programme.</p>

Organisms of interest (OOI) <ul style="list-style-type: none"> • Monitor the distribution and impact of organisms of interest • Actively manage risks at high risk and priority sites • To prevent harm to Southland from these organisms additional research, management or other actions may be required. 	Comments
Environment Southland will support community group control programmes through pest monitoring.	
Secondary methods Control: Environment Southland will actively carry out control on Environment Southland land and support community groups at priority sites.	

Site-led programmes: Rakiura/Stewart Island and Omaui	Comments
Primary methods Prevention of range extension through a risk-pathways approach to island border control that includes working with and supporting our partners. Control of established species that can be eradicated or contained on Rakiura/Stewart Island Environment Southland will work with DOC and Rakiura/Stewart Island Community and Environment Trust (SIRCET) on programmes to eradicate or contain all known sites. Control of established species that are impacting on the values of Omaui Environment Southland will support the community control efforts by providing technical advice, control support and by monitoring control success. Containment of cats Advocacy and education will be the main tool that is used. During the first year we will also subsidise cat microchipping programmes for Omaui and Rakiura/Stewart Island.	This is a new programme to implement the new site-led work.

Other programmes:

- Member of the biosecurity capability network to support MPI with National Incursions as required.
- Accredited to National Pest Plant Accord to carry out annual nursery inspections.
- Biocontrol programmes.
- Member of Rabbit Coordination Group.

Appendix 2: Pests

Pests specified in the Regional Pest Management Plan are managed by an objectives-based approach that is best suited to managing their adverse effects or impacts.

Outcomes	Description
Exclusion	To prevent the establishment of the subject that is present in New Zealand but not yet established in an area.
Eradication	To reduce the infestation level of the subject to zero levels in an area in the short to medium term (generally within the life of the plan).
Progressive containment	To contain or reduce the geographic distribution of the subject to an area over time.
Sustained Control	To provide for ongoing control of the subject to reduce its impacts and its spread to other properties (generally appropriate for widespread species).
Protecting values in places (site-led)	That 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.

Pest Animals

Rook (<i>Corvus frugilegus</i>)	Exclusion
Wallaby - Bennett's, dama, parma, brushtailed rock and swamp (<i>Macropus rufogriseus rufogriseus</i> , <i>M. eugenii</i> , <i>M. parma</i> , <i>Petrogale penicillata</i> , <i>Wallabia bicolor</i>)	Exclusion
Bengal cat (<i>Felis catus</i> var. <i>Bengal</i>)	Progressive containment
Possum (<i>Trichosurus vulpecula</i>)	Sustained control
Rabbit (<i>Oryctolagus cuniculus</i>)	Sustained control
Feral cat (<i>Felis catus</i>)	Site-led - Omaui; and Site-led - Rakiura/Stewart Island
Feral goat (<i>Capra hircus</i>)	Site-led - Rakiura/Stewart Island
Feral pig (<i>Sus scrofa</i>)	Site-led - Rakiura/Stewart Island
Hedgehog (<i>Erinaceus europaeus</i>)	Site-led - Rakiura/Stewart Island
House mouse (<i>Mus musculus</i>)	Site-led - Rakiura/Stewart Island
Mustelids - ferret, stoat and weasel (<i>Mustela furo</i> , <i>M. erminea</i> , <i>M. nivalis</i>)	Site-led - Rakiura/Stewart Island
Rat - Norway, ship and kiore (<i>Rattus norvegicus</i> , <i>R. rattus</i> , <i>R. exulans</i>)	Site-led - Rakiura/Stewart Island

Pest Plants

Boneseed (<i>Chrysanthemoides monilifera</i>)	Exclusion
Chilean needle grass (<i>Nassella neesiana</i>)	Exclusion
Nassella tussock (<i>Nassella trichotoma</i>)	Exclusion
Boxthorn (<i>Lycium ferocissimum</i>)	Eradication
Field horsetail (<i>Equisetum arvense</i>)	Eradication
German Ivy (<i>Senecio mikanioides</i>)	Eradication
Parrots feather (<i>Myriophyllum aquaticum</i>)	Eradication

Purple loosestrife (<i>Lythrium salicaria</i>)	Eradication
Smilax (<i>Asparagus asparagoides</i>)	Eradication
Spartina (<i>Spartina anglica</i>)	Eradication
Bomarea (<i>Bomarea multiflora</i>)	Progressive containment
Buddleja (<i>Buddleja davidii</i>)	Progressive containment
Contorta pine and mountain pine (<i>Pinus contorta</i> , <i>Pinus mugo</i>)	Progressive containment
Cotoneaster (<i>Cotoneaster franchettii</i> , <i>C. glaucophyllus</i> , <i>C. simonsii</i>)	Progressive containment
Darwin's barberry (<i>Berberis darwinii</i>)*	Progressive containment
Giant buttercup (<i>Ranunculus acris</i>)	Progressive containment
Heather (<i>Calluna vulgaris</i>)*	Progressive containment
Japanese honeysuckle (<i>Lonicera japonica</i>)	Progressive containment
Lagarosiphon (<i>Lagarosiphon major</i>)	Progressive containment
Old man's beard (<i>Clematis vitalba</i>)	Progressive containment
Reed sweet grass (<i>Glyceria maxima</i>)	Progressive containment
Rough horsetail (<i>Equisetum hyemale</i>)	Progressive containment
Siberian lyme grass (<i>Leymus racemosus</i>)	Progressive containment
Wilding conifers Douglas fir (<i>Pseudotsuga menziesii</i>) Scots pine (<i>Pinus sylvestris</i>) Bishops pine (<i>Pinus muricata</i>) Maritime pine (<i>Pinus pinaster</i>) Ponderosa pine (<i>Pinus ponderosa</i>) Corsican pine (<i>Pinus nigra</i>) European larch (<i>Larix decidua</i>) Radiata pine (<i>Pinus radiata</i>)	Progressive containment
Broom (<i>Cytisus scoparius</i>)	Sustained control
Gorse (<i>Ulex europeaus</i>)	Sustained control
Nodding thistle (<i>Carduus nutans</i>)	Sustained control
Ragwort (<i>Jacobaea vulgaris</i>)	Sustained control
African club moss (<i>Selaginella kraussiana</i>)	Site-led - Rakiura/Stewart Island
Gunnera (<i>Gunnera tinctoria</i>)	Site-led - Rakiura/Stewart Island
Hawthorn (<i>Crataegus monogyna</i>)	Site-led - Rakiura/Stewart Island
Heather (<i>Calluna vulgaris</i>)*	Site-led - Rakiura/Stewart Island
Indian knotweed (<i>Polygonum polystachyum</i>)	Site-led - Rakiura/Stewart Island
Spanish heath (<i>Erica lusitanica</i>)	Site-led - Rakiura/Stewart Island
Willow - crack and grey (<i>Salix fragilis</i> , <i>Salix cinerea</i>)	Site-led - Rakiura/Stewart Island

* Denotes a species which has a region wide programme and a different programme at a specific site

Marine Pests

Asian paddle crab (<i>Charybdis japonica</i>)	Exclusion
Mediterranean fanworm (<i>Sabella spallanzanii</i>)	Exclusion
Sea squirts – (<i>Styela clava</i> , <i>Eudistoma elongatum</i> , <i>Pyura doppelgangera</i> and <i>Didemnum vexillum</i>)	Exclusion
Undaria (<i>Undaria pinnatifida</i>)	Progressive containment

Appendix 3: Organisms of Interest

Animals	Plants		Marine	Other
Ants (Argentine, Darwin's) <i>Linepithema</i> <i>humile</i> & <i>Doleromyrma</i> <i>darwiniana</i>	African feather grass <i>Cenchrus macrourus</i>	Hornwort <i>Ceratophyllum</i> <i>demersum</i>	Asian date mussel <i>Arcuatula</i> <i>senhousia</i>	Potato wart <i>Synchytrium</i> <i>endobioticu</i> <i>m</i>
Canada goose <i>Branta</i> <i>canadensis</i>	Aluminium plant <i>Lamium</i> <i>galeobdolon</i> <i>Amelanchier spp</i>	Ice plant <i>Carpobrotus</i> <i>edulis</i>	Asian semele <i>Theora</i> <i>lubrica</i>	Myrtle rust <i>Uredo</i> <i>rangelii</i>
Cattle tick <i>Haemaphysalis</i> <i>longicornis</i>	Angelica <i>Angelica</i> <i>pachycarpa</i>	Japanese knotweed <i>Fallopia japonica</i>	Spaghetti bryozoan <i>Amanthia</i> <i>verticillata</i>	Lake snow <i>Lindavia</i> <i>intermedia</i>
Chamois <i>Rupicapra</i> <i>rupicapra</i>	Banana passionfruit <i>Passiflora spp</i>	Mayten tree <i>Maytenus</i> <i>boaria</i>		
Chinchilla <i>Chinchilla spp</i>	Bittersweet <i>Solanum</i> <i>dulcamara</i>	Montbretia <i>Crocasmia x</i> <i>crocosmiiflora</i>		
Feral deer inc. Hybrids, (Wapiti <i>Cervus</i> <i>elaphus</i> <i>nelsoni</i> ,, Red <i>Cervus</i> <i>elaphus</i> , Fallow <i>Dama</i> <i>dama</i> , Whitetail <i>Odocoileus</i> <i>virginianus</i> , Sika <i>Cervus</i> <i>nippon</i> , Samba <i>Cervus</i> <i>unicolor</i> , Rusa <i>Cervus</i> <i>timorensis</i>)	Blackberry <i>Rubus</i> <i>fruticosus</i> agg. <i>R.</i> <i>laciniatus</i>	Montpellier broom <i>Genista monspessulana</i>		
	Californian thistle <i>Cirsium arvense</i>	Pampas grass (white) <i>Cortaderia selloana</i>		
	Cape honey flower <i>Melianthus major</i>	Purple pampas <i>Cortaderia jubata</i>		
	Cherry laurel <i>Prunus</i> <i>laurocerasus</i>	Periwinkle <i>Vinca major</i> Common reed <i>Phragmites australis</i>		
	Chilean fire bush <i>Embothrium coccineum</i>	Rowan <i>Sorbus</i> <i>aucuparia</i>		
	Chilean guava <i>Ugni</i> <i>molinae</i>	Russell lupin <i>Lupinus</i> <i>polyphyllus</i>		
	Collomia <i>Collomia</i> <i>cavanillesii</i>	Scotch thistle <i>Cirsium</i> <i>vulgare</i>		
	Common barberry <i>Berberis glaucocarpa</i>	Silver birch <i>Betula</i> <i>pendula</i>		
	Common (English) ivy <i>Hedera helix</i>	Stonecrop <i>Sedum acre</i>		
Fish (Rudd <i>Scardinius</i> <i>erythrophthal</i> <i>mus</i> , Tench <i>Tinca tinca</i> ,	Egeria <i>Egeria densa</i>	Sweet briar <i>Rosa</i> <i>rubiginosa</i>		
	English spindleberry	Sycamore <i>Acer</i>		

Animals	Plants		Marine	Other
Orfe <i>Leuciscus idus</i> , Koi carp <i>Cyprinus carpio</i> , Catfish <i>Ictalurus nebulosus</i> , Gambusia <i>Gambusia affinis</i>)	<i>Euonymus europaeus</i> Giant hogweed <i>Heracleum mantegazzianum</i> Green daphne <i>Daphne laureola</i> Hawkweeds <i>Hieracium spp.</i> and <i>Pilosella spp.</i> Hemlock <i>Conium maculatum</i> Himalayan honeysuckle <i>Leycesteria formosa</i> Holly <i>Ilex aquifolium</i>	<i>pseudoplatanus</i> <i>Tradescantia fluminensis</i> Tree lupin <i>Lupinus arboreus</i> Tutsan <i>Hypericum androsaemum</i> Velvetleaf <i>Abutilon theophrasti</i>		
Himalayan Tahr <i>Hemitragus jemlahicus</i>				
Magpie <i>Gymnorhina tibicen</i>				
German, Common Wasps <i>Vespula spp</i>				
Mustelids (Ferret <i>Mustela furo</i> , Stoat <i>Mustela erminea</i> , Weasel <i>Mustela nivalis</i>)				
Hedgehogs <i>Erinacaous europaeus</i>				

