Southland Regional Pest Management Plan

2019–2029

environment SOUTHLAND
REGIONAL COUNCIL
Te Taiao Tonga

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This Southland Regional Pest Management Plan (SRPMP) 2019-2029 was adopted by Council on 22 May 2019 and made operative on 14 August 2019. Since that time minor errors have been identified that needed to be corrected. Council approved the minor changes being made to the SRPMP 2019-2020 at its meeting on 11 June 2020.

Biosecurity Act 1993

Certificate of Southland Regional Pest Management Plan Adoption

It is hereby certified that this is the Southland Regional Pest Management Plan.

Consent to the adoption of the Southland Regional Pest Management Plan was given by the Southland Regional Council on 22 May 2019.

DATED this ...14..... **day of** .....August..... **2019**

The Common Seal of the }
Southland Regional Council }
was affixed in the presence of: }

Chief Executive

Chairman

The Southland Regional Pest Management Plan shall commence on 14 August 2019

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Part One

Plan Establishment

1 Introduction

1.1 Pest management in Southland

Regional councils have a mandate under Part 2 of the Biosecurity Act 1993 (the Act) to provide regional leadership in activities that prevent, reduce, or eliminate adverse effects from harmful species that are present in their region. Environment Southland holds this role in the Southland region.

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 pests. The Southland Regional Pest Management Plan (SRPMP) is the primary tool in pest management in Southland, and alongside pathway management plans, it establishes the monitoring and regulatory framework for managing pests.

In conjunction with the SRPMP, Environment Southland has also prepared a Biosecurity Strategy which sets out Environment Southland's objectives for biosecurity management in the region using the full range of statutory and non-statutory tools available, including the management of organisms capable of causing adverse or undesirable effects.

1.2 Purpose of the Plan

The purpose of the SRPMP is to provide for the efficient and effective management or eradication of specified organisms in the Southland region. It builds on the previous Strategy and pest management programmes.

The overall purposes of the SRPMP are to:

- minimise the actual or potential adverse or unintended effects associated with those organisms; and
- maximise the effectiveness of individual actions in managing pests through a regionally coordinated approach.

While many organisms in the Southland region are considered undesirable or a nuisance, not all of these organisms are suitable for management in the SRPMP. The SRPMP only addresses organisms for which statutory intervention is required because voluntary action is insufficient. This could be due to either the nature of the pest or the related costs and benefits of individual action or inaction. The Act has prerequisite criteria that must be met to justify such intervention.

Once the SRPMP commences it will empower Environment Southland to exercise the relevant advisory, service delivery, regulatory, monitoring and funding provisions available under the Act to deliver the specific objectives identified in Part Two of this plan.

1.3 Geographic coverage of the Plan

The SRPMP will operate within the administrative boundaries of the Southland region and covers a total area (land and sea) of 5,483,795 hectares (see Figure 1 below). Unless a specific, smaller area is described within the relevant programme, the exclusion, eradication, progressive containment and sustained control programmes outlined in the SRPMP apply to the entire Southland region. The geographic area for the site-led programme on Stewart Island/Rakiura is shown in Appendix 1.

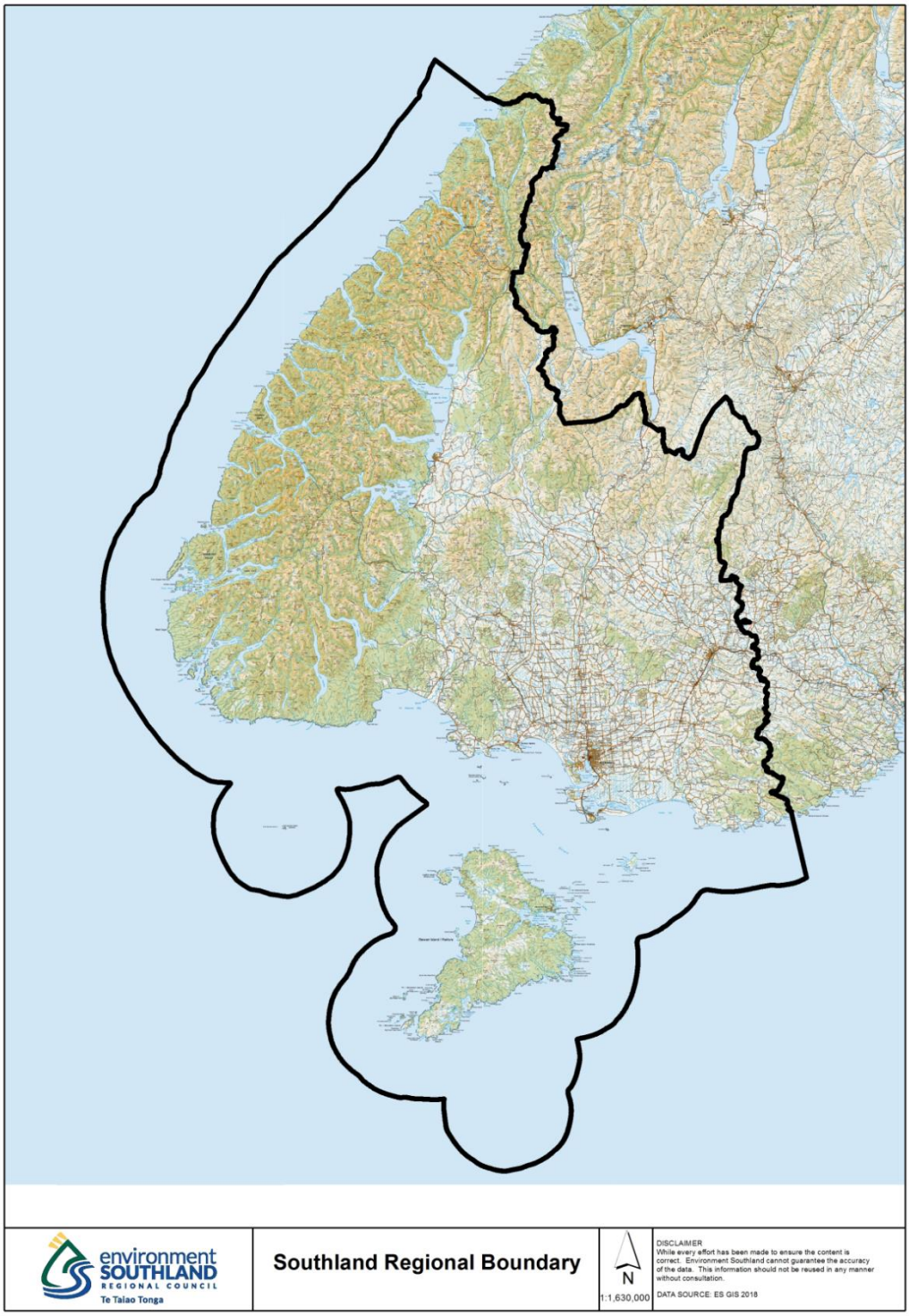


Figure 1: The Southland Region to be covered by the SRPMP

1.4 Duration

The SRPMP will take effect on the date it becomes operative as a regional pest management plan under s77 of the Act. It is proposed to remain in force for a period of 10 years. The SRPMP may cease at an earlier date if Environment Southland declares by public notice that the SRPMP's objectives have been achieved. It may also cease at an earlier date if, following a review, it is revoked.

The SRPMP may be amended during this time to add or remove organisms requiring pest status or to add additional sites to the existing site-led programme using the criteria established in Appendix 2. Amendments may require notification, depending on the scope of the changes proposed and the willingness of impacted parties to be bound by the provisions of the SRPMP.

2 Planning and statutory background

2.1 Strategic background

2.1.1 An integrated biosecurity framework for Southland

Regional pest management sits within a biosecurity framework for the Southland region as shown in Figure 2 below. While the SRPMP will be the primary statutory tool of the framework, it is complemented by supporting actions and influences. Owners and/or occupiers and the wider community, either as beneficiaries or exacerbators or both, interact with a number of supporting strategies, policies and plans.

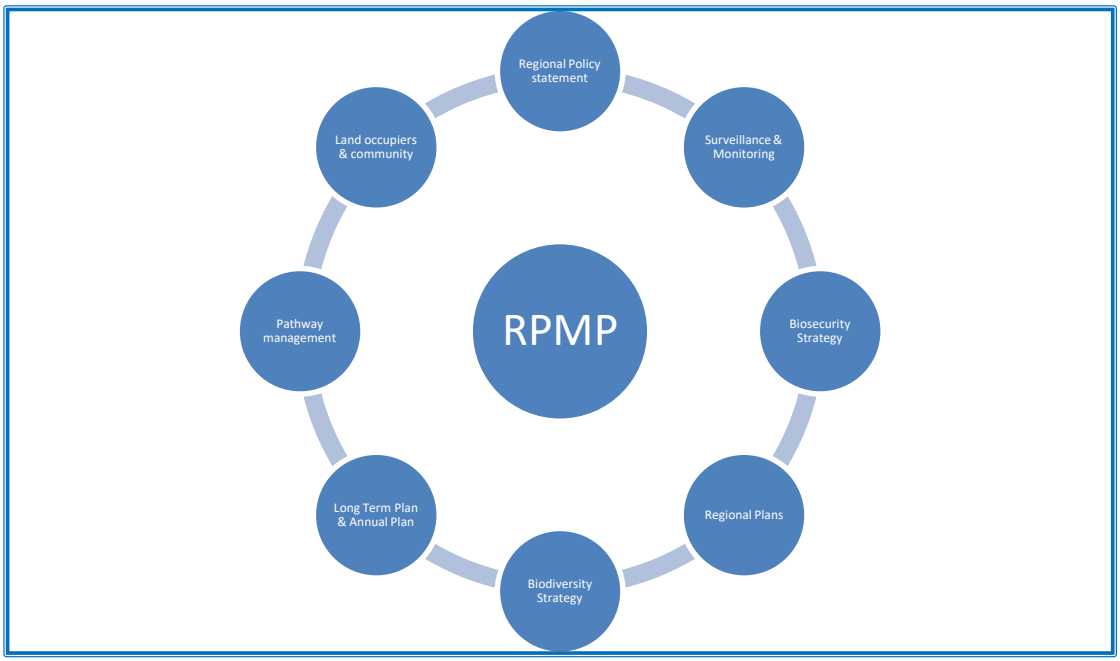


Figure 2: Biosecurity framework for Southland

The Act also requires the preparation of an operational plan, and annual reporting on the operational plan, in accordance with Section 100B. These documents provide technical information for the implementation of programmes, including monitoring and surveillance projects, which will support the outcomes of the SRPMP. Environment Southland will give effect to the Biosecurity Strategy and the SRPMP through an Operational Plan.

The 2012 amendments to the Act provide for regional pathway management plans. These plans focus on managing the movement of, and incursion routes taken, by pests rather than the pests themselves and so provide another tool in the framework. The Fiordland Marine Regional Pathway Management Plan was made operative on 5 April 2017. It is the first of its kind in New Zealand and aims to protect one of New Zealand's most unique and nationally significant areas from marine pests being carried in on local and visiting vessels. The SRPMP was developed and will be implemented by a partnership group including Environment Southland, Fiordland Marine Guardians, Ministry for Primary Industries, Department of Conservation and Ngāi Tahu.

Environment Southland will continue to explore the development of regional pathway management plans and small scale management programmes in the future.

2.1.2 Biosecurity system beyond Southland

An effective biosecurity system is established within the Southland region, between regions and at a national level (refer Figure 3). All regional councils maintain operative regional pest management strategies or plans.

Central government is responsible for preventing pests entering New Zealand, providing leadership and coordinating or implementing incursion management where eradication from New Zealand remains attainable. Rapid response initiatives and national pest management accords, registers and strategies are examples of the instruments they employ. The Ministry for Primary Industries website, at www.mpi.govt.nz, outlines the details of those instruments.

The plans and strategies of territorial authorities may also have a complementary role in biosecurity.

As a result, regional pest management plans are an integral component of a comprehensive biosecurity system that protects New Zealand's economic, environmental, social and cultural values from the threat of pests.

2.1.2.1 Biosecurity 2025

Biosecurity 2025 is a partnership between people, organisations, Māori, and central, local and regional government. Its aim is to make our biosecurity system more resilient and future-focused to protect our taonga and New Zealand from pests and diseases.

The programmes in the SRPMP are in alignment with the Biosecurity 2025 Direction Statement. The strategic directions outlined in that statement emphasising the shared responsibilities for pest management and effective leadership and governance.

The SRPMP demonstrates the ways in which Environment Southland will take regional leadership and combined with the Biosecurity Strategy and Operations Plan articulate the operational and other programmes undertaken by Environment Southland.

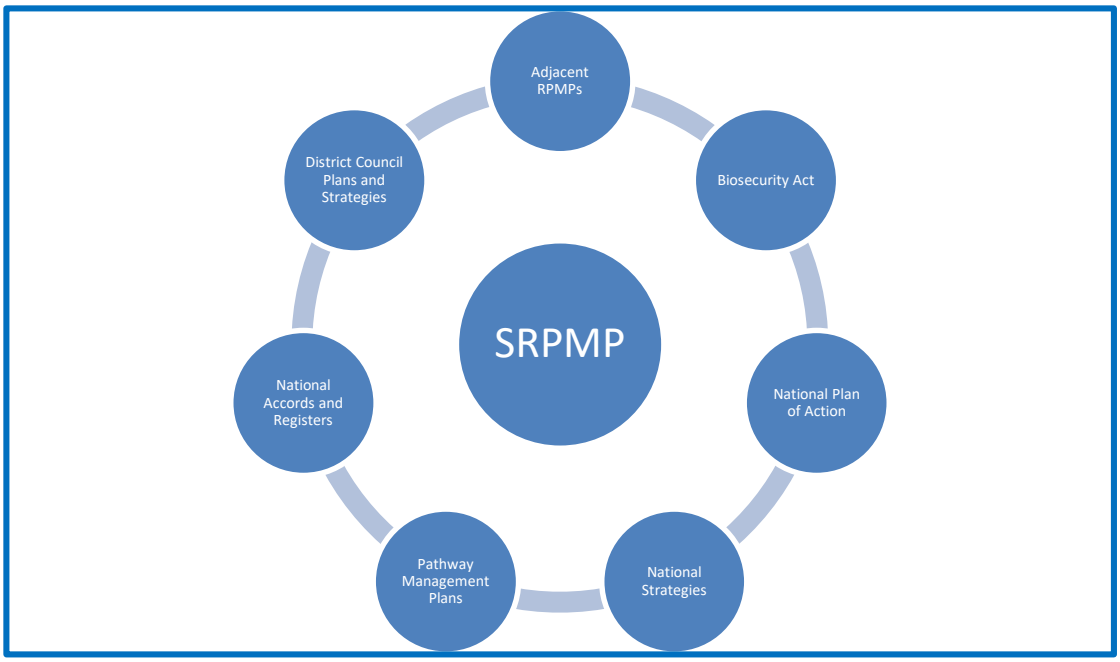


Figure 3: New Zealand's biosecurity system

2.1.2.2 Predator Free 2050

Predator Free 2050 is an ambitious goal to rid New Zealand of the most damaging introduced predators (rats, stoats and possums) that threaten our nation's natural taonga, our economy and primary sector.

Achieving a predator free New Zealand is expected to provide range of environmental, cultural, social and economic benefits that are consistent with the aims of the SRPMP.

Predator Free 2050 brings together central and local government, iwi, philanthropists, non-government organisations, businesses, science and research organisations, communities, landowners and individuals.

Environment Southland supports Predator Free 2050 and will look for partnership opportunities, especially where those assist with pest animal control programmes.

2.2 Legislative background

Regional councils undertake their local government functions under several legislative instruments. Managing pests is not dependent on one particular statute, however the Biosecurity Act 1993 (the Act) is central to regional councils' efficient and effective management or eradication of specified harmful species (refer Figure 4).

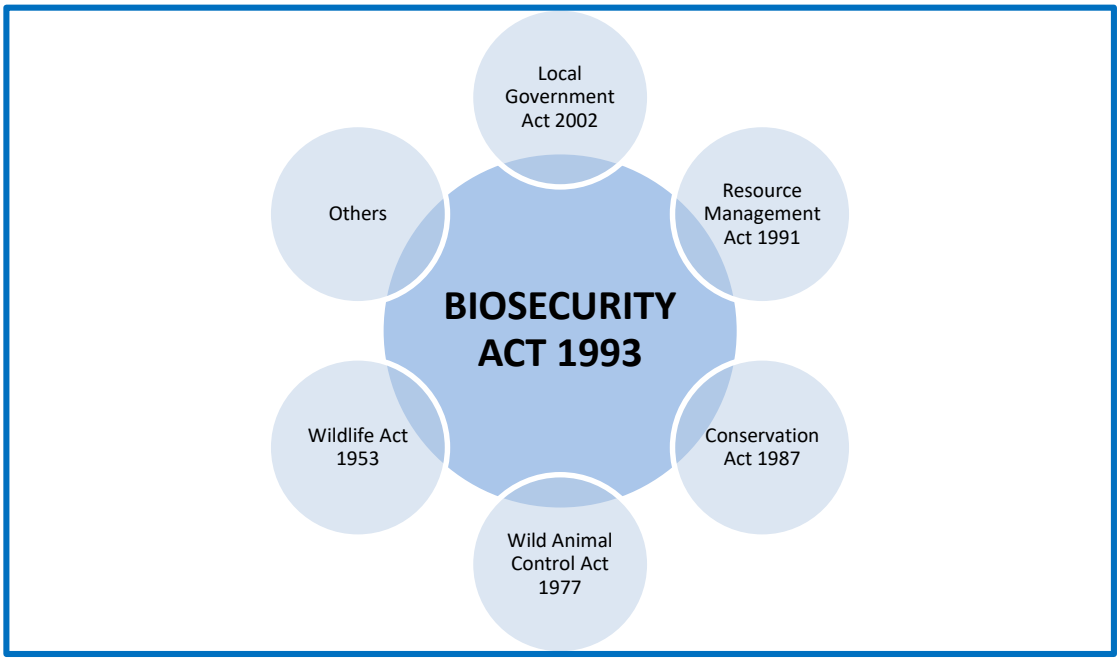


Figure 4: Legislative instruments relevant to biosecurity

2.2.1 Biosecurity Act 1993

The Act is purpose-built for pest management. A regional council can use the Act to exclude, eradicate or effectively manage pests in its region, including unwanted organisms. A regional council is not legally obliged to manage pests, but it may choose to do so. As such, the Act's approach is enabling rather than prescriptive. It provides a framework to gather intervention methods into a coherent system of efficient and effective actions.

A number of amendments to the Act have occurred since 1993. Changes that are of relevance to regional pest management, and particularly those advanced through the Biosecurity Law Reform Act 2012, include:

- the redevelopment of regional pest management strategies to regional pest management plans. Provision has also been made for explicit pathway management plans in addition to specified pest management plans;
- the Crown will be bound to the requirements of the Good Neighbour Rules (GNR) specified in a regional pest management plan. Such rules apply to all owners and/or occupiers within the area over which the rules apply but they can only address pest spread across a property boundary;
- the Act provides for the National Policy Direction for Pest Management 2015 (NPD). Regional pest management plans must not be inconsistent with the NPD. Further details of the NPD are provided under 2.2.2; and
- a mandatory plan review need not occur before 10 years. However, review of a whole plan or part of a plan can take place at any time if necessary.

Three sections of the Act are particularly pertinent to regional councils:

A: Part 2: Functions, powers and duties

Regional councils are mandated under Part 2 (functions, powers and duties) of the Act to provide regional leadership in activities that prevent, reduce, or eliminate adverse effects from harmful species that are present in its region.

Section 12B sets out the ways in which regional councils provide leadership. Some of these activities include promoting the alignment of pest management in the region, helping to develop and align regional pest management plans and regional pathway management plans in the region, promoting public support for managing pests, and helping those involved in managing pests to communicate and cooperate to make programmes more effective, efficient, and equitable.

Section 13(1) sets out powers that support regional councils in this leadership role. These include powers to:

- monitor and survey pests, pest agents, and unwanted organisms;
- provide for the assessment and eradication or management of pests in accordance with relevant pest management plans;
- prepare proposals to "make" and implement regional pest management plans and regional pathway management plans;
- appoint a management agency for a plan;
- disallow an operational plan or part of it;
- review, amend, revoke and replace, or revoke a plan;
- declare and implement small-scale management programmes;
- gather information, keep records and undertake research; and
- take any action contemplated by or necessary for giving effect to any provision of the Act.

B: Part 5: Pest management

Part 5 of the Act specifically covers pest management, including regional pest management. Its purpose is to provide for the eradication or effective management of harmful species. A harmful organism is assigned pest status when it is included in a pest management plan. Sections 69 to 78 of the Act prescribe the process for developing regional pest management plans, involving six steps from initiating a plan (by a proposal), to ensuring affected parties are consulted, and develop efficient regulatory and funding mechanisms.

While a regional council may initiate a regional pest management plan, it is also required to assess and undertake decision-making responsibilities in relation to all proposed pest management plans put forward by any another person or organisation.

C: Part 6: Administering a regional pest management plan

Once a regional pest management plan has commenced, the management agency specified in the plan may exercise the powers in Part 6 of the Act to implement the plan where the plan provides for the agency to exercise the power. These powers

include the necessary regulatory powers, instruments and cost recovery mechanisms needed for administering a plan.

2.2.2 National Policy Direction for Pest Management 2015

The Act provides for the National Policy Direction for Pest Management 2015 (NPD). The purpose of the NPD is to ensure that activities under Part 5 of the Act (Pest Management) provide the best use of available resources for New Zealand's best interests, and align with one another (when necessary) to contribute to the eradication or effective management of harmful species present in New Zealand (the purpose of Part 5). The NPD does this by:

(a) clarifying requirements for Part 5 regulatory instruments; and
(b) ensuring consistent application of these requirements nationally and between regions, as appropriate.

Regional pest management plans must not be inconsistent with the NPD, which requires that:

- objectives must follow a prescribed content;
- management outcomes must align with one of five programmes - exclusion, eradication, progressive containment, sustained control or site-led;
- benefits and costs must be analysed in a prescribed manner and must be documented;
- allocation of costs must be analysed in a prescribed manner; and
- the construction of GNRs must address specified criteria.

Table 1: NPD requirements and the steps taken to comply with them

NPD requirements	Steps taken to comply
Objectives are set	The structure of the objectives used in Section 5 of Part 2 of the SRPMP align with the requirements of clause 4 of the NPD.
The use of programmes	The types of programmes (described in Part 2 of the SRPMP) match those set out in clause 5 of the NPD.
Benefits and costs are assessed	An analysis of the costs and benefits has been undertaken in accordance with clause 6 of the NPD. The full analysis is published in the cost-benefit analysis report that accompanied the initial proposal. It is available on the Environment Southland website.
Funding rationale is noted	The funding rationale described in Section 9 of Part 3 of the SRPMP has been developed in accordance with clause 7 of the NPD.

NPD requirements	Steps taken to comply
GNRs are described	GNRs have been developed in line with clause 8 of the NPD.

2.2.3 Resource Management Act 1991

Regional councils have responsibilities under the Resource Management Act 1991 (RMA) to establish, implement and review objectives, policies and methods to achieve integrated management of the natural and physical resources of the region, including the Coastal Marine Area (CMA). These responsibilities include recognising and providing for the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna (Section 6(c)) and having particular regard to the intrinsic values of ecosystems (Section 7(d)).

The RMA sets out the functions of regional councils in relation to the maintenance and enhancement of ecosystems in water bodies and coastal water (Section 30(1)(c)(iiia)), the control of actual or potential effects of use, development or protection of land in the CMA (Section 30(1)(d)(v)) and the establishment, implementation and review of objectives, policies and methods for maintaining indigenous biological diversity (Section 30(1)(ga)).

The focus of the RMA is on managing adverse effects on the environment through regional policy statements, regional and district plans, and resource consents. The RMA, together with regional policies and plans, can be used to manage activities so that biosecurity risks are considered. While the Act is the main regulatory tool for managing pests, there are complementary powers within the RMA that can be used to ensure the problem is not exacerbated by activities regulated under the RMA.

The Act cannot override any controls imposed under the RMA, for example resource consent requirements.

2.2.4 Local Government Act 2002 and Local Government (Rating) Act 2002

The Local Government Act 2002 (LGA) provides *"a framework and powers for local authorities to decide which activities they undertake and the manner in which they will undertake them".* The Local Government (Rating) Act 2002 is a companion Act, which provides local authorities with flexible powers to set, assess and collect rates to fund local government activities; ensures rates are set in accordance with decisions that are made in a transparent and consultative manner; and enables ratepayers to identify and understand their liability for rates.

Both of these Acts support Environment Southland's biosecurity activities, particularly through Environment Southland's ability to access rates as a funding source and to differentiate rates into both general and targeted categories.

2.2.5 Wild Animal Control Act 1977 the Wildlife Act 1953 and the Freshwater Fisheries Regulations 1983

The Wild Animal Control Act 1977 the Wildlife Act 1953 and the Freshwater Fisheries Regulations 1983 (all administered by the Department of Conservation) have a role in relation to managing animals:

- the **Wild Animal Control Act 1977** (WAC Act) controls the hunting and release of wild animals and regulates deer farming and the operation of safari parks. It also gives local authorities the power to destroy wild animals under operational plans that have the Minister of Conservation's consent;
- the **Wildlife Act 1953** controls and protects wildlife not subject to the WAC Act. It identifies which wildlife are not protected (e.g. mustelids, possums, wallabies, rooks, feral cats, Canada goose), and those which are to be game (e.g. mallard ducks, black swan), and which are partially protected or are injurious; and
- the **Freshwater Fisheries Regulations 1983** places controls on people who possess, control, rear, raise, hatch or consign noxious fish without authority.

2.2.6 Other legislation

Other legislation, such as the Reserves Act 1977 and the Conservation Act 1987, contain provisions that support pest management within a specific context. The role of regional councils under such legislation in relation to pest management is limited to advocacy.

2.3 Regional leadership

Environment Southland has elected to undertake leadership in pest management by making a regional pest management plan under the Act. A Regional Pest Management Strategy was made in 1997 and was reviewed in 2002 and 2007. The current strategy which was to expire in 2012 was extended to 2018. It continued to be in effect while under review until the commencement of the SRPMP.

Environment Southland has adopted the "landowner responsibility" principle with pest management where the landowner and/or occupier has the primary responsibility for managing the impacts of pests on their land. However, where landowner and/or occupier efforts are not effective then activities conducted under the SRPMP's authority, including the enforcement of the rules, may be used.

2.4 Relationship with other plans and regulations

A regional pest management plan must not be inconsistent with:

(i) any national pest management plan or regional pest management plan that is focused on the same organism; or
(ii) any pathway management plan; or
(iii) a regional policy statement or regional plan prepared under the RMA; and
(iv) any regulation[1].

[1] Regulations are defined in the Biosecurity Act 1993 as regulations made under this Act.

There are no known inconsistencies with other pest management plans on the same organism or any pathway management plan. A number of organisms included in the Otago and West Coast councils' current regional pest management strategies are not included in the SRPMP because the cost benefit analysis for these organisms did not warrant their inclusion in Southland. This is not considered to be an inconsistency as the Act anticipates differing approaches to pest management between regions.

Possums and mustelids are subject to the National Pest Management Strategy for bovine tuberculosis (TB). The objective for the National Strategy is the eradication of TB. This reflects the context for each region and does not constitute an inconsistency between plans.

The SRPMP must not be inconsistent with the Southland Regional Policy Statement 2017 (RPS) or any regional plan development in accordance with the RMA. The SRPMP is complementary to the policies and methods in the RPS and there is no inconsistency between the SRPMP and the RPS and other relevant regional plans.

RPS provision	RPS text
Policy BIO.7 – Active management	Promote an active and integrated management approach to maintaining and restoring or enhancing indigenous biodiversity through methods including the Southland Regional Pest Management Plan, and advice and information on pest management, fencing and planting.
Method BIO.4 – Pest plant and pest animal management	(a) Implement regional pest management programmes and plans to maintain, enhance or restore indigenous ecosystems and habitats to a healthy functioning state. (b) Assist individuals and groups with pest plant and pest animal management.

There are no known inconsistencies with any regulations.

2.5 Relationship with Māori

One specific purpose of a regional pest management plan under the Act is to provide for the protection of the relationship between Māori and their ancestral lands, waters, sites, wāhi tapu, and taonga, and to protect those aspects from the adverse effects of pests. Māori involvement in biosecurity is an important part of exercising kaitiakitanga. Māori also carry out significant pest management through their primary sector economic interests and as land owners and/or occupiers.

The LGA requires Council to recognise and respect the Crown's responsibilities under the Tiriti o Waitangi - Treaty of Waitangi. It also requires councils to maintain and improve opportunities for Māori to contribute to decision-making processes. This includes considering ways to help Māori to contribute. These responsibilities and requirements were met while preparing the SRPMP and will continue after the SRPMP takes effect.

3. Responsibilities and obligations

3.1 The management agency

Environment Southland is the management agency responsible for implementing the SRPMP.

How Environment Southland will undertake its management responsibilities is set out in Part Three (Procedures) of the Plan. Environment Southland has also prepared an Operational Plan under s100B of the Act, which details how the Biosecurity Strategy and the SRPMP will be given effect. A summary of the Operational Plan is included in the Biosecurity Strategy.

Pest management in Southland is a shared responsibility. While Environment Southland will be the management agency, pest management will be undertaken by many different stakeholders, agencies, community groups and individuals. This approach will result in effective and enduring pest management outcomes for the region.

3.2 Compensation and disposal of receipts

The SRPMP does not provide for compensation to be paid to any persons meeting their obligations under its implementation. However, should the disposal of a pest or associated organism provide any net proceeds, a person will be paid disbursement in the manner noted under Section 100I of the Act.

3.3 Affected parties

3.3.1 Responsibilities of owners and/or occupiers

Pest management is an individual's responsibility in the first instance because generally owners and/or occupiers contribute to the pest problem and in turn benefit from the control of pests. The term "occupier" has a wide definition under the Act and includes:

- the person who physically occupies the place; and
- the owner of the place; and
- any agent, employee, or other person acting or apparently acting in the general management or control of the place.

Under the Act, "place" includes any building, conveyance, craft, land or structure and the bed and waters of the sea and any canal, lake, pond, river or stream.

Owners and/or occupiers must manage pest populations at or below levels specified in the rules. If they fail to meet the rules' requirements, they may face legal action. For example, some rules specify that a contravention of the rule creates an offence under Section 154N (19) of the Act. Owners and/or occupiers (and other persons) must not sell, propagate, breed or distribute pests.

An authorised person can enter and inspect any place, at any reasonable time, to:

- find out whether pests are on the property;
- manage pests; or
- ensure the owner and/or occupier is complying with biosecurity law.

While the owner and/or occupier may choose the methods they will use to control any pests, they must also comply with the requirements under other legislation (e.g. RMA and/or the Hazardous Substances and New Organisms Act 1996).

The SRPMP treats all private land equitably and emphasises the responsibilities and obligations of all land owners and/or occupiers, including Māori. Environment Southland acknowledges the complexity around Māori land ownership and occupation; including multiple ownership, lessees and a range of management structures. Where owners and/or occupiers of Māori land are unknown, the Māori Land Court may help to identify and assist in communication with owners and/or occupiers.

3.3.2 Crown agencies

Historically Environment Southland has worked closely with Crown agencies about pest management in Southland and particularly with the Department of Conservation, Land Information New Zealand and the Ministry of Primary Industries. As a result there is a close working relationship between these organisations and this has also enhanced interaction with communities and owners. There has been an ongoing discussion with the Crown agencies around the SRPMP and the future of pest management in Southland.

Under Section 69(5) of the Act, the Crown is liable to meet the obligations or costs attached to GNRs contained within regional pest management plans. A GNR addresses situations where a pest may spread across a property boundary, where that spread impacts a neighbouring property and where that pest is being controlled.

3.3.3 Actions to be taken by territorial authorities

There are three territorial authorities within the Southland region:

- Southland District Council;
- Invercargill City Council; and
- Gore District Council.

Territorial authorities occupy land (e.g. parks and reserves) and are a road controlling authority in their locality. District and city councils (and Environment Southland) are required to carry out pest management on land they occupy, including road reserves, as set out in any Plan Rule prescribed in Part Two of the SRPMP and to meet the costs of doing so.

3.3.4 Road reserves

Road reserves include the land on which the formed road lies and the verge area that extends to adjacent property boundaries. The Act allows the option of determining whether roading authorities (NZ Transport Agency and district/city councils) or adjoining land owners and/or occupiers are responsible for pest management in road reserves (see s6(1) of the Act).

Control of pests on road reserves is an important part of regional pest plants control. Road reserves provide a corridor that can permit a pest to spread. They have a boundary with (generally) private land, and they are very widely used public areas. The term "road reserve", used in this context, usually means land on which the road lies, plus the verge area extending to adjacent property boundaries. Road reserves also include unformed legal roads.

The SRPMP specifies that adjoining owners and/or occupiers are not legally responsible for pest plants on road reserves.

Therefore, by default, responsibility for all pest management on road reserves lies with the relevant road controlling authority (territorial local authorities and NZ Transport Agency). A road controlling authority may apply in writing for an exemption to any plan rule where roadside verges are inaccessible, or rely on all vegetation cover for stabilisation purposes. Also, where there is a common boundary, such as with railway reserve land, control of half this adjacent reserve land is required by roading authorities.

The New Zealand Transport Agency, Territorial Authorities and Environment Southland will work by agreement to manage mutual obligations and expectations.

3.3.5 Rail corridors

For the purposes of the Act, KiwiRail is treated separately to the Crown, and comes within the definition of an owner and/or occupier of land under the Act. Accordingly, it has obligations and responsibilities for pest management on the land that it occupies, equal to those of other owners and/or occupiers. KiwiRail and Environment Southland will work by agreement to manage mutual obligations and expectations.

3.3.6 River beds

Pest control is being carried out within many of the region's waterways by Land Information New Zealand and the Department of Conservation. The Crown owns the river beds and Land Information New Zealand has been given responsibility for the administration of pest control within those areas. The Department of Conservation occupies some land adjacent to river beds, including marginal strips. Land Information New Zealand is responsible for all unallocated (previously known as unalienated) Crown land.

Staff from Environment Southland, Land Information New Zealand and the Department of Conservation liaise closely, resulting in a coordinated effort to achieve long-term control of pests in Southland river beds.

Environment Southland's activities in relation to vegetation control within the river bed system of Southland, undertaken by the Catchment Division, are confined to flood fairways of the Aparima, Mataura, Ōreti and lower Waiau Rivers. Activities are funded by way of catchment rates and, in the case of the Waiau, a contribution from Meridian Energy Limited.

The control programme implemented on these river beds is not restricted to just pest plants, but is for general vegetation control that happens to include pest plants. The purpose of the control programme on these river systems is to maintain a specified, pre-determined width of flood fairway to allow for the unimpeded passage of floodwaters, thus assisting with the

overall flood alleviation schemes. While Environment Southland is not legally responsible for the land on which the work is carried out, it is done to ensure benefit to all owners and/or occupiers receiving protection from the individual flood schemes.

In addition to the main river systems, Environment Southland also carries out vegetation control on minor water channels to allow for the unimpeded access of machinery, for the purposes of carrying out maintenance programmes. This work is funded through works rating districts.

3.3.7 Marine pests

Environment Southland has specified seven marine organisms as pests in the SRPMP. These are considered to pose significant risk to economic, environmental, social and cultural values in our coastal marine area. Their classification as pests allows for the marine biosecurity provisions in the Regional Coastal Plan for Southland to operate with greater certainty. Environment Southland may consider collaborative programmes to manage marine pests with Crown agencies and stakeholders.

Part Two

Pest Management

4. Organism specifications

4.1 Organisms specified as pests

The organisms listed in Table 2 are specified as pests. The table also indicates what management programme will apply to the pest and if a Good Neighbour Rule (GNR) applies.

Attention is also drawn to the **statutory obligations** of any person under s52 and s53 of the Act. Those sections prevent any person from selling, propagating or distributing any pest, or part of a pest, covered by the SRPMP within the Southland region. However, there are a small number of pests for which this obligation is limited to the geographic area defined in the Stewart Island/Rakiura site-led programme. Not complying with s52 and s53 is an offence under the Act, and may result in the penalties noted in s157(1).

Table 2: Organisms specified as pests

Common Name	Scientific Name	Primary Programme	GNR
Plants			
African club moss*[3]	*Selaginella kraussiana*	Site-led	
Bomarea*	*Bomarea multiflora*	Progressive containment	
Boneseed*	*Chrysanthemoides monilifera*	Exclusion	
Boxthorn	*Lycium ferocissimum*	Eradication	
Broom	*Cytisus scoparius*	Sustained control	√
Buddleja	*Buddleja davidii*	Progressive containment	
Chilean needle grass*	*Nassella neesiana*	Exclusion	
Contorta (lodgepole) pine*	*Pinus contorta*	Progressive containment	
Cotoneaster	*Cotoneaster franchetii, C. glaucophyllus, C. simonsii**	Progressive containment	
Darwin's barberry*	*Berberis darwinii*	Progressive containment	
Field horsetail*	*Equisetum arvense*	Eradication	
German ivy	*Delairea odorata*	Eradication	
Giant buttercup	*Ranunculus acris*	Progressive containment	
Gorse	*Ulex europaeus*	Sustained control	√
Gunnera*[3]	*Gunnera tinctoria*	Site-led	
Hawthorn[3]	*Crataegus monogyna*	Site-led	
Heather	*Calluna vulgaris*	Progressive containment[1]	
Japanese honeysuckle	*Lonicera japonica*	Progressive containment	
Knotweed (Indian/Himalayan)[3]	*Persicaria wallichii* (syn *Polygonum polystachyum*)	Site-led	
Lagarosiphon	*Lagarosiphon major*	Progressive containment	
Mountain pine	*Pinus mugo*	Progressive containment	
Nassella tussock*	*Nassella trichotoma*	Exclusion	
Nodding thistle	*Carduus nutans*	Sustained control	√
Old man's beard*	*Clematis vitalba*	Progressive containment	
Parrots feather*	*Myriophyllum aquaticum*	Eradication	
Purple loosestrife*	*Lythrum salicaria*	Eradication	

Common Name	Scientific Name	Primary Programme	GNR
Ragwort	*Jacobaea vulgaris*	Sustained control	√
Reed sweet grass	*Glyceria maxima*	Progressive containment	
Rough horsetail*	*Equisetum hyemale*	Progressive containment	
Siberian lyme grass	*Leymus racemosus*	Progressive containment	
Smilax*	*Asparagus asparagoides*	Eradication	
Spanish heath[3]	*Erica lusitanica*	Site-led	
Spartina	*Spartina anglica*	Eradication	
Wilding conifers[2]		Progressive containment	√
Willow (crack, grey)*[3]	*Salix fragilis*, *S. cinerea*	Site-led	
Animals			
Bengal cat	*Felis catus var. Bengal*	Progressive containment	
Feral cat[3]	*Felis catus*	Site-led	
Feral goat[3]	*Capra aegagrus hircus*	Site-led	
Feral pig[3]	*Sus scrofa*	Site-led	
Hedgehog[3]	*Erinaceus europaeus*	Site-led	
House Mouse[3]	*Mus musculus*	Site-led	
Mustelids (ferret, stoat, weasel)[3]	*Mustela furo, M. ermina, M. nivalis*	Site-led	
Possum	*Trichosurus vulpecula*	Sustained control[1]	
Rabbit	*Oryctolagus cuniculus*	Sustained control	
Rat (Norway, ship and kiore)[3]	*Rattus norvegicus, R. rattus R. exulans*	Site-led	
Rook	*Corvus frugilegus*	Exclusion	
Wallaby*** - Bennett's, Dama, Parma, Brushtail Rock and Swamp	*Macropus rufogriseus rufogriseus, M. eugenii, M. parma, Petrogale penicillata, Wallabia bicolor*	Exclusion	
Marine			
Asian paddle crab	*Charybdis japonica*	Exclusion	
Sea squirts	*Styela clava*, Eudistoma elongatum, Pyura doppelgangera and Didemnum vexillum*	Exclusion	
Sabella (Mediterranean fanworm)**	*Sabella spallanzanii*	Exclusion	
*Undaria**	*Undaria pinnatifida*	Progressive containment	

* Unwanted organisms (as declared by a chief technical officer)

** Notifiable organism (s45 Biosecurity Act)

*** Unwanted organism status expires 20/09/21

1 Also subject to site-led programmes

2 Wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in Table 3 established by natural means, unless it is located within a plantation forest, and does not create any greater risk of wilding conifer spread to adjacent or nearby land than the plantation forest that it is a part of.

3 Obligations under s52 and s53 of the Biosecurity Act 1993 are limited to the geographic area defined in the Stewart Island/Rakiura site-led programme.

Table 3: Introduced conifer trees

Table 3 covers species that when not lawfully established are pests.

Common name	Scientific name
Bishops pine	*Pinus muricata*
Contorta (lodgepole) pine*	*Pinus contorta*
Corsican pine	*Pinus nigra*
Douglas fir	*Pseudotsuga menziesii*
Dwarf mountain pine	*Pinus mugo*
European larch	*Larix decidua*
Maritime pine	*Pinus pinaster*
Mountain pine	*Pinus uncinata*
Ponderosa pine	*Pinus ponderosa*
Radiata pine	*Pinus radiata*
Scots pine	*Pinus sylvestris*

* Unwanted organisms (as declared by a chief technical officer)

Note:
Wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in Table 3 established by natural means, unless it is located within a plantation forest, and does not create any greater risk of wilding conifer spread to adjacent or nearby land than the plantation forest that it is a part of.

4.2 Pest agents

There are some organisms specified as pest agents in the SRPMP. These are distinct from other organisms which are specified as pests. Pest agents are defined in the Biosecurity Act: Pest agent, 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.

There are rules pertaining to pest agents. However, these organisms are not specified as pests and are not subject to statutory obligations in place under the Act (Section 52 and Section 53) that prevents the sale, propagation and distribution by any person.

Pest agent rules are included in the SRPMP to ensure the success of the related pest objective.

Table 4 covers species that are pest agents regardless of their method of establishment.

Table 4: Pest agents

Common Name	Scientific Name
Conifer	*Pinus muricata, Pinus contorta, Pinus nigra Pseudotsuga menziesii, Larix decidua, Pinus pinaster, Pinus mugo and P.uncinata, Pinus ponderosa, Pinus radiata, Pinus sylvestris (Any introduced conifer species that is capable of helping the spread of wilding conifers and is not otherwise specified as a pest in the SRPMP and is not located within*

Common Name	Scientific Name
	a plantation forest).
Domestic cat	*Felis catus* *(Domestic cats are only considered to be a pest agent:* *1. within the Stewart Island Rakiura Site-led Programme Zone; and* *2. where they are not de-sexed and microchipped.)*
Domestic goat	*Capra aegagrus hircus*
Domestic pig	*Sus scrofa*

4.3 Organisms of interest

The organisms specified as pests under the SRPMP are those that are capable of causing significant "adverse effects" on one or a number of values encompassing economic wellbeing, the environment, human health, enjoyment of the natural environment, or the relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu, and taonga. It is also possible to specify "any other organisms intended to be controlled" but not accorded pest status.

There are many further organisms capable of causing some adverse effects, particularly to biodiversity values. However, a number pose a sufficient future risk to warrant being watch-listed for ongoing surveillance or future control opportunities. Therefore, their placement in an "organisms of interest" category is considered prudent.

Organisms of interest are not accorded pest status but future control of them could arise, for example through the site-led programme. A review of the SRPMP may be necessary to include them as pests if any rules are necessary that require an owner and/or occupier to act.

Environment Southland maintains a list of those organisms included in the category of "organisms of interest" that is available on its website.

4.4 Unwanted organisms

For varying reasons, a number of species have been declared as unwanted organisms and this applies on a national basis. Some of those organisms are subject to national action under the National Interest Pest Response (NIPR) programme managed by the Ministry for Primary Industries. None of the species subject to that programme are known to be present in Southland.

For the most up-to-date list of unwanted organisms, visit the Ministry for Primary Industries website: https://www.mpi.govt.nz.

The National Pest Plant Accord (NPPA) targets 113 plant species currently and all of them are declared Unwanted Organisms. NPPA is a cooperative agreement between the Nursery and Garden Industry Association, regional councils and government departments with biosecurity responsibilities. It seeks to prevent the sale and/or distribution of the specified plants where

either formal or casual horticultural trade is the most significant way of spreading the plants in New Zealand.

For the most up-to-date list of Accord species, visit the Ministry for Primary Industries website: https://www.mpi.govt.nz.

Unwanted Organism status means that such organisms are banned from sale, propagation and distribution in accordance with s52 and s53 of the Act. If an unwanted organism not already subject to the SRPMP is detected in the region Environment Southland will consider managing that organism by:

(i) continuing to rely on s52 and s53 provisions; or
(ii) undertaking small-scale management in accordance with s100(V) of the Act; or
(iii) reviewing the SRPMP in accordance with the relevant parts of s100(D) of the Act to include it as a pest.

5 Pest management framework

5.1 Objectives

Objectives have been set for each pest or class of pests. These are set out in Section 6 of the SRPMP. As required by the NPD, the objectives include:

- the particular adverse effect/s of the pest or class of pest on the matters listed in s54(a) of the Act that the Plan will address;
- the intermediate pest management outcomes that the Plan is seeking to achieve;
- the geographic area to which the objective applies;
- the extent to which the outcome will be achieved (if applicable);
- the period within which the outcome is to be achieved; and
- the intended outcome in the first 10 years of the Plan (if the period is greater than 10 years).

5.2 Pest management programmes

One or more types of pest management programme may be used to control each pest covered by the SRPMP. The types are defined by the NPD and reflect outcomes in keeping with the extent of the pest's invasion within the region, and whether it is possible to achieve the desired control levels.

The intermediate outcomes for five programmes are described below:

1. **Exclusion programme:** to prevent the establishment of the subject, or an organism being spread by the subject, that is present in New Zealand but not yet established in an area.
2. **Eradication programme:** to reduce the infestation level of the subject, or an organism being spread by the subject, to zero levels in an area in the short to medium term.
3. **Progressive containment programme:** to contain or reduce the geographic distribution of the subject, or an organism being spread by the subject, to an area over time.
4. **Sustained control programme:** to provide for ongoing control of the subject, or an organism being spread by the subject, to reduce its impacts on values and spread to other properties.
5. **Protecting values in places (site-led) programme:** 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.

5.3 Principal measures to manage pests

The principal measures that may be used to achieve the objectives are in four main categories. Each category contains a suite of tools to be applied in appropriate circumstances.

1. **Requirement to act**

   Land owners and/or occupiers or other persons may be required to act where SRPMP rules dictate:

   (a) pests are to be controlled;
   (b) management plans are to be prepared and submitted;
   (c) the presence of the pest is to be reported;
   (d) actions are to be reported (type, quantity, frequency, location, programme completion); or
   (e) pests are not to be spread (propagated, sold, distributed), and pathways are to be managed (e.g. machinery, gravel, animals).

2. **Council inspection**

   Inspection by Council may include staff:

   (a) visiting properties or doing surveys to determine whether pests are present, or rules and management programmes are complied with, or to identify areas that control programmes will apply to (places of value, exclusion zones, movement control areas);
   (b) managing compliance with regulations (rule enforcement, action on default, prosecution, exemptions);
   (c) taking limited control actions, where doing so is effective and cost efficient; or
   (d) monitoring effectiveness of control.

3. **Service delivery**

   Council may deliver the service:

   (a) where it is funded to do so;
   (b) on a user pays basis;
   (c) by providing control tools, including sourcing and distributing biological control agents, or provisions (e.g. traps, baits, chemicals).

4. **Advocacy and education**

   Council may:

   (a) provide general purpose education, advice, awareness and publicity activities to land owners and/or occupiers and the public about pests and pathways (and control of them);
   (b) encourage land owners and/or occupiers to control pests;
   (c) facilitate or fund community and land owners and/or occupier self-help groups and committees;
   (d) help other agencies with control, advocacy, and the sharing or sourcing of funding;
   (e) promote industry requirements and best practice to contractors and land owners and/or occupiers,
   (f) encourage land owners and/or occupiers and other persons to report any pests they find or to control them; or
   (g) facilitate or commission research.

5.4 Rules

Rules will play an integral part in achieving many of the pest management outcomes sought by the SRPMP. They create a safety net to protect land owners and/or occupiers from the effects of the actions or inactions of others where non-regulatory means are inappropriate or do not succeed.

Sections 73(5) and 73(6) of the Act prescribe the purposes for which rules may be included in the Plan and what they may specify, including:

(i) the actions required to manage pests;
(ii) prohibiting or regulating activities to assist in the control of the pest;
(iii) whether breaching the rule is an offence under the Act; and
(iv) the particular times and parts of the region where the rules apply.

Rules can apply to owners and/or occupiers of a place, owners and persons in charge of goods, or to a person's actions in general.

Importantly, amendments to the Act arising from the Biosecurity Law Reform Act 2012 now make the Crown bound by those rules explicitly identified as **Good Neighbour Rules** (GNR) in regional pest management plans. For this reason, GNRs have been included to control boundary issues on Crown land where there are also rules controlling the entire property for other land owners and/or occupiers (which do not bind the Crown).

The NPD and accompanying guidance notes provide extra requirements pertaining to a GNR. Of particular note, a GNR will:

(a) identify who the GNR applies to - either all owners and/or occupiers, or a specified class of owner and/or occupier (for example, within a zone);
(b) identify the pest to be managed;
(c) apply when the pest is already present on the owner and/or occupier's land;
(d) apply when the owner and/or occupier of the adjacent or nearby land is, in the view of the management agency, taking reasonable measures to manage the pest on their land; and
(e) (if relevant) state the particular values or uses of the neighbouring land that the pest's spread affects, and that the GNR is intended to address.

The pests subject to GNRs include ragwort, nodding thistle, broom, gorse and wilding conifers.

Some pests do not have specific rules. This is because Environment Southland will undertake control operations. These pests are included in the SRPMP to ensure Environment Southland officers have the powers (under Part 6 of the Act) to ensure effective management can occur. These powers can be relied upon irrespective of whether a rule exists for the pest or not. Inclusion in the SRPMP also provides restrictions under Sections 52 and 53 of the Biosecurity Act 1993, including, preventing the communication, release, spread, sale and propagation of pests.

6 Pest descriptions and programmes

Section 6 lists the pests to be managed under the SRPMP and the programme(s) to which they are assigned. The SRPMP is required to describe, for each pest listed:

- its adverse effects;
- the reasons for a Plan;
- the objectives to be included in the Plan (see Section 5.1 above);
- the principal measures (including rules) to be used to achieve the objectives (see Section 5.3 above)[2]; and
- any other measures that would be reasonable to take to achieve the objectives.

6.1 Pests to be managed under the exclusion programme

The pests listed in Table 5 below are not known to be present in the Southland region and preventing their establishment is considered to be of benefit to the region. These pests have the potential to establish in Southland and may cause adverse effects on production/economic wellbeing and environmental values. These pests can displace other species, impacting pasture and native species. The impact to production or native ecosystems warrants the prevention of their establishment in the region. Success in doing so is considered more likely under a planned and co-ordinated approach compared to individual owner and/or occupier responsibility.

Table 5: Pests to be managed under the exclusion programme

Common Names	Scientific Name	Area
Plants		
Boneseed	*Chrysanthemoides monilifera*	All Southland
Chilean needle grass	*Nassella neesiana*	All Southland
Nassella tussock	*Nassella trichotoma*	All Southland
Animals		
Rook	*Corvus frugilegus*	All Southland
Wallaby - Bennett's, Dama, Parma, Brushtail Rock and Swamp	*Macropus rufogriseus rufogriseus, M. eugenii, M. parma, Petrogale penicillata, Wallabia bicolor*	All Southland
Marine		
Asian paddle crab	*Charybdis japonica*	All Southland
Sabella (Mediterranean fanworm)	*Sabella spallanzanii*	All Southland

[2] Where it is stated in the following sections that Environment Southland may undertake, facilitate or assist additional approaches to control work, this will not generally include work on Crown or Public Conservation land. The reason for this is that it is not considered an effective or cost efficient use of Environment Southland's resources to undertake control works on Crown or Public Conservation land when those entities receive funding for control works from other sources.

Common Names	Scientific Name	Area
Sea squirts (clubbed tunicate, Australian droplet tunicate, pyura & didemnum)	*Styela clava, Eudistoma elongatum, Pyura doppelgangera and Didemnum vexillum*	All Southland

The characteristics of each of these pests proposed to be managed under the exclusion programme, and adverse effects that they pose, are set out in Table 6 below.

Table 6: Characteristics and threats of pests in the exclusion programme

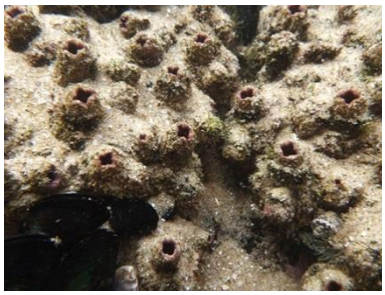
Description and adverse effects	
Plants	
Boneseed is an evergreen shrub reaching up to three metres tall. The leaves are dull green, toothed and covered with a cottony down. Daisy-like flowers are produced in bright yellow clusters from late winter until late summer. The plant gets its name from its hard, bone-coloured seed. They have a thin, fleshy cover, initially green but changing to black upon ripening. Up to 50,000 seeds per plant can be produced in one year and can remain viable for up to 10 years. Seed dispersal occurs locally by birds and by water. A tolerance of dry, infertile soils allows boneseed to colonise and establish easily in coastal areas. While thought to be restricted to frost free areas, that may not be the case. Absence of grazing animals also aids its establishment. Boneseed's vigorous growth will displace desirable plants, shade out native seedlings and reduce or prevent public access to coastal and beach areas. It is highly flammable and will regenerate prolifically after fire. It can cause adverse effects to environmental and recreational values. For these reasons boneseed is included in the SRPMP.	
Chilean needle grass is a tufted perennial plant growing to one metre in the absence of grazing. Its leaves are bright green and harsh to the touch. Identification within grazed pasture is difficult prior to flower emergence in October. The flowers have a purple tinge and ripen into hard, sharp seeds with long twisting tails. These aid the seed in the penetration of the animal's skin and the soil. It also produces viable seeds in its mid and basal stem	

Description and adverse effects	
regions (cleistogenes). Plants will grow into dense stands and exclude other indigenous and exotic grassland species. Chilean needle grass reduces the livestock carrying capacity of pastures due to the production of masses of unpalatable flower stalks. The sharp penetrating seeds injure livestock and result in the downgrading of wool, skins and hides. The seed can move through an animal's skin into body muscles, causing abscesses and the downgrading of carcasses. Lambs are particularly vulnerable to seeds penetrating their eyes causing blindness. The point of the seed is extremely sharp and hairy so catches onto passing animals, vehicles and humans. As a result it can be transported considerable distances to new sites. Chilean needle grass can cause adverse effects to pastoral production and economic well-being. For these reasons Chilean needle grass is included in the SRPMP.	
Nassella tussock is a tufted, perennial, tussock grass with fine, tightly rolled, light green or yellowish-green leaves. The plants are erect when young but slightly drooping with age and grow up to 70 centimetres tall and 80 centimetres wide. When fingers are run down the leaf, they feel needle-like and very tough. The stem is swollen just above ground level, like a shallot. Flowering usually commences in October and is characterised by a purplish tinge that enhances the plant's visibility. Flower heads are open, with a branched seed head 25–95 centimetres long, and produced between November and January. Each mature plant can produce up to 100,000 seeds per year. Ripe seeds are purplish with a three centimetre long bristle. Roots are deep, matted and fibrous. They have been found growing 1.7 metres below the soil surface. Nassella tussock adversely affects production values due to reduced pasture quality and it also affects environmental values by displacing native species in tussock grassland. Nassella tussock is not known to occur in Southland but it is known to occur in Otago - near Roxburgh, Alexandra and in the Cardrona Valley.	

Description and adverse effects	
For these reasons nassella tussock is included in the SRPMP.	
Animals	
Rooks are large, glossy, purplish-black birds and members of the crow family. The rook has a prominent, powerful bill and whitish patches of skin show around the base of its pale beak. Larger than a magpie, it weighs around 400 grams and is 45 centimetres long. Rooks announce their presence with a distinctive 'kaah', and as they fly they 'caw' to keep in contact with each other. The rook is a highly gregarious bird species, foraging daily from either rookeries or communal winter roosts. During breeding (August-January), all birds live in rookeries, often the same sites used in previous breeding seasons. The males who forage for the family group make numerous individual forays, averaging less than one kilometre, to communal feeding grounds. At other times of the year, birds spend each night in communal roosts. Feeding forays at such times range up to 20 kilometres. Rooks show a strong preference for foraging in fields of cereals at all stages of the crop, in recently cultivated land, and in stands of walnut trees. Feeding ranges are influenced by the occurrence of highly preferred foods, with extensive flights being made to walnut trees and to recently tilled fields. Large flocks of rooks can severely damage or destroy newly emerging crops or pasture. Rooks can adversely impact production and economic well-being. For these reasons rook is included in the SRPMP.	
Wallaby is a kangaroo-like marsupial animal standing 0.5 (dama) to 1.5 (Bennett's) metres tall with tails as long as half their height. They range in weight from approximately five kilograms to in excess of 20 kilograms. Their fur colour varies from grey to reddish brown. Wallabies are capable of causing significant adverse environmental effects. These include preventing the regeneration of native bush, depletion of forest understorey and possible impacts on water quality. They also damage tall tussock grasslands, including the inter-tussock vegetation, which can become depleted, with a consequent increase in bare ground and higher	

Description and adverse effects	
risk of soil erosion. Adverse economic effects include damage to pasture with anecdotal evidence of complete clearance of cover in places. There is evidence of wallabies grazing on green feed crops particularly where these border suitable cover. Wallabies also damage exotic forests, particularly at the establishment stage, with damage being more serious in areas bordering native bush or scrub areas. For these reasons wallaby is included in the SRPMP.	
Marine	
Asian paddle crab *(Charybdis japonica)* is a large crab with six prominent spines on each side of the carapace, which is up to 12 centimetres across, and five prominent spines on the upper surface of each claw. The swimming paddles on the back legs are flattened. Colour ranges from off-white and pale green, through olive-green to a deep chestnut brown with purplish markings. They inhabit the sand and mud of coastal estuaries and harbours from the low tide mark out to 15 metres depth. It is highly detrimental to shellfish aquaculture, is an aggressive predator and displaces native and fisheries species. Also, it can carry diseases that affect crab, lobster, shrimp, and prawn fisheries. For these reasons Asian paddle crab is included in the SRPMP.	
Mediterranean fanworm *(Sabella)* is a large tube worm that prefers sheltered, shallow subtidal areas (1 to 30 metres deep). It attaches to hard substrates such as shells, jetty pylons, wrecks and rocks, but can also be found in sand. Sabella secretes a tough, flexible tube up to 40 centimetres long. Tentacles at the top form a spiralled fan, up to 15 centimetres across. Fans vary in colour, from dull white, to brightly banded with stripes of orange, purple and white. These fast-growing worms can form vast, dense meadows and are likely to compete with native suspension feeders for food and interfere with their	

Description and adverse effects	
lifecycle. It is known to be present in New Zealand marine waters and in a number of ports outside of Southland. For these reasons Mediterranean fanworm is included in the SRPMP.	
Sea squirts are marine invertebrates. ***Styela* (clubbed tunicate)** has a long, club-shaped body on a tough stalk. Its surface is leathery, rumpled, and nobbly. They can be brownish-white, yellowish-brown, or reddish-brown and ugly in appearance. *Styela* is sometimes referred to as a 'solitary' sea squirt because each individual has its own stalk and adheres separately to a substrate. *Styela* is known to grow rapidly overseas, reaching densities of up to 500-1500 individuals per square metre. They can live for up to two years and grow up to 160 millimetres long. In October 2005 *Styela* was discovered in Auckland's Viaduct Basin and in Lyttelton Harbour. It was found soon after on the hull of a vessel that had sailed from Auckland to Picton and in the Hauraki Gulf and Northland. *Styela* multiplies rapidly in suitable sites, spawning every 24 hours in water temperatures above 15°C. It competes with other filter feeders for food and space. As a result, it disrupts native ecosystems and aquaculture. The ***Eudistoma* sea squirt** is also known as the Australian droplet tunicate. It forms large colonies that attach to hard surfaces and look like clusters of white or cream-coloured cylindrical tubes. Each colony contains numerous small individuals and they can appear orange flecked due to the colour of the larvae within them. The species is firm and gelatinous to the touch and the cylindrical colonies are generally 5-30 centimetres long, but can occasionally reach 1.5 metres in length. Colonies are generally 5-20 millimetres in diameter and regress and over-winter as small (approx. 10 millimetres) cream buds, re-growing the following spring to larger colonies. This species is generally found in soft-bottomed tidal habitats and on hard structures such as wharf piles, aquaculture equipment and mangrove roots. It prefers	

Description and adverse effects	
submerged habitats just below the waterline, but can be found out of the water for periods during low tide. *Eudistoma* competes with native species for both space and food. Due to its rapid growth rate, it can inhabit a wide range of habitats, and can reach high abundances. It is also possible that it can ingest and kill the eggs and larvae of native species. However, some of the competitive ability of this species is minimised by the fact that it is only present in large numbers during summer months and dies down during rain events and winter months. ***Pyura*** is a large, solitary, stumpy, chalice-shaped sea squirt with two large mounds representing siphons set in the depressed upper surface of the body. When the *Pyura* is inflated, cruciform or cross-shaped siphons are visible by the bright reddish orange body wall visible from the exterior. It may be found down to 12 m. At present *Pyura* are restricted to the far North Island. Individuals can be very large and often form dense aggregates on intertidal platforms, sometimes occupying 100% cover. It is capable of displacing important native New Zealand species, including green shell mussels. ***Didemnum*** colonies form extensive sheets on vertical surfaces. Cylindrical or frond-like outgrowths can often arise off the main colony. These can form extremely long dripping tendrils, sometimes metres long. Outgrowths of the colony encrust algae, hydrozoans, tube worms and mussels. The colonies are pale yellow to cream coloured and firm yet gelatinous to the touch. Common exhalent openings are obvious at the end of lobes and a fine open network of canals can be seen below the surface. Spicules are sparse throughout most of the pest; making it more gelatinous than other *Didemnum* species. Dense colonies of *Didemnum* displace native and fisheries species and smother beaches, rocks and tidepools. They also foul boat hulls, the undersides of floating structures and marine farm lines and sea cages. For these reasons, sea squirts are included in the SRPMP.	

The management aims and the range of methods to be used to accomplish those aims for the pests to be excluded are set out in Table 7 below. An explanation of alternatives means is also provided.

Table 7: Aims and means of achievement for the exclusion programme

Objective, Principal Measures and Rules	
Plan Objective 1	**Principal measures to be used**
Over the duration of the Plan, preclude the establishment of any pests listed in Table 5 within the Southland region to minimise or prevent adverse effects on economic well-being and environmental values[3].	Appropriate measures drawn from the suite of activities listed under **requirement to act, council inspection, service delivery, advocacy and education** described in Section 5.3 of the SRPMP will be used to by Environment Southland to achieve Objective 1. ***Note:*** *Environment Southland or other orgnisations will undertake control work unless an owner and/or occupier agrees in writing with Environment Southland to carry out the control work themselves.*
Plan Rule 1	**Explanation to Rule**
Other than under the instruction or supervision of an authorised person, no person shall: (a) poison, capture or trap any rook; or (b) discharge any firearm at any rook; or (c) discharge any firearm at or within 500 metres of any tree containing a rookery; or (d) damage, disturb or interfere in any way with a rookery. A breach of this rule or any part thereof creates an offence under Section 154N (19) of the Act.	The reason for this rule is to prevent humans hindering any control of rooks. The birds are wary and require a settled environment for successful control. They are also easily dispersed.
Plan Rule 2	**Explanation to Rule**
Any person who detects or suspects the presence of any pest listed in Table 5 within the Southland region, must immediately report the pest's presence and location to Environment Southland.	The reason for this rule is to assist Environment Southland in detecting the presence of any pest targeted for exclusion from the Southland region.
Plan Rule 3	**Explanation to Rule**
No person other than an authorised person shall possess, keep, hold, enclose or otherwise harbour any pest listed in	The reason for this rule is to prevent humans actively attempting to establish exclusion pest populations within the Southland region.

[3] See glossary for definition

Objective, Principal Measures and Rules	
Table 5. A breach of this rule creates an offence under Section 154N (19) of the Act.	Exemptions to the rule will cater for case by case applications e.g. to keep wallabies or rooks for public benefit for research, zoos or any other use. It is in the long-term interests of the region's inhabitants that biodiversity and economic well-being values are protected from the adverse effects brought about by the presence of exclusion pests.
Advice note *Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Biosecurity Act 1993.*	

6.2 Pests to be managed under the eradication programme

There are a number of pests in the Southland region where infestation is restricted to a small number of sites and/or their density levels are low enough to make eradication possible within the proposed 10-year duration of the Plan. These pests are listed in Table 8 below.

Table 8: Pests to be managed under the eradication programme

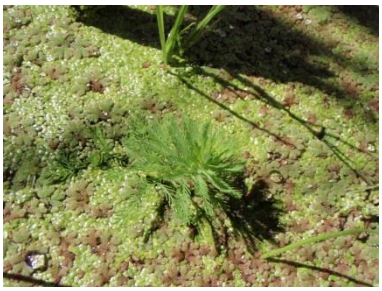
Common Names	Scientific Name	Area
Plants		
Boxthorn	*Lycium ferocissimum*	All of Southland
Field horsetail	*Equisetum arvense*	All of Southland
German ivy	*Delairea odorata*	All of Southland
Parrots feather	*Myriophyllum aquaticum*	All of Southland
Purple loosestrife	*Lythrum salicaria*	All of Southland
Smilax	*Asparagus asparagoides*	All of Southland
Spartina	*Spartina anglica*	All of Southland

The characteristics of each of these pests proposed to be managed under the eradication programme, and adverse effects that they pose, are set out in Table 9 below.

Table 9: Characteristics and threats of pests in the eradication programme

Description and adverse effects	
Plants	
Boxthorn is a dense, spiny evergreen shrub with white flowers and scarlet berries growing up to six metres tall, with many stems emanating from ground level. The plant is particularly invasive in coastal areas on sand	

Description and adverse effects	
dunes, cliffs, and islands. It over-tops native plant species and can become the only woody plant species at a site. Seabirds can become entangled in its tough spiny thorns, often causing their deaths. For these reasons boxthorn is included in the SRPMP. The Department of Conservation is working towards eradication of boxthorn on Public Conservation Land in Southland.	
Field horsetail is an herbaceous perennial plant with deep growing rhizomes and tends to grow in damp places. Fertile (reproductive) stems are produced in early spring and are non-photosynthetic. They are whitish to light brown, hollow, cylindrical, jointed, unbranched, leafless, about 8 millimetres in diameter and 15-20 centimetres long. Tips of fertile stems end in a yellowish to brownish cone (strobilus) about 12-30 millimetres long, which produces spores. Once spores have been produced, fertile stems wither and die, usually in early summer. Sterile (vegetative) stems start to grow after the fertile stems have wilted, and persist through summer until the first autumn frosts. These stems are green, either erect or somewhat prostrate, 15-60 centimetres tall and composed of slender, grooved, hollow joints, which are 1 to 1.5 millimetres in diameter. Sterile stems look like miniature pine trees with their plume-like branches. Their appearance also explains the plant's common name of 'horsetail'. The plant is toxic to horses, sheep and cattle, according to overseas reports, and its high silica content can adversely affect teeth and gums of grazing stock. It can cause milk taint when present in dairy pastures. While it can reduce crop yields drastically, if present in sufficient quantity, it will not compete well with healthy pasture. Invasive in wet places, it forms dense stands which can prevent the regeneration of other species, block waterways, contributing to flooding and siltation. For these reasons field horsetail is included in the SRPMP.	
German ivy is a scrambling perennial vine growing up to more than three metres high. It has thin, broad leaves and produces yellow flowers in dense clusters, from May to October.	

Description and adverse effects	
The plant is invasive in a wide range of habitats, including coastal areas and lowland forest margins, shrubland, roadsides, quarries, swamps and other damp areas. It smothers small trees and lower vegetation. Once present at a site it often leads to the invasion of more aggressive plant species. For these reasons German ivy is included in the SRPMP.	
Parrots feather is a bottom-rooted, perennial floating and emergent plant with stolons, fibrous roots, and stems (five millimetres diameter) that grow to two metres long (three to four metres in flowing water) emerging 10 centimetres above water and rooting at lower nodes, with submerged parts becoming bare. Feather-like blue-green leaves (25 to 45 x 7 to 15 millimetres) are in whorls of five or six, and are each divided into 25 to 30 leaflets (seven millimetres long). From September to February, minute female flowers are produced, but no seed is set in New Zealand. It is spread by flowing water, and new water bodies are infested by fragments spread by boats and trailers, eel nets, diggers, and people 'liberating' fish. The plant forms dense mats, shading out existing native species and preventing new seedlings of native species from establishing, and replaces species that usually grow on the margins of waterbodies. Large clumps dislodge, causing flooding, and rotting vegetation stagnates water, killing fauna and flora. For these reasons parrots feather is included in the SRPMP.	 *Note: This is a freshwater pest*
Purple loosestrife is an erect, hairy summer-green perennial herb. It has many-branched stems that grow to one to two metres tall, are pink at the base and die off in winter. The leaves occur opposite each other along the stems. Its flower head is a terminal spike 20 to 25 centimetres long with many purple-magenta flowers found from December to February. Mature plants are capable of producing more than two million seeds in one growing season. The plant is invasive along the margins of wetlands, lakesides, streams, ditches and other damp areas. It can form large impenetrable stands that exclude all other species. It destroys wetland habitat for fish and bird	 *Note: This is a marginal aquatic pest that may be found in freshwater*

Description and adverse effects	
species and can cause blockages to waterways which can contribute to flooding. The Global Invasive Species Database lists purple loosestrife in the worse 100 most invasive species worldwide. Climex models for purple loosestrife in Southland show the climate is suitable for the spread of this plant here. Purple loosestrife invades a variety of wetland habitats, including marshes, river and stream riparian, pond edges, lakes, roadside ditches, and reservoirs. This plant forms dense thickets, outcompetes and replaces native grasses, sedges and other flowering plants that provide a higher quality food source and habitat for wildlife. It destroys wetland habitat for fish and bird species and can cause blockages, which can contribute to flooding. It is only known at a few low incidence sites, mainly in domestic gardens. For these reasons purple loosestrife is included in the SRPMP.	
Smilax is a scrambling, slightly woody perennial vine. It has slender wiry stems that can climb up to three metres high. The leaves are an ovalish, flat shape, with a pointed tip and have approximately seven veins, evident on the upper surface. Small greenish-white flowers appear in July and August, followed by round red berries. The plant produces tubers near the surface that allow it to survive and re-sprout after stems have been cut or the foliage sprayed with herbicide. Smilax smothers low growing plants and seedlings, usually in low canopy habitats such as coastal and estuarine areas, roadsides, hedgerows and bare sites. For these reasons smilax is included in the SRPMP.	
Spartina is a perennial estuarine sward grass, commonly one metre tall and growing in shallow saltwater. It has stiff, upright stems, originating from thick rhizomes. The stems have broad, pointed leaves from their base to the top, where several long fingers contain the seed. New growth occurs from either root pieces or seed. Shoots rapidly sprout from underground rhizomes, while the seed falls into the water and floats away. Colonies of spartina form dense grassy clumps and these can spread laterally from underground rhizomes,	

Description and adverse effects	
or by overground side shoots (tillers). Within the estuarine area, vast meadows can form causing a build-up of sediment. This can increase the risk of flooding and also alter the habitat for wading bird species and other estuarine flora and fauna. For these reasons spartina is included in the SRPMP. The Department of Conservation is working towards eradication of spartina in Southland.	

The management aims and the range of methods to be used to accomplish those aims for the pests to be eradicated are set out in Table 10 below. An explanation of alternatives means is also provided.

Table 10: Aims and means of achievement for the eradication programme

Objective, Principal Measures and Rules	
Plan Objective 2	**Principal measures to be used**
Within 10 years of the commencement of the Plan, reduce all infestations of pests listed in Table 8 to zero levels within the Southland region to minimise or prevent adverse effects on economic well-being and the environment.	Apropriate measures drawn from the suite of activities listed under **requirement to act, council inspection, service delivery, advocacy and education** described in Section 5.3 of the SRPMP will be used to by Environment Southland to achieve Objective 2. ***Note:*** *Environment Southland or other orgnisations will undertake control work unless an owner and/or occupier agrees in writing with Environment Southland to carry out the control work themselves.*
Plan Rule 4	**Explanation to Rule**
Any person who detects or suspects the presence of any pest listed in Table 8 within the Southland region, must immediately report the pest's presence and location to Environment Southland.	The reason for this rule is to assist Environment Southland in detecting the presence of any pest targeted for eradication within the Southland region.
Plan Rule 5	**Explanation to Rule**
No person other than an authorised person shall possess, keep, hold, enclose or otherwise harbour any pest listed in Table 8. A breach of this rule creates an offence under Section 154N (19) of the Act.	The reason for this rule is to prevent humans actively attempting to establish eradication pest populations within the Southland region. Exemptions to the rule will cater for case-by-case applications if appropriate. It is in the long-term interests of the region's inhabitants that biodiversity and economic

Objective, Principal Measures and Rules	
	well-being values are protected from the adverse effects brought about by the presence of eradication pests.
Advice note *Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Biosecurity Act 1993.*	

6.3 Pests to be managed under the progressive containment programme

There are a number of pests that are well established in the Southland region, but their present infestation levels are still low enough for those levels to be reduced through the progressive containment programme. In some cases, they will result in fewer sites infested or in others the overall density of the pest will reduce over the proposed 10-year duration period. These pests are listed in Table 11 below.

Table 11: Pests to be managed under the progressive containment programme

Common Names	Scientific Name	Area
Animal		
Bengal cat	*Felis catus var. Bengal*	All of Southland
Plants		
Bomarea	*Bomarea multiflora*	All of Southland
Buddleja	*Buddleja davidii*	All of Southland
Contorta (lodgepole) pine	*Pinus contorta*	All of Southland
Cotoneaster	*Cotoneaster franchetii, C. glaucophyllus, C. simonsii*	Containment Maps 1a and 1b (Appendix 1)
Darwin's barberry	*Berberis darwinii*	Containment Maps 2a, 2b and 2c (Appendix 1)
Giant buttercup	*Ranunculus acris*	All of Southland
Heather	*Calluna vulgaris*	All of Southland
Japanese honeysuckle	*Lonicera japonica*	All of Southland
Lagarosiphon	*Lagarosiphon major*	Containment Map 3 (Appendix 1)
Mountain pine	*Pinus mugo*	All of Southland
Old man's beard	*Clematis vitalba*	All of Southland
Reed sweet grass	*Glyceria maxima*	All of Southland
Rough horsetail	*Equisetum hyemale*	All of Southland
Siberian lyme grass	*Leymus racemosus*	All of Southland
Wilding conifers	Wilding conifers+	Southland Wilding Conifer Management Area Map 4 (Appendix 1)

Marine		
Undaria	*Undaria pinnatifida*	All of Southland

+ see Table 3 for list

The characteristics of each of these pests proposed to be managed under the progressive containment programme, and adverse effects that they pose, are set out in Table 12 below.

Table 12: Characteristics and threats of pests in the progressive containment programme

Description and adverse effects	
Animal	
Bengal cats are an artificially created hybrid (F5) between the Asian leopard cat and the domestic cat. It was first introduced into New Zealand before 1998 when import restrictions were put in place. The hybrid is a relatively large (4 to 9 kilograms), strong, agile animal with distinctive spotted markings which has, in recent times, made it a popular cat breed. It is well documented that some Bengal cats have behaviours which make them unattractive as pets and increases the risk of owners wishing to get rid of them at worst by release into the wild. There has been wide concern expressed internationally and in New Zealand the 'wild genetic' traits in the hybrid will make it a very successful and dangerous predator if it became established in the wild and interbred with the feral cat population. The wild ancestor Leopard cats are carnivorous, feeding on a variety of small prey including mammals, lizards, amphibians, birds and insects. In most parts of their range, small rodents such as rats and mice form the major part of their diet, which is often supplemented with grass, eggs, poultry, and aquatic prey. Bengal cats may predate on a wider range of native species than feral cats because of their larger size. For example, adult kiwi and weka would be at risk from a cat of this size. They are active hunters, dispatching their prey with a rapid pounce and bite. Unlike many other small cats, they do not 'play' with their food, maintaining a tight grip with their claws until the animal is dead. This may be related to the relatively high proportion of birds in their diet, which are more likely to escape when released than are rodents. While there is no direct evidence that Bengal cats or other hybrid cats have become wildlife predators in New Zealand or elsewhere their strong hunting traits, their size and intelligence suggests that they could become so if allowed.	

Description and adverse effects	
In the last 150 years there have been numerous biosecurity mistakes made in New Zealand through introduction of exotic animals which established in the wild and have devastated native wild life, e.g. mustelids, rodents, possums, cats. On this basis there is a strong rationale for continuing to maintain a precautionary approach here in Southland. Bengal cats may predate on a wider range of native species than feral cats because of their larger size, e.g. adult kiwi and weka. It is also possible that Bengal cats could also predate small farmed livestock such as lambs and chickens. Accordingly there would be at significant risk from a cat of this size and its adverse effects on matters mentioned in s54a Biosecurity Act. For these reasons Bengal cat is included in the SRPMP.	
Plants	
Bomarea is a shade tolerant, multi-stemmed vine that arises from short underground rhizomes, which bear numerous tubers. The flowers are clumped in a dense pendulous bunch of 15 to 20. The flowers are reddish on the outside and yellow with red spots on the inside, and develop into capsules about two centimetres in diameter. When these are ripe they split open to reveal bright fleshy orange seeds, which can be dispersed over long distances by birds. An ornamental garden escapee, it invades alongside streams and river banks, shrublands, forest edges, forest remnants and intact low canopy forest. The vines grow into the forest canopy, forming large masses, which overtop and smother supporting trees. Large infestations can alter light levels in forests, kill mature trees and prevent seedlings from establishing. For these reasons bomarea is included in the SRPMP.	
Buddleja is a multi-stemmed shrub growing to three metres tall. It has willow-shaped leaves that are white or grey on the underside. The flower head is a distinctive, dense, cone-shaped panicle with small fragrant purple or white flowers found from December to February. It forms dense, self-replacing thickets along forest margins, areas of revegetation, riverbeds and plantation forests (especially following disturbance) and waste ground. In riverbeds, buddleja can cause a build-up of material and increase the risk of flooding.	

Description and adverse effects	
For these reasons buddleja is included in the SRPMP.	
Contorta (lodgepole) pine is a small to medium sized pine tree, usually with twisted branches and paired needles. It is monoecious (both female and male parts on the same tree). Trees mature at approximately five years of age, though peak seed production occurs after eight to ten years. The seed cones take 15 months to mature and can contain up to 300,000 seeds/kilogram. For these reasons contorta pine is included in the SRPMP.	
Mountain pine is a small-to-medium sized, multi-stemmed tree with dark brownish-grey bark, which peels in small thin flakes. The foliage is often dense with needle-like leaves occurring in bundles of two. The needles are dark green, rigid and curved. The seeds from both species are very small and light and are capable of spreading long distances with the wind. As a result, wilding offspring of both species are capable of rapid invasion of land with low grazing intensity. This leads to significant impacts on native ecosystems, particularly those with low-stature vegetation[4]. Existing plantings of these two species acts as seed sources for ongoing wilding spread. It can be difficult to successfully control or manage the spread of wilding conifers over the long-term if the seed source is not removed or appropriately managed and contained. These two conifers have very limited commercial value. It is therefore appropriate to specify these organisms as pests in their own right. For these reasons mountain pine is included in the SRPMP.	

[4] Indigenous ecosystems at particular risk from wilding conifer invasion include: tussock and other indigenous grasslands, alpine ecosystems, subalpine and dryland scrub and shrublands, frost-flats, wetlands, turf communities, geothermal areas, dunelands, ultramafic/serpentine areas, rockfields and herbfields, riparian areas, coastal margins, bluffs and cliffs.

Description and adverse effects	
Cotoneasters are long-lived shrubs that grow to three to four metres high, producing clusters of small flowers over summer that are white or pinkish in colour. These are followed by clusters of fruit that vary in colour from scarlet to orange-red. They invade a wide range of habitats including forest margins and gaps, coastal areas and roadsides. The plants will out-compete native shrub species, form dense understorey stands and completely prevent other species from growing. For these reasons cotoneaster is included in the SRPMP.	
Darwin's barberry is an evergreen, spiny, yellow-wooded shrub (less than four metres tall) with woody and densely hairy stems that have tough, five-pronged, needle-sharp spines. Hairless, glossy, dark green leaves (10-30 by 5-15 millimetres) are usually spiny-serrated along edges. Hanging clusters (seven centimetres long) of deep orange-yellow flowers (five to seven millimetres diameter) appear from July to February followed by oval purplish-black berries (five to seven millimetres diameter) with a bluish-white surface. This long-lived plant tolerates moderate to cold temperatures, damp to dry conditions, high wind, salt, shade, damage, grazing (not browsed), and a range of soils. Birds and possibly possums eat the berries and subsequently spread the seeds. Berries are also occasionally spread by soil and water movement. It is capable of invading pasture, disturbed forest, shrubland, tussockland, along roadsides and other sparsely vegetated sites. The plant forms dense colonies that replace existing vegetation and prevent the establishment of desirable plants. Darwin's barberry will also establish under canopy in forest and shrubland. It can grow more rapidly than native species when suitable conditions arise, allowing it to dominate sites where it establishes. For these reasons Darwin's barberry is included in the SRPMP.	

Description and adverse effects	
Giant buttercup is a perennial plant up to a metre tall with multiple branches. Its leaves are highly variable in size (can be as big as an outstretched hand), hairy and the three primary lobes are highly dissected. Yellow glossy flowers (15 to 25 millimetres across) with five petals appearing mainly between November and April. The plant has a short rhizome (horizontal underground stem up to about 100 millimetres long) with fibrous remains of old leaves, axillary buds and fleshy roots. Genetically, it is highly diverse with up to six different chloroplast cytotypes from Europe coexisting in swamp and wasteland areas, river flats and dairy pastures. Giant buttercup is very free seeding, with the seeds being spread by water, animals and in silage and hay. Sheep will eat it, however the plant is seasonably unpalatable to cattle. It therefore has the potential to quickly overwhelm other pasture species in dairying areas thereby reducing pasture and dairy production. Once well established in pasture, the plant is costly and difficult to control. In dairy farming in New Zealand it is estimated to reduce milk solid revenue by $150 million annually. It can also out-compete desirable pasture species. Giant buttercup is known to be established on farms and roadside verges in four localised areas of Southland. It has probably been present there for several decades but has the potential to spread onto dairy farms throughout the region if allowed. For these reasons giant buttercup is included in the SRPMP.	
Heather is a bushy, evergreen tough shrub (less than 90 centimetres tall) with woody, wiry stems and densely hairy young shoots becoming hairless as they mature. Its long dark green to brown leaves (1.5-3.5 millimetres long) are in opposite pairs on the stem, overlapping in four vertical rows. Bell-shaped, pink to pale purple flowers (two to four millimetres long) on narrow, leafy, elongated, upright clusters (two to nine centimetres long) appear from December to March and are followed by tiny, round, hairy seed capsules.	

Description and adverse effects	
The plant forms dense stands, suckers and seeds profusely, and is faster growing than its subalpine competitors. It tolerates cold, high to low rainfall, semi-shade, and poor soils, but is intolerant of heavy shade. Suckers are spread in soil and seed is spread by wind, water and soil movement. Heather is capable of rapidly forming dense stands in low-growing habitats in shrubland, short tussockland, herbfield, bare land, montane wetlands, and riverbeds. As a result, heather can prevent the establishment of native species. For these reasons heather is included in the SRPMP.	
Japanese honeysuckle is an evergreen or semi-evergreen climber with a smothering growth habit. Its leaves occur in opposite pairs with tubular, sweetly scented white-yellow flowers. The plant was originally introduced as an ornamental hedging plant and is found in many gardens in Southland. The plant invades disturbed forest and forest margins, shrubland, coastal areas and river margins. Japanese honeysuckle grows rapidly smothering shrub and small tree species. It blocks light, breaks branches and its presence can lead to other pest plant species invading an area. For these reasons Japanese honeysuckle is included in the SRPMP.	
Lagarosiphon is a rhizomatous perennial freshwater herb. The plant has spiralled leaves on a much-branched stem. The stems can be up to five metres long and form large interwoven mats below the water surface in depths to six and a half metres. It was introduced from southern Africa as an aquarium plant and grows wholly submerged in fresh water ponds, lakes and slow moving streams, with silty or sandy bottom mud. Lagarosiphon forms vast, deep meadows in still and slow moving water that shade out other species. Large clumps can dislodge, causing blockages in streams and outfalls that lead to flooding. It can restrict recreational activities such as boating and fishing on affected water bodies.	 *Note: This is a freshwater pest*

Description and adverse effects	
Lagarosiphon is known in a small number of small waterways in the lower plains. Initial infestations are thought to have resulted from releasing pet fish into waterways including 'oxygen weed'. A localised infestation in ponds and oxbows in the Ōreti River eel fishing may be related to eel fishing activities there. For these reasons lagarosiphon is included in the SRPMP.	
Old man's beard is a deciduous, woody, perennial climber that can grow up to 25 metres in height. It has conspicuous small fragrant flowers from December to May, followed by silky seed balls. Individual plants reach maturity in four to five years and have a life span of more than 30 years. Old man's beard invades forest margins, disturbed bush, shrubland, riverbeds, cliffs, hedgerows and gardens. It grows quickly and produces heavy permanent tangled masses of vines that kill host plants and prevent the regeneration of other species. Each plant produces a prolific amount of viable seed, estimated to be more than 10,000 seeds per square metre, which are dispersed primarily by wind and water. For these reasons Old man's beard is included in the SRPMP.	
Reed sweet grass is an aggressive perennial mat-forming grass that grows to almost two metres tall. It has fibrous roots, rhizomes and an erect or lax stem. Soft, light green leaves (30-60 x 2 centimetres) have a membranous ligule. Its much-branched flowerhead has numerous spikelets containing many seeds. The plant grass establishes along the margins of lakes, streams, ditches, and other waterways. It can also form dense mats on top of the water as well as survive and persist in damp pasture areas. Reed sweet grass replaces nearly all other species where it establishes and degrades the habitat for aquatic fauna and flora. The grass can cause a build-up of silt and other material leading to an increase in flooding. In wetland areas, cattle are attracted to it for grazing, causing further degradation in such areas.	 *Note: This is a marginal aquatic pest that may be found in freshwater*

Description and adverse effects	
For these reasons reed sweet grass is included in the SRPMP.	
Rough horsetail is an erect, colony-forming, summer-green perennial, growing to two metres tall with extensive, deep, freely branching rhizomes. It has ridged, hollow stems that occasionally branch and feel hard and rough. The stems are jointed and break easily at this point. Leaves are reduced to toothed sheaths that encircle the joints along the stems, with a black ring at the base. The stems have a distinctive black collar at the joints. Extensive underground rhizomes (underground stems). Spores are produced in cone-like structures on fertile stems (rather than flowers and seed heads) giving it a look of a strange asparagus spear. It is sometimes kept as an ornamental plant due to its unusual appearance. This plant prefers moist areas such as gravel areas and pond/lake margins but once it is well established it will adapt to a wide range of conditions. It can even be found growing through the cracks in concrete. Rough horsetail spreads rapidly, re-sprouting from underground stems, and displacing desirable plant species once established in an area. It is resistant to most herbicides and underground rhizomes make it hard to control. The plant is capable of forming pure stands in a wide range of damp habitats, preventing the seedlings of native species from establishing. It blocks and alters watercourses, causing flooding. Underground rhizomes are spread by movement of soil or through deliberate planting. For these reasons rough horsetail is included in the SRPMP.	
Siberian lyme grass is a perennial grass with stout rhizomes and very robust tufts, growing up to 1.5 metres tall. The leaves are strongly ribbed and are almost entirely without hairs. It was introduced into New Zealand for agriculture and was first reported growing outside cultivation in 1895. The plant invades coastal dunes, foreshore areas and other sandy places forming a dense monoculture, completely replacing desirable species in these areas.	

Description and adverse effects	
For these reasons Siberian lyme grass is included in the SRPMP.	
Wilding conifers can have significant impacts on native ecosystems, particularly those with low-stature vegetation[5]. Wilding conifers grow faster and taller than low-stature native plants and so can shade out many of these species. Where there is dense wilding conifer growth, this can lead to local extinction of native plant communities, the drying of wetlands and riparian areas, and resulting impacts on native fauna through the loss of habitat. Soil and soil fauna are also altered when wilding conifers replace native ecosystems. Most wilding conifer species do not pose a significant threat to established native forests, however Douglas fir has a higher shade tolerance than other introduced conifer species and consequently wilding Douglas fir is able to spread into shrublands, regenerating native forest and mature forest where there are canopy gaps and a relatively sparse understorey. Wilding conifers can affect amenity and landscape values, particularly where the valued landscapes are characterised by extensive low-stature vegetation such as high country tussock grasslands. In some instances these landscapes are important for tourism and large-scale landscape changes could impact on this. Dense wilding conifer spread can lead to the blocking and/or changing of valued views and vistas, and can impede access to, and enjoyment of, recreational areas. In areas where there is long-term, seasonal soil moisture deficits, dense wilding conifers can contribute to reductions in surface water flows, potentially impacting on water availability and aquatic ecosystems. Wilding conifers can also increase the risk posed by wild fires. The impacts outlined above can adversely affect Māori cultural values in some locations through: physical changes to culturally important landscapes, sites and landforms; impacts on mahinga kai; and impacts on	

[5] Indigenous ecosystems at particular risk from wilding conifer invasion include: tussock and other indigenous grasslands, alpine ecosystems, subalpine and dryland scrub and shrublands, frost-flats, wetlands, turf communities, geothermal areas, dunelands, ultramafic/serpentine areas, rockfields and herbfields, riparian areas, coastal margins, bluffs and cliffs.

Description and adverse effects	
the mauri of streams and wetlands. In areas of extensive pastoral farming, wilding conifer infestations reduce available grazing land and limit future land use options due to the high costs of control. For further information, particularly in relation to the national overview of wilding conifer management, see *Right tree in the right place* at wildingconifer@mpi.govt.nz. The potential impact of wilding conifer invasion is very high over large tracts of vulnerable hill and high country land in northern Southland (approx. 660,000 ha). Much of this is managed for conservation purposes with the balance under pastoral lease. If nothing is done wilding conifers spreading from a range of sources including recently established commercial forests, farm forestry, wood lots, shelterbelts and amenity plantings in highly vulnerable areas of the region will impose irreversible changes to landscapes and indigenous ecosystems resulting in major environmental, economic, social and cultural costs. For these reasons wilding conifer is included in the SRPMP.	
Marine	
Undaria is a golden-brown seaweed with a central midrib, divided frond and a fleshy, frilly reproductive structure at the base of the seaweed. These characteristics help differentiate *Undaria* from native seaweed species. *Undaria* was accidentally introduced into New Zealand in the early 1980s and has now spread to many parts of the coastline, including Southland. It is known to occur in parts of Stewart Island/Rakiura, Waikawa, in Bluff harbour, and has recently established in Breaksea Sound where it is closely monitored. *Undaria* is a winter annual laminarian kelp that first appears in early spring in its native home range. *Undaria* has a high growth rate with sporophytes reaching maturity in 40 to 50 days with the potential to release up to 700 million zoospores. With its high growth and reproductive output, and the ability to tolerate wide ranging temperatures, substrates and sheltered to exposed conditions *Undaria* is a hardy	

Description and adverse effects	
invasive species. *Undaria* can substantially modify natural habitats impacting on the native ecology of those areas. Invasion can result in an addition to canopy cover, or it can result in dense mono-specific stands of *Undaria*. These dense stands can reduce the presence and diversity of smaller understorey algal species and out-compete marine macro algae canopy species. For the above reasons *Undaria* is included in the SRPMP.	

The management aims and the range of methods to be used to accomplish those aims for the pests to be progressively contained are set out in Table 13 below. An explanation of alternatives means is also provided.

Table 13: Aim and means of achievement for pests in the progressive containment programme

Objective, Principal Measures and Rules	
Plan Objective 3	**Principal measures to be used**
Over the duration of the Plan, progressively contain the Bengal cat population in the Southland region to non-breeding animals to minimise or prevent adverse effects on the environment.	Apropriate measures drawn from the suite of activities listed under **requirement to act, council inspection, advocacy and education** described in Section 5.3 of the SRPMP will be used to by Environment Southland to achieve Objectives 3, 4 and 5.
Plan Rule 6	**Explanation of Rule**
No person other than an authorised person shall possess, keep, hold, enclose or otherwise harbour any Bengal cat within the Southland region. A breach of this rule creates an offence under Section 154N (19) of the Act.	The purpose of this rule is to prevent humans possessing animals whose escape into the wild would lead to the establishment of breeding populations capable of causing adverse environmental effects. Exemptions to this will be considered by Environment Southland where it can be demonstrated that any animal has been de-sexed and micro-chipped for identification and the person is not living on, or travelling to, Stewart Island/Rakiura or any other offshore island.
Plan Rule 7	**Explanation of Rule**
Any person who detects or suspects the presence of any Bengal cat within the Southland region, must immediately report the pest's presence and location to	The reason for this rule is to assist Environment Southland in detecting the presence of any Bengal cats in order to help Environment Southland to effectively

Objective, Principal Measures and Rules	
Environment Southland.	undertake the progressive containment programme for Bengal cats.

Advice Notes

1. *Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Biosecurity Act 1993.*
2. *A person may make an application to the Environment Southland for an exemption from Rule 6 under Section 78 of the Biosecurity Act 1993. This section should be referred to in full in the Act.*

Plan Objective 4	Principal measures to be used
Over the duration of the Plan, progressively contain and reduce the geographic distribution or extent of bomarea, giant buttercup, heather, Japanese honeysuckle, lagarosiphon, Old man's beard, reed sweet grass and Siberian lyme grass at known sites within the Southland region to minimise or prevent adverse effects on economic well-being and the environment.	Apropriate measures drawn from the suite of activities listed under **requirement to act, council inspection, service delivery, advocacy and education** described in Section 5.3 of the SRPMP will be used to by Environment Southland to achieve Objectives 4, 5 and 6. ***Notes:*** 1. *Environment Southland may undertake initial control work unless an owner and/or occupier agrees in writing with Environment Southland to carry out the control work themselves.* 2. *Bomarea, giant buttercup, heather, Japanese honeysuckle, Old man's beard, reed sweet grass and Siberian lyme grass are included as pests in order for Environment Southland to use those statutory powers of Part 6 of the Act as shown in Table 25, where necessary, to help implement the Plan.*
Plan Objective 5	
Over the duration of the Plan progressively contain cotoneaster to the Cotoneaster containment area (Map 1a - Appendix 1) and progressively contain Darwin's barberry to the Darwin's barberry containment area (Map 2a - Appendix 1), to prevent their establishment in Fiordland and Rakiura National Parks and minimise or prevent adverse effects on economic well-being and the environment.	
Plan Objective 6	
Over the duration of the Plan, progressively contain and reduce the geographic distribution or extent of buddleja and rough horsetail on non-arable land within the Southland region to minimise or prevent adverse effects on economic well-being and the environment.	

Objective, Principal Measures and Rules	
Plan Rule 8	**Explanation of Rule**
Any person who detects or suspects the presence of lagarosiphon outside of the lagarosiphon containment Area (Map 3 – Appendix 1), must immediately report the pest's presence and location to Environment Southland.	The reason for this rule is to assist Environment Southland in detecting the presence of any lagarosiphon in order to help Environment Southland to effectively undertake the progressive containment programme for lagarosiphon.
Plan Rule 9	**Explanation of Rule**
Within the Cotoneaster Fiordland National Park Buffer (Map 1b - Appendix 1) owners and/or occupiers shall, on receipt of a written direction from an Authorised Person, eliminate all cotoneaster infestations on the land they occupy. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed. A breach of this rule creates an offence under Section 154N (19) of the Act.	The reason for this rule is to maintain land that is clear or being cleared of cotoneaster plants from being infested or re-infested. Environment Southland will have undertaken initial clearance control of cotoneaster plants prior to an owner and/or occupier receiving a written direction from an Authorised Person.
Plan Rule 10	**Explanation of Rule**
Within the Darwin's barberry Fiordland and Rakiura National Park Buffers (Maps 2b and 2c - Appendix 1) owners and/or occupiers shall, on receipt of a written direction from an Authorised Person, eliminate all Darwin's barberry infestations on the land they occupy. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed. A breach of this rule creates an offence under Section 154N (19) of the Act.	The reason for this rule is to maintain land that is clear or being cleared of Darwin's barberry plants from being re-infested. Environment Southland will have undertaken initial clearance control of Darwin's barberry plants prior to an owner and/or occupier receiving a written direction from an Authorised Person. Land occupiers on Stewart Island/Rakiura will be expected to co-operate with any organised control programme* which includes Darwin's Barberry. If a land occupier does not wish to cooperate with the control programme the land occupier must agree in writing with Environment Southland to carry out the control work themselves. Otherwise, control will be undertaken by Environment Southland. **Organised control programmes include those managed by and/or funded by the Department of Conservation.*

Objective, Principal Measures and Rules	
Plan Rule 11	**Explanation of Rule**
Owners and/or occupiers within the Southland region shall, on receipt of a written direction from an Authorised Person, eliminate all buddleja and rough horsetail on the non-arable land they occupy. For the purpose of this Rule: • eliminate means the permanent preclusion of the plant's ability to set viable seed; and • non-arable land means land that cannot be cultivated by a wheeled vehicle. A breach of this rule creates an offence under Section 154N (19) of the Act.	The reason for this rule is to maintain land that is clear or being cleared of buddleja or rough horsetail plants from being re-infested. Environment Southland will have undertaken initial clearance control of buddleja and rough horsetail plants prior to an owner and/or occupier receiving a written direction from an Authorised Person.
Advice note *Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Biosecurity Act 1993.*	
Plan Objective 7	**Principal measures to be used**
Over the duration of the Plan: (i) progressively contain and reduce the geographic distribution or extent of *Undaria* within Southland to protect the Fiordland Marine Area (Map 5a – Appendix 1); (ii) prevent any further *Undaria* infestations within the Southland region; to minimise or prevent adverse effects on the marine environment.	Apropriate measures drawn from the suite of activities listed under **requirement to act, council inspection, service delivery, advocacy and education** described in Section 5.3 of the SRPMP will be used to by Environment Southland to achieve Objective 7.
Plan Rule 12	**Explanation of Rule**
Any person who detects or suspects the presence of *Undaria* outside of known *Undaria* sites (Map 5b – Appendix 1), must immediately report the pest's presence and location to Environment Southland. Known sites include: • Breaksea Sound; • Bluff; • Waipapa Point; • Ruapuke Island;	The reason for this rule is to assist Environment Southland in detecting the presence of any *Undaria* in order to help Environment Southland to effectively undertake the progressive containment programme for *Undaria*.

Objective, Principal Measures and Rules	
• Oban; • Patersons Inlet; • Big Glory Bay; • Port Adventure.	
Plan Rule 13	**Explanation of Rule**
No person other than an authorised person shall possess, keep, hold, enclose or otherwise harbour *Undaria* within the Southland region. Vessels solely operating inside the Southern *Undaria* Exemption Area and the Breaksea Sound *Undaria* Exemption Area (Map 5c – Appendix 1) are exempt from this rule. Vessels must be free of *Undaria* when they leave the Southern *Undaria* Exemption Area and the Breaksea Sound *Undaria* Exemption Area. All marine gear and equipment, including but not limited to lobster pots, mooring lines and dive gear, must be free of *Undaria* when it leaves Southern *Undaria* Exemption Area and the Breaksea Sound *Undaria* Exemption Area. All on-board residual seawater collected in the Exemption Area must be treated or discarded within the Southern *Undaria* Exemption Area and the Breaksea Sound *Undaria* Exemption Area. A breach of this rule creates an offence under Section 154N (19) of the Act.	The reason for this rule is to prevent humans actively establishing *Undaria* within the Southland region. Exemptions to the rule will cater for case-by-case applications if appropriate. It is in the long-term interests of the region's inhabitants that biodiversity and economic well-being values are protected from the adverse effects brought about by the presence of *Undaria*.
Advice Notes 1. *Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Biosecurity Act 1993.* 2. *Sections 52 and 53 of the Biosecurity Act apply to the communication, release, spread and propagation of pests present on vehicles or equipment.* 3. *An owner or person in charge of a vessel entering the Fiordland Marine Area is subject to rules relevant to Undaria management under the Fiordland Marine Pathway Management Plan 2017. Those rules should be referred to in full in that document.* 4. *The rules in the Fiordland Marine Regional Pathway Management Plan apply in conjunction with Plan Rules 12 and 13.*	

Objective, Principal Measures and Rules	
Plan Objective 8	**Principal measures to be used**
Over the duration of the Plan, progressively contain and reduce the geographic extent of: (i) contorta and mountain pine within the Southland region; and (ii) wilding conifers[6] within the Southland Wilding Conifer Management Area (see Map 4 - Appendix 1) to minimise adverse effects on economic well-being and the environment. Within the 660,000 hectare SWCHRA, 345,000 hectares of land will be cleared of wilding conifers within 10 years of the commencement of the Plan.	Apropriate measures drawn from the suite of activities listed under **requirement to act, council inspection, advocacy and education** described in Section 5.3 of the SRPMP may be used to by Environment Southland to achieve Objective 8. Objective 8(ii) may also be achieved under The National Wilding Conifer Control Programme – a collaborative funding model for wilding conifer control. Parties to this programme could include the Ministry of Primary Industries, Department of Conservation, Land Information New Zealand, Environment Southland and owners and/or occupiers.
Plan Rule 14	**Explanation of Rule**
Owners and/or occupiers shall, upon receipt of a written direction from an Authorised Person, eliminate all contorta and mountain pine plants from the land they occupy. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to bear cones. A breach of this rule creates an offence under Section 154N (19) of the Act.	The reason for this rule is to maintain land that is clear or being cleared of contorta and mountain pine plants from being re-infested. An owner and/or occupier within the Mid Dome Wilding Tree Programme Area (MDWTPA) shown on (see Map 6 -Appendix 1) are exempt from this rule until such time as the Programme Manager for the MDWTPA has removed all seeding trees from the owner and/or occupier's land.
Plan Rule 15	**Explanation of Rule**
Within the Southland Wilding Conifer Management Area (Map 4 - Appendix 1), owners and/or occupiers shall destroy all wilding conifers on land that they occupy prior to cone bearing, if: (a) the wilding conifers are located on land which has had control operations carried out to destroy wilding conifers from the commencement of the Plan; and (b) the control operations were publicly funded (either in full or in part).	The reason for this rule is to ensure that new infestations of wilding conifers are prevented from re-establishing at sites where wilding have previously been destroyed through publicly funded control operations.

[6] Wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in Table 3 established by natural means, unless it is located within a plantation forest, and does not create any greater risk of wilding conifer spread to adjacent or nearby land than the plantation forest that it is a part of.

Objective, Principal Measures and Rules	
A breach of this Rule creates an offence under Section 154N (19) of the Act.	
Plan Rule 16	**Explanation of Rule**
Note: *This is designated a Good Neighbour Rule.* Within the Southland Wilding Conifer Management Area (Map 4 - Appendix 1) owners and/or occupiers shall destroy all wilding conifers present on land they occupy within 200 m of an adjoining property boundary, prior to cone bearing, where: (a) the owner and/or occupier of the adjoining property has destroyed wilding conifers on their land since 14 June 2019: and/or (b) the owner and/or occupier of the adjoining land is taking reasonable measures to manage wilding conifers on their land, within 200 m of the boundary since 14 June 2019. A breach of this Rule creates an offence under Section 154N (19) of the Act. Reasonable measures to manage may include: • ongoing control operations have been carried out to destroy all cone bearing trees; • regular management and control of young (non-cone bearing) trees such that no tree reaches cone bearing age; • regular monitoring adequate for detecting the pest, and the intent and ability to control the pest if detected.	Over the duration of the Plan, to ensure that the spread of wilding conifers does not cause unreasonable costs to the owners and/or occupiers of adjoining properties, where wilding conifers, contorta, Corsican, Scots, mountain and dwarf mountain pines and/or larch have previously been destroyed through control operations on the adjoining property and the adjoining owner and/or occupier is undertaking active wilding conifer management. Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected owner and/or occupier. The National Policy Direction requires that before a rule can be identified as a good neighbour rule, the Council must be satisfied that the adjacent owner and/or occupier is taking reasonable measures to manage the pest or its impacts.
Plan Rule 17	**Explanation of Rule**
Note: *This is a pest agent rule.* Within the Southland Wilding Control Management Area (Map 4 - Appendix 1) owners and/or occupiers shall, on receipt of written direction from an Authorised Person, destroy any pest agent conifer that is present on land they occupy within 200 m of an adjoining property boundary,	Introduced conifer trees that are capable of helping the spread of wilding conifers present a risk for wilding conifer management. This rule is to ensure that over the duration of the Plan, new infestations, or re-infestation of wilding conifers are prevented at sites where wilding conifers, and/or other planted conifer

Objective, Principal Measures and Rules	
if: (a) wilding conifers and/or other planted conifer species have been destroyed through control operations on the adjoining property, within 200 m of the boundary, since the 14 June 2019; and (b) the control operations were publicly funded (either in full or in part). A breach of this Rule creates an offence under Section 154N(19) of the Act. **Pest agent conifer** means any introduced conifer species that is capable of helping the spread of wilding conifers and is not otherwise specified as a pest in the SRPMP and is not located within a plantation forest. **Plantation forest** means a forest deliberately established for commercial purposes, being at least one hectare of continuous forest cover of forest species that has been planted and has or will be harvested or replanted. **Forest species** means a tree species capable of reaching at least 5 m in height at maturity where it is located.	species have previously been destroyed through publicly funded control operations.
Advice Notes 1. *Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Act.* 2. *A person may make an application to the Council for an exemption from the rules under Section 78 of the Biosecurity Act 1993. This section should be referred to in full in the Act.*	

6.4 Pests to be managed under the sustained control programme

A number of pests that are well established in the Southland region have been subject for some time to eradication or progressive containment aspirations. However, these aspirations have been too difficult to meet. While spread between neighbouring properties of these pests remains the predominant risk, in some cases control within properties is still warranted. The sustained control programme will at least hold populations to current levels over the duration of the SRPMP.

6.5 Pest plants to be managed under the sustained control programme

These are listed in Table 14 below.

Table 14: Pest plants to be included in the sustained control programme (boundary control)

Common Names	Scientific Name	Area
Broom	*Cytisus scoparius*	All of Southland
Gorse	*Ulex europaeus*	All of Southland
Nodding thistle	*Carduus nutans*	All of Southland
Ragwort	*Jacobaea vulgaris*	All of Southland

Including the above pests in the SRPMP arises primarily because of the likely lack of control by individuals leading to the pests spilling across property boundaries – an externality effect.

The characteristics of each pest proposed to be managed under the sustained control programme, and adverse effects that they pose, are set out in Table 15 below.

Table 15: Characteristics and threats of pests in the sustained control programme (boundary control)

Description and adverse effects	
Broom is a woody deciduous shrub, growing up to three metres tall, with small narrow leaves, in threes, on ridged green stems. It is easily recognisable in spring by its bright yellow flowers that develop into pods up to six centimetres long. These pods contain seeds, initially green but turning black as the pod ripens. Summer heat causes the pods to explode, dispersing the seeds several metres onto adjacent ground. It is present across most available habitats in the Southland region. The plant forms almost pure stands where it establishes, dominating sites, reducing the amount of grazing available to stock and inhibiting the recruitment of desirable species, in a wide range of habitats. In urban areas, broom establishes on vacant land harbouring pest animals such as rats and possums. It also contributes to a build-up of rubbish, acts as a fuel load for fire and is regarded as a general nuisance, particularly by those living close by. For these reasons broom is included in the SRPMP.	

Description and adverse effects	
Gorse is a deep rooted, woody, perennial legume that grows up to four metres tall. It has densely spined branches and bright yellow flowers. It is present across most available habitats, ranging from sea level up to 1,000 masl in the Southland region. The plant forms almost pure stands where it establishes, dominating sites, reducing the amount of grazing available to stock and inhibiting the recruitment of desirable species in a wide range of habitats. In urban areas it establishes on vacant land, harbouring pest animals such as rats and possums. Also, it contributes to a build-up of rubbish, acts as a fuel load for fire, and is regarded as a general nuisance, particularly by those living close by. For these reasons gorse is included in the SRPMP.	
Nodding thistle is an annual or biennial thistle that grows from an over-wintering rosette. It has erect flowering stems growing up to 1.5 metres high bearing large crimson flower heads that droop or "nod" when mature. The plant grows in most places across Southland. It can be in pasture, riverbeds and along roadsides, but prefers sunny, free-draining, dry sites. A single mature plant is capable of producing up to 10,000 seeds. It is not readily grazed because of its spiny foliage. Single rosettes can occupy an area greater than one metre, so large infestations of nodding thistle can seriously reduce the stock carrying capacity of affected pasture. For these reasons nodding thistle is included in the SRPMP.	
Ragwort is an erect biennial or perennial herb that is commonly 45-60 centimetres tall, but can grow to almost two metres high. It produces bright yellow flowers in clusters, from November to April. The plant is toxic to grazing animals, directly affecting the liver by increasing its ability to accumulate copper. However, animal deaths from ragwort poisoning are not common, as cattle, deer and horses selectively avoid grazing it. Sheep will eat ragwort without any apparent adverse effects, unless they are continually exposed to	

Description and adverse effects	
it in large quantities, or if they are not used to feeding on it. It can dominate pasture once established, almost completely excluding other pasture species in the worst instances, and significantly reducing the amount of grazing available to stock. Also, the plant is invasive in riverbeds, disturbed forest and shrubland, coastal areas, bare land and other short-stature vegetation types. It forms dense stands in these areas as it does in pasture. However, it usually disappears when a canopy forms, which decreases light levels reaching the ground layer. For these reasons ragwort is included in the SRPMP.	

The management aims and the range of methods to be used to accomplish those aims for the pests to be sustainably controlled are set out in Table 16 below.

Table 16: Aims and means of achievement for pests under the sustained control programme (boundary control)

Objective, Principal Measures and Rules	
Plan Objective 9	**Principal measures to be used**
Over the duration of the Plan, sustainably control the pests in Table 15 within specified distances of property boundaries throughout the Southland region to prevent their spread in order to minimise adverse effects on economic and environmental values.	Apropriate measures drawn from the suite of activities listed under **requirement to act, council inspection, advocacy and education** described in Section 5.3 of the SRPMP will be used to by Environment Southland to achieve Objective 9.
Plan Rule 18	**Explanation of Rule**
Note: *This is designated a Good Neighbour Rule.* An owner and/or occupier in the Southland region shall, on receipt of a written direction from an Authorised Person, eliminate broom infestations on their land within 10 metres of the adjoining property boundary where the owner and/or occupier of the adjoining property is eliminating broom infestations within 10 metres of that boundary. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed.	The reason for this rule is to manage the spread of broom causing unreasonable costs to an adjacent owner and/or occupier where active broom management is being undertaken by that land owner and/or occupier within 10 metres of the boundary. Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected owner and/or occupier.

Objective, Principal Measures and Rules	
The provisions of this rule do not apply when broom is present as a hedge on a property boundary provided that the top and sides are trimmed each year after flowering but before seed set to minimise seeding. A hedge is any single row extending horizontally for a minimum continuous length of 50 metres. A breach of this Rule creates an offence under Section 154N (19) of the Act.	
Plan Rule 19	**Explanation of Rule**
Note: *This is designated a Good Neighbour Rule.* An owner and/or occupier in the Southland region shall, on receipt of a written direction from an Authorised Person, eliminate gorse infestations on their land within 10 metres of the adjoining property boundary where the owner and/or occupier of the adjoining property is eliminating gorse infestations within 10 metres of that boundary. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed. The provisions of this rule do not apply when gorse is present as a hedge on a property boundary provided that the top and sides are trimmed each year after flowering but before seed set to minimise seeding. A hedge is any single row extending horizontally for a minimum continuous length of 50 metres. A breach of this Rule creates an offence under Section 154N (19) of the Act.	The reason for this rule is to manage the spread of gorse causing unreasonable costs to an adjacent owner and/or occupier where active gorse management is being undertaken by that land owner and/or occupier within 10 metres of the boundary. Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected owner and/or occupier.
Plan Rule 20	**Explanation of Rule**
Note: *This is designated a Good Neighbour Rule.* An owner and/or occupier in the Southland region shall, on receipt of a written direction from an Authorised Person, eliminate ragwort infestations on their land within 20 metres of the	The reason for this rule is to manage the spread of ragwort causing unreasonable costs to an adjacent owner and/or occupier who is carrying out cattle, deer or horse grazing and is undertaking active ragwort management within 20 metres of their property boundary.

Objective, Principal Measures and Rules	
adjoining property boundary where: (a) the occupier of the adjoining property is carrying out cattle, deer or horse grazing; and (b) is eliminating ragwort infestations within 20 metres of that boundary. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed. A breach of this Rule creates an offence under Section 154N (19) of the Act.	Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected owner and/or occupier.
Plan Rule 21	**Explanation of Rule**
Note: *This is designated a Good Neighbour Rule.* An owner and/or occupier in the Southland region shall, on receipt of a written direction from an Authorised Person, eliminate nodding thistle infestations on their land within 50 metres of the adjoining property boundary where the owner and/or occupier of the adjoining property is eliminating nodding thistle infestations within 50 metres of that boundary. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed. A breach of this Rule creates an offence under Section 154N (19) of the Act.	The reason for this rule is to manage the spread of nodding thistle causing unreasonable costs to an adjacent owner and/or occupier who is undertaking active nodding thistle management within 50 metres of their property boundary. Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected owner and/or occupier.
Advice Note *Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Act.*	

6.6 Pest animals to be managed under the sustained control programme

Pest animals to be included in the sustained control programme are listed in Table 17 below.

Table 17: Pest animals to be included in the sustained control programme (animals)

Common Names	Scientific Name	Area
Animal		
Possum	*Trichosurus vulpecula*	All of Southland
Rabbit	*Oryctolagus cuniculus*	All of Southland

The characteristics of each of these pests proposed to be managed under the sustained control programme, and adverse effects that they pose, are set out in Table 18 below.

Table 18: Characteristics and threats of pest animals in the sustained control programme

Description and adverse effects	
Possums are marsupials and the males and females are similar in size; between 650 and 930 millimetres, including a tail of 250 to 405 millimetres. They are about the size of a cat. Adults weigh between 1.4 and 6.4 kilograms and have a furry body, with a long prehensile bushy tail for climbing. These animals have a pointed snout with a pink nose and long dark whiskers and brown eyes. The large pointed ears are furless on the inside. Fur is fluffy grey or dark brown on the head, back and tail and white or dirty yellow on the belly and there are several colour forms. Mature possums have a brown stain (the sternal gland) between their front legs. The front legs are shorter than the hind legs. Front paws are hand-like, and rear paws longer with a pair of fused digits. Possums begin breeding at one to two years of age, and populations are capable of increasing at a rate of 22-30 percent per year, indicating that a population at 20 percent of its carrying capacity is capable of recovering to its full carrying capacity within 10 years. Juvenile possums disperse an average of six kilometres from their home range into suitable adjacent habitat, but can move up to 30 kilometres per year. Primarily herbivores, possums feed on a variety of leaves, flower buds, fruit, ferns, and fungi. They feed also on invertebrates and opportunistically on the eggs and nestlings of birds. As a result a very large range of both indigenous and introduced flora and fauna are	

Description and adverse effects	
affected. Despite this wide range, possums are strongly selective browsers and the majority of the diet in any one location consists of only a few species. The species most common in a habitat are not necessarily those most frequently eaten, therefore, possums cause extensive defoliation of favoured plant species and progressive change in forest composition to less favoured species occurs. Damage is not however uniform across habitats. Possum damage appears to be variable within and between plant populations, communities and ecosystems, and is influenced by a range of biotic and abiotic (living and non-living) factors. These factors may predispose plant communities to possum damage, trigger damage episodes, or accelerate the rate of vegetation change. Within forest communities, possum browsing is frequently concentrated on a few trees that may be defoliated or killed, while neighbouring trees may be unaffected. At a regional scale plant species such as mistletoe or fuchsia can coexist with long-established possum populations, while other populations of the same species can be threatened with extinction. Possums can also impact native animals by predation of insect species, snails, and birds. Possums cause economic effects by damaging exotic forests, eating pasture, and through the spread of bovine TB. However, the possum browsing on pasture is likely to be a minor problem apart from pasture/bush margins. Possums can also damage winter feed and other crops especially on bush/pasture margins. The damage to exotic forests tends to be limited but they are known to damage tree crops and domestic gardens. Possums are included in the SRPMP to address adverse effects to conservation values and to protect the past economic investment in Bovine TB control. There is evidence to support the link between possums and TB in farmed animals. Recent studies show that cattle and deer may lick and nuzzle TB infected possums in the terminal stages of the disease as the possums wander around open ground in daylight. Sheep do not appear to exhibit this level of curiosity, and to date have remained relatively free of the disease. For these reasons possum is included in the SRPMP.	

Description and adverse effects	
Rabbits (wild European) are a small mammalian herbivore, grey-brown (or sometimes black) in colour ranging in length from 34 to 50 centimetres and weighing approximately 1.1 to 2.5 kilograms. These animals have four sharp incisors (two on top, two on bottom) that grow continuously throughout their lives, and two peg teeth on the top behind the incisors. They have long ears, large powerful hind legs to facilitate hopping movement, and short, fluffy tails. Their toes are long, and are webbed to keep from spreading apart as the animal jumps. While some may live up to seven years, their life span is generally much shorter, with high rates of natural mortality among young animals. They have a high capacity for reproduction and female rabbits (does) may be pregnant for 70% of a year. Early-born does may breed in their natal year. They can produce a total of 20-50 young per adult doe. Females are also capable of adjusting litter sizes to food supply so rabbit populations are capable of rebounding quickly from natural disasters or control pressures. The rabbits' preferred habitat is grassland below about 1,000 metres altitude, with free draining soils, sunny aspect, and less than 1,000 millimetres annual rainfall. They are distributed to different degrees throughout the region but are absent from Stewart Island/Rakiura and offshore islands. Rabbits are often found in and around lifestyle blocks, rural townships and urban areas. Rabbits cause economic and environmental impacts in areas where favourable conditions allow them to reach high numbers. The introduction of Rabbit Haemorrhagic Disease (RHD) and the development of intensive agriculture, especially dairy farming has had a significant effect on rabbit populations, particularly in the more highly prone areas. In high numbers rabbits can compete with stock for food, or damage young trees and crops. They can also increase potential for erosion through burrowing and act as a food source for other predators. For these reasons rabbit is included in the SRPMP.	

The management aims and the range of methods to be used to accomplish those aims for these pest animals to be sustainably controlled are set out in Table 19 below. An explanation of alternatives means is also provided.

Table 19: Aims and means of achievement for pest animals in the sustained control programme (animals)

Objective, Principal Measures and Rules	
Plan Objective 10	**Principal measures to be used**
Over the duration of the Plan, sustainably control possums in the Southland region to: (a) ensure population levels do not exceed 5% Residual Trap Catch within areas shown on Map 7 - Appendix 1; and (b) 10% Residual Trap Catch within the areas shown on Map 7 - Appendix 1. to minimise any adverse effects on economic and environmental values.	Apropriate measures drawn from the suite of activities listed under **requirement to act, council inspection, advocacy and education** described in Section 5.3 of the SRPMP will be used to by Environment Southland to achieve Objective 10.
Plan Rule 22	**Explanation of Rule**
An owner and/or occupier within an area shown on Map 7 - Appendix 1 as a 5% Residual Trap Catch area shall control possum densities on the land they occupy at or below 5% Residual Trap Catch. A breach of this Rule creates an offence under Section 154N (19) of the Act.	The reason for this rule is to maintain the population levels of possums to that which prevents adverse effects on economic and environmental values. Possum densities have previously been reduced in Possum Control Areas and through TB possum control programmes undertaken as part of implementing National Pest Management Strategies (Animal Health Board, TbFree NZ, OSPRI Ltd). A significant majority of owners and/or occupiers wish to secure the gains achieved by those programmes by agreeing to continue undertaking control work into the future. This rule provides security against inaction by an owner and/or occupier within the 5% area.
Plan Rule 23	**Explanation of Rule**
An owner and/or occupier in an area shown on Map 7 - Appendix 1 as a 10% Residual Trap Catch area shall control possum densities on the land they occupy at or below 10% Residual Trap Catch. A breach of this Rule creates an offence under Section 154N (19) of the Act.	The reason for this rule is to maintain the population density of possums on adjacent or nearby land to levels that minimise both the spread to 5% Residual Trap Catch control areas, including Possum Control Areas, and any adverse effects on economic and environmental values. The requirement for a 10% RTC on private land at Stewart Island will be in effect until such time when a possum eradication project is completed, at which time, Plan Rule 25 will

Objective, Principal Measures and Rules	
	apply to ensure possums are maintained at zero density.

Advice Notes

1. *In this section a Residual Trap Catch value can be substituted for an equivalent method, agreed with Environment Southland, capable of estimating possum population densities.*
2. *Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Act.*

Plan Objective 11	Principal measures to be used
Over the duration of the Plan, sustainably control rabbits to ensure population levels do not exceed Level 3 on the Modified McLean Scale[7].	Apropriate measures drawn from the suite of activities listed under **requirement to act, Council inspection, advocacy and education** described in Section 5.3 of the SRPMP will be used to by Environment Southland to achieve Objective 11.

Plan Rule 24	Explanation of Rule
An owner and/or occupier within the Southland region shall control rabbit densities on the land they occupy to at or below Level 3 on the Modified McLean Scale. Except for within the Stewart Island/Rakiura Site-Led Programme Zone, any rabbit being kept as a pet that is kept in an enclosure from which the rabbit is unable to escape is exempt from the provisions of Plan Rule 24. A breach of this Rule creates an offence under Section 154N(19) of the Act.	The reason for this rule is to maintain the population levels of feral rabbits to that which prevents adverse effects on the economic values of owners and/or occupiers, and in so doing, prevent the possible adverse effects on wider environmental values.

Advice Note

Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Act.

Stewart Island/Rakiura is not exempt from Plan Rule 24 and Sections 52 and 53 of the Biosecurity Act 1993 continue to apply to all rabbits within the Stewart Island/Rakiura Site-Led Programme Zone.

[7] Refer Appendix 3 for Modified McLean Scale

6.7 Pests to be managed under site-led programmes

6.7.1 Introduction

The site-led programme seeks to manage pests whose presence, at or nearby, threaten the values that are special to particular sites (protecting the values at the place). The sites themselves can be determined in two main ways. In the first instance, there are two sites within the Southland region that have already been identified through a variety of ways at a district or local scale as having particular values[8], primarily non-production. In the second instance, there is opportunity for individuals or community groups to promote and pursue further sites that they consider hold values of importance to those people.

Sites managed through the site-led programme may range in extent from small areas within a property to larger areas covering multiple properties. Likewise, their values can be threatened by individual or multiple organisms and pest management regimes specifically tailored to each site will be necessary.

It is not the role of the SRPMP to specify criteria for, or to identify, sites of value. Instead, that role falls to other legislative mechanisms (the Resource Management Act and the Conservation Act among others) or to individual and community group initiatives. An indication of the criteria that may be used is set out in Appendix 2.

One site is included in the SRPMP:

1. **Stewart Island/Rakiura** is delineated on Map 8 - Appendix 1. It incorporates the island, islets and all other offshore islands situated off the coast of mainland Southland. Many of the island's ecosystems are nationally significant and contain threatened species including southern NZ dotterel, long-tailed bat, 10 endemic vertebrate species and 20 endemic plant species. Stewart Island/Rakiura is also the service port for Ulva Island, and Invercargill City Airport is the major service port for Whenua Hou/Codfish Island, both of which are currently pest free. These two islands, as well as other pest free islands identified within the Stewart Island/Rakiura Site-Led area, such as Bench Island and many of the Rakiura Tītī Islands, are home to rare species such as saddleback and kakapo.

   Its isolation from the mainland, relatively small permanent human population and significant natural features enables a wider range of pest species to be managed compared with other areas of Southland. Also, many of the pests targeted for management are not currently found on the islands but can be prevented from invasion from elsewhere in Southland. Others are at low numbers, or where effective control is possible and reinvasion risk is low, may also be eradicated more easily.

   The local community, Department of Conservation, Rakiura Tītī Islands Administering Body, and Predator Free Rakiura are already working on pest management projects on the island.

Further sites may be added to the SRPMP as a result of community requests or new knowledge and information being acquired by Environment Southland. In some instances, Environment Southland may provide assistance to individuals or community groups to help

[8] See glossary for definition (environment in Section 2 and matters in Section 54(b) of the Act)

with establishing additional sites. Assistance could include identifying which pests should be targeted, defining the appropriate outcomes and management regimes, delineating owner and/or occupier responsibilities and formulating funding arrangements. In most instances, the programmes will target pests already specified in the SRPMP or those organisms listed as organisms of interest.

The process that will be followed for adding a new site to the SRPMP is dependent on effect upon a person's rights or obligations. If such effects are not significant, the SRPMP may be amended by Council resolution to include the site. For example, where minimal regulation is required or there is substantial support among the parties for its inclusion. In other cases, the addition will be by a more comprehensive process including appropriate consultation, notification and appeal provisions as required under the Act.

6.7.2 Site-led pest programme for Stewart Island/Rakiura

Pests subject to programmes for this site are listed in Table 20 below.

Table 20: Pests to be managed under the site-led programme for Stewart Island/Rakiura

Common names	Scientific name
Plants	
African club moss	*Selaginella kraussiana*
Gunnera	*Gunnera tinctoria*
Hawthorn	*Crataegus monogyna*
Heather	*Calluna vulgaris*
Knotweed (Indian/Himalayan)	*Persicaria wallichii* (syn *Polygonum polystachyum*)
Spanish heath	*Erica lusitanica*
Willow (crack, grey)	*Salix fragilis*, *S. cinerea*
Animals	
Feral cat	*Felis catus*
Feral goat	*Capra aegagrus hircus*
Feral pig	*Sus scrofa*
Hedgehog	*Erinaceus europaeus*
House mouse	*Mus musculus*
Mustelids (ferret, stoat, weasel	*Mustela furo, M. erminea, M. nivalis*
Possum+	*Trichosurus vulpecula*
Rat (Norway, ship and kiore)	*Rattus norvegicus, R. rattus R. exulans*

+ Rule 23 pertaining to possums still applies to this site.

Table 21: Pest agents in relation to the site-led programme for Stewart Island/Rakiura

Common names	Scientific name
Animals	
Domestic cat	*Felis catus*
Domestic goat	*Capra aegagrus hircus*
Domestic pig	*Sus scrofa*

The characteristics of each of these pests proposed to be managed under the eradication programme, and the adverse effects that they pose, are set out in Table 22 below. They are included in the SRPMP because of the threats that they pose to each particular site.

Table 22: Characteristics and threats of pests in the site-led programme for Stewart Island/Rakiura

Description and adverse effects	
Plants	
African club moss is a fern ally or club moss – a primitive type of plant that evolutionally fits between mosses and ferns. It produces cones with spores rather than flowers. African club moss has creeping and irregularly branched stems that root at the nodes, forming a loose mat. The leaves are small and in four rows on the stem. African club moss grows on damp forest floors and stream banks. It can be found in gardens, shade houses, nurseries and ferneries. African club moss reproduces both vegetatively and sexually. Pieces less than one centimetre long are capable of establishing new plants and spores can be picked up on clothing and footwear and carried into new areas. Once established in an area, African club moss excludes desirable species from co-existing with it. African club moss is only known in a few locations on Stewart Island/Rakiura. If it encroached further it could put forest regeneration at risk. The Department of Conservation operates a vector control programme for African club moss in areas that have been identified as high risk source locations for incursions onto Public Conservation Land.	
Gunnera is a summer green herb with leaves up to two metres long with five to seven lobes. Flower panicles extend up to one metre in length and contain hundreds of fruits that are dispersed by birds and water. It has been planted as an amenity plant around ponds and streams in gardens and parks throughout New Zealand. The plant forms dense patches that exclude almost all other plant species. It is invasive in damp coastal bluffs, riparian margins and disturbed ground. Herbfields, turf communities and other low stature vegetation are also susceptible to invasion.	

Description and adverse effects	
Gunnera has been part of a ten year eradication programme on Stewart Island/Rakiura, where it is found in approximately 165 locations.	
Hawthorn is a thorny much-branched, deciduous shrub or small tree growing up to 10 metres tall. This plant has been widely planted throughout Southland, often as a hedgerow. It produces many long-lived seeds that are spread by birds. The plant can form dense thickets, blocking access and replacing desirable species along forest margins, shrubland, short tussock grasslands and other low-growing habitats. It can also be found along roadsides and in deserted habitations, where it acts as a seed source for invasion into areas of native vegetation. Although common in regional Southland, hawthorn is only localised on Stewart Island/Rakiura to the area around Halfmoon Bay.	
Heather – *see description under Table 12 - progressive containment programme.* Although common in regional Southland, heather is only localised on Stewart Island/Rakiura to the area around Halfmoon Bay. If it encroached further it could put the significant wetland complexes and alpine areas at risk. The Department of Conservation is working towards eradication of heather on Stewart Island/Rakiura.	
Knotweed is a multi-stemmed, thicket-forming, rhizomatous perennial shrub. Stems are slender and hollow and zig-zag from leaf node to leaf node, up to 1.8 metres high. The leaves are heart to lancet-shaped, alternating, up to 40 centimetres long. Stems die in autumn and re-grow in spring from woody rhizomes. Flowers are small, white or pink, clustered along short branches. Knotweed is capable of excluding other species and prevents native seedlings establishing. They tolerate wet to moderately dry conditions and warm to cold temperatures but are intolerant of shade. Shrublands and waterways are vulnerable to invasion. The plant adversely impacts amenity and conservation values in riparian margins and other disturbed areas.	

Description and adverse effects	
Spanish heath is a brittle and erect woody perennial shrub growing up to two metres high, establishing in habitats from near sea level up to 1,000 metres. It is densely covered in small, needle-like leaves, arranged in groups of three or four. The plant produces masses of snowy white flowers from March to December. Seeds are very small and light and are contained within smooth capsules about three millimetres long. They are readily dispersed by wind. This plant can form dense stands on disturbed and bare sites. These stands can be persistent in short vegetation types such as herb fields, tussock land and fernland, preventing the recruitment of desirable species. It is usually succeeded in taller growing plant communities. The Department of Conservation is working towards eradication of Spanish heath on Stewart Island/Rakiura.	
Willows (crack and grey) **Crack willow** is a deciduous tree growing to 25 metres tall. It has a spreading crown and multiple trunks. Bright red rootlets are present when the plant is in or near water. The shoots are dark-brownish green and snap with a characteristic "crack" when bent. **Grey willow** is a small tree growing up to seven metres high, although it often only grows to one to two metres high. The leaves are shiny on the upper surface and covered with soft grey hairs underneath. It is often found growing in swamps, riverbanks and wet areas behind coastal dunes. The roots of crack willow provide protection from flooding by holding banks in place. However, it can form large, dense stands along river and stream channels, displacing native species, choking waterways and increasing the risk of flooding. The branches are very fragile and fragments break off readily. The smallest of fragments will root in mud and produce mature trees wherever conditions are favourable. Its growth and spread is exponential - slow to start with, then very rapid as the population grows. Grey willow replaces native species in wetlands and forms vast dense stands. It can also cause blockages,	 *Note: This is a marginal aquatic pest that may be found in freshwater*

Description and adverse effects	
flooding and structural changes in waterways even though it has been widely planted in many wet areas for soil reclamation and stabilisation purposes. Although common in regional Southland, willows are only localised on Stewart Island/Rakiura to the area around Halfmoon Bay. If it encroached further it could put the significant wetland complexes and alpine areas at risk.	
Animals	
Feral cats resemble domestic cats in both size and colouration. Coat colours vary from pure black to orange tabby and some resemble the striped dark and pale grey of the true European wild cat. They commonly revert to black, tabby or tortoiseshell with varying extents of white starting from the belly and breast. Adult male cats are generally larger than the females and can weigh up to five kilograms. Feral cats tend to be solitary and territorial compared to domestic stray or unwanted cats that tend to form colonies. Territory is marked by scent secreted from anal glands and by spraying urine. Feral cats are mainly active at night. Their vision and hearing are acute. Feral cats inhabit a wide range of urban, rural and forest habitats. They are found from sea level to alpine habitats. The diet of a feral cat is wide-ranging and includes small mammals, fish, birds and invertebrates. They produce two to three litters per year with an average of four young in each. Feral cats have been branded as 'the ultimate predators' in New Zealand and have been nominated as amongst the '100 World's Worst' invaders. New Zealand's unique native wildlife is particularly vulnerable to predation by cats. Feral cats kill young and adult birds and occasionally take eggs, prey on native lizards, fish, frogs and large invertebrates. Cats are highly efficient predators, and have been known to cause local extinctions of seabird species on islands around the world. Both sea and land birds are at risk, particularly those that nest or feed on or near to the ground. Feral cats are implicated in a small way in the spread of Bovine Tuberculosis, with the potential to infect cattle. They also carry parasites and toxoplasmosis	

Description and adverse effects	
that causes abortions in sheep and illness in humans. Feral and domestic stray cats can be aggressive towards pet cats. Through fighting they cause severe injuries sometimes resulting in the pet cat having to be put down. Feral cats are likely to interbreed with the un-neutered domestic cat population and may spread infectious diseases. On Stewart Island/Rakiura feral cats are known to predate nationally endangered southern New Zealand dotterel as well as other endemic and endangered species such as harlequin geckos.	
Ferrets, stoats, weasels are part of the Mustelid family, which is a group of small to medium sized carnivores. Mustelids have large home ranges and are active day and night. They are opportunistic predators and have a strong musk odour. Ferrets are the largest mustelid in New Zealand. Male ferrets grow up to 44 centimetres and females up to 37 centimetres in length. The undercoat is creamy yellow with long black guard hairs that give the ferret a dark appearance. A characteristic black face mask occurs across the eyes and above the nose. Stoats have long, thin bodies with smooth pointed heads. Ears are short and rounded. They are smaller than ferrets. Males grow up to 30 centimetres and females up to 25 centimetres in length. Their fur is reddish-brown above with a white to yellowish underbelly. Stoats have relatively long tails with a distinctive bushy black tip. Weasels are the smallest and least common mustelid in New Zealand. Males grow to about 20 centimetres. Their fur is brown with white undercoat, often broken by brown spots. Their tails are short, brown and tapering. Mustelids inhabit a wide range of urban, rural and forest habitats. Although habitat loss and modification remains a threat to native biodiversity, a more equally serious threat is from invasive introduced species. Introduced predators, such as ferrets, stoats, weasels and feral cats, pose a significant threat to our remaining natural ecosystems and habitats and threatened native species and can have a considerable negative impact on primary production. Ferrets, stoats and weasals are generally not found on Stewart Island/Rakiura or the Titi Islands.	

Description and adverse effects	
Mustelids were introduced in New Zealand in the 1880s in an attempt to manage growing rabbit populations. This had minimal impact on rabbit densities but had a significant impact on New Zealand's biodiversity. Mustelids are implicated in the extinction of some indigenous bird species and as the major cause of decline of many others. Ferrets are also a threat to agriculture, particularly through their role as a vector (carrier) of bovine tuberculosis. Mustelids are a threat to poultry farms and carry parasites and toxoplasmosis, which can cause illness in humans and livestock.	
Feral pigs (both feral and domestic) can measure 90 to 200 centimetres in length, and weigh 50-90 kilograms. Their colour varies from dark grey to brown, black or white. Adult males develop tusks that protrude from their mouth. Sexually mature at two years of age, they breed once per year with litter size ranging from four to six piglets. The piglets are weaned at three to four months of age. Vegetation forms 70% of a pig's diet. Pig rooting can reduce the diversity of seedlings and saplings and cause a dramatic reduction in leaf cover on the forest floor. Feral pigs are scattered throughout Southland but are not found on Stewart Island/Rakiura (nor are domestic pigs). Their distribution is assisted by people who continue to release pigs into the wild, despite this being an illegal activity. The pigs cause a number of impacts including rooting up pasture and eating forest seedlings, insects and scavenging nests. The scavenging habit of feral pigs contributes to their tendency to carry TB.	
Feral goats (both feral and domestic) vary in size and their colour can be white, black, brown or a combination of colours. Both sexes have horns. Adult males stand approximately 70 centimetres high and weigh 50-60 kilograms. Females are smaller and begin breeding at six months old. They can breed twice a year and twins are common. Males can mate from six months old but are usually excluded by other males until three to four years of age. Goats are absent from Stewart Island/Rakiura, although there have been pet animals present on the Island in the past.	

Description and adverse effects	
Escapees (feral goats) are extremely damaging to native vegetation. They prevent seedling regeneration and in partnership with possums can cause complete forest collapse.	
Hedgehogs are nocturnal insectivores. Their back and sides are completely covered with spines and they roll into a prickly ball when disturbed, or when hibernating. They are widespread through lowland Southland, occupying a wide range of habitats. On Stewart Island/Rakiura, they are less widespread and are found mainly around Halfmoon Bay. These animals eat mainly insects, however they eat a wide range of food if the opportunity presents itself. They are a potentially serious predator of native invertebrates, lizards, and ground nesting birds.	
House mouse are small, omnivorous generalists that reach approximately 30 grams in weight and measure around 115 millimetres (without tail). They have a dull grey-brown back and a uniform grey belly with a very thin, grey-brown tail and large black eyes. These animals can be found throughout Southland, from the coast to high altitude (1,200-1,300 metres), predominantly in temperate forest (native and exotic), croplands and pasture, and subalpine tussock. They also occur in various urban habitats. House mice are very well adapted to dry conditions due to their ability to concentrate their urine, and as most of their water requirements can be taken from the moisture of their food. Caterpillars, spiders and weta are a major part of the mouse's invertebrate diet. Additionally a range of seeds, including hard beech, mountain beech, kauri and rimu are consumed. Mice are agile climbers, good jumpers and can swim. Consumption of seeds may alter the regeneration of these species. Prey on invertebrates may also have secondary effects on the vegetation due to changes in ecosystem processes. An established population is not known on Stewart Island/Rakiura.	

Description and adverse effects	
Possum – *see description under Table 18 - sustained control programme.*	
Rat (Norway, ship and kiore) The **Norway rat** has brown fur on its back and pale grey fur on its belly. Adults normally weigh 150-300 grams but may reach up to 500 grams, and are up to 390 millimetres long. They have relatively small ears which usually do not cover the eyes when pulled forward. Their tail is shorter than their head to body length. Breeding commences in rats as early as three to four months of age and females can produce 15-20 young per year. Mortality can be high. **Ship rats** are slender with large hairless ears, grey-brown on the back with a similarly coloured or creamish-white belly, or black all over. The uniformly-coloured tail is always longer than the head and body length combined. Adults usually weigh 120-160 grams but can exceed 200 grams. **Kiore** have brown fur, with white-tipped grey fur on the belly, pale feet with a dark mark on the outer edge of the hind feet. Their ears cover the eyes when pulled forward and they have a thin tail, about the same length as body. They are smaller than other rats in New Zealand, with a maximum body length of 180 millimetres without the tail, and they usually weigh 60-80 grams, but can weigh up to 180 grams. Rats inhabit a wide range of urban, rural and forest habitats. Ship rats are more common within forest areas. Rats are omnivorous and opportunistic feeders eating 10 percent of their body weight per day. This makes them a competitor for food with many species and predators of others. They eat a variety of native flora and fauna, in particular native birds (eggs and fledglings), lizards, and invertebrates. They eat large quantities of native seeds, which reduces regeneration of native plants.	

The management aims and the range of methods to be used to accomplish those aims for these pests to be managed under the site-led programme are set out in Table 23 below. An explanation of alternatives means is also provided.

Table 23: Aims and means of achievement for the site-led programme on Stewart Island/Rakiura

Objective, Principal Measures and Rules	
Plan Objective 12	**Principal measures to be used**
Over the duration of the Plan, prevent the range extension throughout or to the Stewart Island/Rakiura site (Map 8 - Appendix 1) of: (i) Feral cats; (ii) Feral goats; (iii) Feral pigs; (v) Hedgehogs; (vi) House mouse; (vii) Mustelids; (viii) Possums; and (ix) Rats to avoid, mitigate or prevent damage to the specific values particular to the site.	Environment Southland will take a lead role in supporting community groups and agencies in bringing about the desired levels of environmental protection to this site. Apropriate measures drawn from the suite of activities listed under **requirement to act,** , **council inspection, service delivery, advocacy and education** described in Section 5.3 of the SRPMP will be used to by Environment Southland to achieve Objectives 12, 13, 14 and 15.
Plan Objective 13	
Over the duration of the Plan, reduce all infestations of: (i) Hawthorn; (ii) Heather; (iii) Spanish heath; and (iv) Willow; to zero levels on the Stewart Island/Rakiura site (Map 8 - Appendix 1) to avoid, mitigate or prevent damage to the specific values particular to the site.	
Plan Objective 14	
Over the duration of the Plan, progressively contain and reduce the geographic distribution or extent of: (i) Gunnera; (ii) Knotweeds; at the Stewart Island/Rakiura site (Map 8 - Appendix 1) to avoid, mitigate or prevent damage to the specific values particular to the site.	
Plan Objective 15	
Over the duration of the Plan, sustainably control population levels of: (i) Feral cats; (ii) African club moss;	

Objective, Principal Measures and Rules	
at the Stewart Island/Rakiura site (Map 8 - Appendix 1) to avoid, mitigate or prevent damage to the specific values particular to the site.	
Plan Rule 25	**Explanation of Rule**
No person shall keep, hold, enclose or otherwise harbour in any place, either in transit to or present on the Stewart Island/Rakiura site (Map 8 - Appendix 1) any: (i) Hawthorn; (ii) Heather; (iii) Spanish heath; (iv) Willow; (v) Feral goat; (vi) Feral pig; (vii) Feral cat; (viii) Hedgehog; (ix) House mouse; (x) Mustelid; (xi) Possum; or (xii) Rat. A breach of this rule creates an offence under Section 154N (19) of the Act. For the purpose of this rule place includes- *any building, conveyance, craft, land, or structure.*	The reason for this rule is to help achieve the exclusion or eradication of these pests from the Stewart Island/Rakiura site.
Plan Rule 26	**Explanation of Rule**
Any person who detects or suspects the presence of any: (i) house mouse; (ii) mustelid; (iii) pest plant listed in Table 20; (iv) feral goat; or (v) feral pig; at the Stewart Island/Rakiura site (Map 8 - Appendix 1) must immediately report the pest's presence and location to Environment Southland.	The reason for this rule is to assist Environment Southland in detecting the presence of any of these pests.
Advice note *Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Biosecurity Act 1993.*	

Objective, Principal Measures and Rules	
Plan Rule 27	**Explanation of Rule**
Note: *This is a pest agent rule.* No person shall: (i) keep, hold, enclose or otherwise harbour in any place, either in transit to or present on the Stewart Island/Rakiura site (Map 8 - Appendix 1) any domestic cat, goat or pig; or (ii) release into the wild on the Stewart Island/Rakiura site any domestic cat, goat or pig. A breach of this Rule creates an offence under Section 154N (19) of the Act. For the purpose of this rule place includes - *any building, conveyance, craft, land, or structure.* Any person who is responsible for a domestic cat that is de-sexed and its identity microchipped is exempted from the provisions of Rule 27 (i).	The reason for this rule is to prevent domestic cats, goats or pigs being present or being released into the wild at the Stewart Island/Rakiura site.

7 Monitoring

7.1 Measuring achievement of objectives

Table 24 outlines how Environment Southland will undertake monitoring to measure the extent to which the objectives of the SRPMP are met. Reporting on this monitoring strategy to Council occurs on an annual basis.

Table 24: Monitoring strategy for measuring SRPMP objectives

Objective	Indicator/s	Method of monitoring
Exclusion programme		
Rooks, wallaby, boneseed, Chilean needle grass and nassella tussock remain absent from the region.	Absence from the region.	As reported from public or detected through active surveillance.
Asian paddle crab, Australian droplet tunicate, Mediterranean fanworm, pyura and sea squirts (*Stylea clava and Didemnum vexillum*) remain absent from the region.	Absence from the region.	As reported from public and annual surveillance monitoring led by NIWA Biannual Fiordland surveillance. Annual monitoring of wider Southland area.
Eradication programme		
Reduce the infestation levels of **field horsetail, German ivy, parrots feather, purple loosestrife and smilax** to zero within the life of the plan.	Number of new and active sites. Absence from the region.	Reports from public. Active surveillance of known sites. Active sites are monitored annually. Surveillance and Historic sites are monitored periodically.
Reduce the infestation levels of **boxthorn and spartina** to zero within the life of the plan.	Number of new and active sites. Absence from the region.	Receive Department of Conservation annual report.
Progressive containment programme		
Contain and reduce the distribution of **bomarea, buddleja, contorta and mountain pine, cotoneaster, Darwin's barberry, giant buttercup, heather, Japanese honeysuckle, lagarosiphon, Old man's beard, reed sweet grass, rough horsetail, Siberian lyme grass and wilding**	Number of infestations outside of containment areas or known sites.	As reported from public. Monitor by active surveillance.

Objective	Indicator/s	Method of monitoring
conifers.		
Contain the population of **Bengal cats** to approved owned pets.	Number of registered Bengal cats.	Register of Bengal cat owners.
Contain the population of ***Undaria*** to existing sites.	Number of infestations outside of containment areas. Extent of current infestations.	Annual monitoring of known infestations (permanent transects). Quarterly surveillance monitoring surrounding Fiordland. Annual monitoring of wider Southland area.
Sustained control programme		
Gorse, broom, ragwort, and **nodding thistle** do not spread to other properties.	Number of resolved complaints.	All complaints are registered and inspections recorded.
Populations of **possums** are maintained below 5% or 10% Residual Trap Catch as shown on Map 7 – Appendix 1.	Residual Trap Catch indices (or equivalent agreed method).	Residual Trap Catch monitors (or equivalent agreed method) as required.
Populations of **rabbits** are maintained at or below level 3 on the Modified Mclean Scale (MMS).	MMS.	Rabbit populations are assessed as required.

Objective	Indicator	Method of monitoring	Reporting to Council
Stewart Island/Rakiura site-led monitoring			
To protect the natural values of Stewart Island/Rakiura, islets and off-shore islands.	**The pests listed in Section 6.7.2** do not spread beyond known ranges. Pest free islands remain pest free.	As reported from public or detected through active surveillance or Department of Conservation, Iwi or the Rakiura Tītī Islands Administering Body monitoring programmes.	Annually or as required.[9]
	Populations of **crack willow, grey willow, hawthorn, heather and Spanish heath** are reduced to zero on the islands within the life of the Plan.	Reports from public. Number of new and active sites.	Annually.
	Domestic cats are de-sexed and microchipped.	Register of domestic cats.	Annually or as required.[9]
To support the community with existing pest control programmes.	The community and environmental values at the site are preserved. The community are in agreement over the methods being used.	Regular meetings with the Stewart Island/Rakiura Community.	Annually or as required.[9]

7.2 Monitoring the management agency's performance

Environment Southland is the management agency. As the management agency responsible for implementing the SRPMP, Environment Southland will:

(a) prepare an operational plan within three months of the commencement date of the SRPMP;
(b) review the operational plan annually, and amend it if needed;

[9] With regard to reporting to Council required in Table 24, the statement '*as required*' may include (but is not limited to) the following circumstances:
1. For compliance, based on complaints or where ES suspects non-compliance to the SRPMP rules.
2. For measuring success or performance of programmes.
3. Providing feedback to landowners following ongoing control.

The details of how and where monitoring occurs will be determined on an annual ongoing basis.

(c) report on the operational plan each year, within five months after the end of each financial year;
(d) maintain up-to-date databases and records of complaints, pest levels and densities, monitoring results and responses from Environment Southland and land owners and/or occupiers.

7.3 Monitoring plan effectiveness

Monitoring the effects of the SRPMP will ensure that it continues to achieve its purpose. It will also check that relevant circumstances have not changed to such an extent that the SRPMP requires review. A review may be needed if:

(a) the Act is changed, and a review is needed to ensure that the SRPMP is not inconsistent with the Act;
(b) other harmful species create, or have the potential to create, problems that can be resolved by including those organisms in the SRPMP;
(c) monitoring shows the problems from pests or other organisms to be controlled (as covered by the SRPMP) have changed significantly; or
(d) circumstances change so significantly that Environment Southland believes a review is appropriate.

If the SRPMP does not need to be reviewed under such circumstances, it will be reviewed in line with s100D of the Act. Such a review may extend, amend or revoke the SRPMP, or leave it unchanged.

The procedures to review the SRPMP will include officers of Environment Southland:

(i) assessing the efficiency and effectiveness of the principal measures specified for each pest and other organism (or pest group or organisms) to be controlled to achieve the objectives of the SRPMP;
(ii) assessing the impact the pest or organism (covered by the SRPMP) has on the region and any other harmful species that should be considered for inclusion in the SRPMP; and
(iii) liaising with key interest groups on the effectiveness of the SRPMP.

Part Three

Procedures

8 Powers conferred

8.1 Powers under Part 6 of the Act

The Principal Officer (Chief Executive) of Environment Southland or Chief Technical Officer (appointed by the Director-General of Conservation and employed under the State Sector Act 1988) may appoint authorised persons to exercise the functions, powers and duties under the Act in relation to a regional pest management plan.

Environment Southland will use those statutory powers of Part 6 of the Act as shown in Table 25, where necessary, to help implement the SRPMP.

Table 25: Powers from Part 6 to be used

Administrative provisions	Biosecurity Act Reference	Level of delegation
Exemption from Rules	Section 78	Authorised Person*
The appointment of authorised and accredited persons	Section 103(3) & (7)	Principal Officer
Authorised Persons to comply with instructions	Section 104	Principal Officer
Delegation to authorised persons	Section 105	Principal Officer
Power to require assistance	Section 106	Authorised Person*
Power of inspections, warrant to inspect and duties on entry.	Sections 109, 110 & 112	Authorised Person*
Entry in respect of offences	Section 111	Authorised Person *
Power to record information	Section 113	Authorised Person *
General powers	Section 114	Authorised Person*
Aerial application of substance	Section 114A	Principal Officer
Use of dogs and devices	Section 115	Authorised Person*
Seizure of evidence (s111)	Section 118	Authorised Person*
Seizure of abandon goods	Section 119	Authorised Person*
Power to intercept risk goods	Section 120	Authorised Person*
Power to examine organisms	Section 121	Authorised Person*
Power to apply article or substance to place	Section 121A	Authorised Person*
Power to give directions	Section 122	Authorised Person*
Power to act on default	Section 128	Authorised Person*
Liens	Section 129	Authorised Person*
Declaration of restricted areas	Section 130	Authorised Person*
Declaration of controlled areas	Section 131	Principal Officer
Duration of place and area declarations	Section 133	Principal Officer
Options for cost recovery	Section 135	Principal Officer
Failure to pay	Section 136	Authorised Person*
Offences	Section 154M, 154N and 154O	Enforcement Panel, Environment Southland

**the powers of each individual Authorised Person are subject to their terms of appointment.*

Note: *Environment Southland maintains a database of procedures authorised persons will follow when owners and/or occupiers or other persons do not comply with the rules or other general duties.*

8.2 Powers under other sections of the Act

Any person in breach of a rule in the SRPMP that specifies that a contravention of the rule creates an offence under Section 154N (19) of the Act, can be prosecuted and is liable on conviction under Section 157 (5) of the Act to a fine.

A Chief Technical Officer (employed under the State Sector Act 1988) may appoint authorised people to implement other biosecurity law considered necessary. One example is where restrictions on selling, propagating and distributing pests (under s52 and s53 of the Act) must be enforced.

8.3 Power to issue exemptions to plan rules

Any person may apply to Environment Southland for an exemption from a requirement in a rule set out in Part Two of the SRPMP.

The requirements in Section 78 of the Act must be met for a person to be granted an exemption. These include:

(2) The council may grant an exemption under subsection (1) only if—
- *(a) the council is satisfied that granting the exemption will not significantly prejudice the attainment of the plan's objectives, and*
- *(b) the council is satisfied that 1 or more of the following applies:*
  - *(i) the requirement has been substantially complied with and further compliance is unnecessary:*
  - *(ii) the action taken on, or provision made for, the matter to which the requirement relates is as effective as, or more effective than, compliance with the requirement:*
  - *(iii) the requirement is clearly unreasonable or inappropriate in the particular case:*
  - *(iv) events have occurred that make the requirement unnecessary or inappropriate in the particular case.*

(3) The council may exempt all persons, a specified class of persons, persons in a specified place, or persons responsible for specified goods or things from a requirement in a rule, without conditions or on conditions that the council considers appropriate.

(4) The council may grant an exemption under subsection (3) only if the council is satisfied that events have occurred that make the requirement unnecessary or inappropriate.

(5) Conditions on which the council grants an exemption must be consistent with the purpose of this Part and must be no more onerous than the requirement from which the exemption is granted.

(6) The council must determine the period of an exemption that the council grants.

Environment Southland will keep and maintain a register of exemptions granted that records the description, reasons and period of each exemption. The public will be able to inspect this register free of charge during business hours. Environment Southland may also grant an extension of the period of an exemption.

9 Funding

9.1 Funding sources and reasons for funding

The Biosecurity Act 1993 and the Local Government (Rating) Act 2002 require that funding is sought from:

- people who have an interest in the SRPMP;
- those who benefit from the SRPMP; and
- those who contribute to the pest problem.

Funding must be sought in a way that reflects economic efficiency and equity. Those seeking funds should also target those funding the Plan and the costs of collecting funding.

The SRPMP will be funded principally by targeted rates on all rateable land in the region, based on land value (Section 16, Local Government (Rating) Act 2002). This is considered to be the most appropriate method of charging ratepayers for services provided by the Biosecurity Strategy. The rating is covered in the Funding Impact Statement, contained in Environment Southland's relevant Annual Plan or Long-term Plan (LTP).

Actual funding levels for the SRPMP, including a breakdown of work programmes, are set each year through the Annual Plan process.

Separate targeted rates on all rateable land in the region based on equalised land value is considered the fairest method of targeting both beneficiaries and exacerbators.

In general, efficiency is best achieved by targeting costs to those closest to a particular work where those paying can act in respect of those works. If the person deciding has to pay for the results of their action or inaction, they may change their behaviour to minimise costs. Doing so would lead to the least-cost outcome for society. But if another person pays those costs, the incentive to change behaviour is minimal. This may lead to a higher cost for society. Efficiency includes close targeting of costs to benefits and to those contributing to the problem (exacerbators). Equity is difficult to establish, particularly if a "public good" component exists. In general, no relevant guidelines are available.

9.2 Anticipated costs of implementing the SRPMP

The anticipated costs of implementing the SRPMP reflect a best estimate of expenditure levels. Funding levels will be further examined and set during subsequent Annual Plan and Long-term Plan processes. While community funding is mainly sourced from rates, alternative funding sources will be sought by Environment Southland. Such funds will offset rates or be used as a value-added component in appropriate circumstances.

The funding for the implementation of the SRPMP is from a region-wide general rate, set and assessed under the Local Government (Rating) Act 2002, and in determining this, Environment Southland has had regard to the matters outlined in Section 100T of the Biosecurity Act.

Where the implementation of the SRPMP is to be funded by a targeted rate, the matters outlined in Section 100T of the Biosecurity Act will be given specific regard to as part of the Annual Plan or Long-term Plan process.

Table 26: Anticipated costs

Project	2018 Expenditure
Pest Animals - Eradication, Exclusion, Progressive Containment & Sustained Control (excluding possums)	42,000
Pest Plants - Eradication & Exclusion	73,322
Pest Plants - Progressive Containment (excluding Mid Dome Wilding Trees)	183,062
Pest Plants - Progressive Containment: Mid Dome Wilding Trees	106,534
Pest Plants - Sustained Control	159,250
Pest Animals - Sustained Control: Possums	807,913
Marine Pests, Exclusion & Progressive Containment	202,900
Pest Animals - Site-led	22,074
Pest Plants - Site-led	28,628
Monitoring	218,722
Total	**$1,844,405**

The costs listed in Table 26 are likely to rise in line with the New Zealand Consumers Price Index each year.

The costs in Table 26 are for implementing the programmes in the SRPMP. Additional costs will be incurred for implementing programmes in the Biosecurity Strategy.

New incursions or unforeseen range expansions may require further funding. Any additional budget required will be outlined at the time any new incursion occurs.

Any changes to the anticipated costs listed in Table 26 will be documented through the Annual Plan process. Where SRPMP Rules require action to be undertaken by land occupiers, the cost of this action will be met directly by those land occupiers. The Council may provide additional control beyond that required by the SRPMP Rules to ensure the SRPMP Objectives are met. Where this occurs, the control will be funded as specified in s9.4. For all pests this funding will be met by a separate targeted rate on all rateable land based on equalised land value.

9.3 Funding limitations

No unusual administrative problems or costs are expected in recovering the costs from those who must pay the costs.

Glossary of Terms

The use of italics indicates meanings taken from Section 2 of the Biosecurity Act 1993.

Act	means the Biosecurity Act 1993.
Adjacent	means, for the purpose of this Plan, a property that is next to, or adjoining, another property.
Animal	means any mammal, insect, bird or fish, including invertebrates, and any other living organism except a plant or a human.
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*."
Beneficiaries	means the receivers of benefits accruing from the implementation of a pest management measure or plan.
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.
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, owner or occupier to carry out certain work or measures.
Distribute	means to transport or spread a pest in any way.
Ecosystem	means a dynamic complex of plant, animal and micro-organism communities and their non-living environment, interacting as a functioning unit.
Effect	has the same meaning as in the Biosecurity Act 1993, and: *(a) includes the following, regardless of scale, intensity, duration, or frequency:* *(i) a positive or adverse effect; and* *(ii) a temporary or permanent effect; and* *(iii) a past, present, or future effect and* *(iv) a cumulative effect that arises over time or in combination with other effects; and* *(b) also includes the following:* *(i) a potential effect of high probability, and* *(ii) a potential effect of low probability that has a high potential impact*

Environment	has the same meaning as in the Biosecurity Act 1993: *"includes—* *(a) ecosystems and their constituent parts, including people and their communities; and* *(b) all natural and physical resources; and* *(c) amenity values; and* *(d) the aesthetic, cultural, economic, and social conditions that affect or are affected by any matter referred to in paragraphs (a) to (c)."*
Environment Southland	means the Southland Regional Council *Te Taiao Tonga*.
Environmental values	means 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.
Exacerbator	means the person creating, aggravating or contributing to a particular pest management problem that the SRPMP proposes to resolve, by action or inaction.
Feral	means wild or otherwise unmanaged.
Good Neighbour Rule	has the same meaning as in the Biosecurity Act 1993: *"means a rule to which the following apply:* *(a) it applies to an occupier of land and to a pest or pest agent that is present on the land;and* *(b) it seeks to manage the spread of a pest that would cause costs to occupiers of land that is adjacent or nearby;and* *(c) it is identified in a regional pest management plan as a good neighbour rule; and* *(d) it complies with the directions in the national policy direction relating to the setting of good neighbour rules."*
Good	is defined under the Act as any personal property.
Habitat	means the place or type of site where an organism or population normally exists.
Indigenous	means produced by, or naturally belonging to, a particular region or area.
Management agency	has the same meaning as in the Biosecurity Act 1993: *"the body specified as the management agency in a pest management plan or a pathway management plan."* For the purposes of the SRPMP, Environment Southland is the management agency.

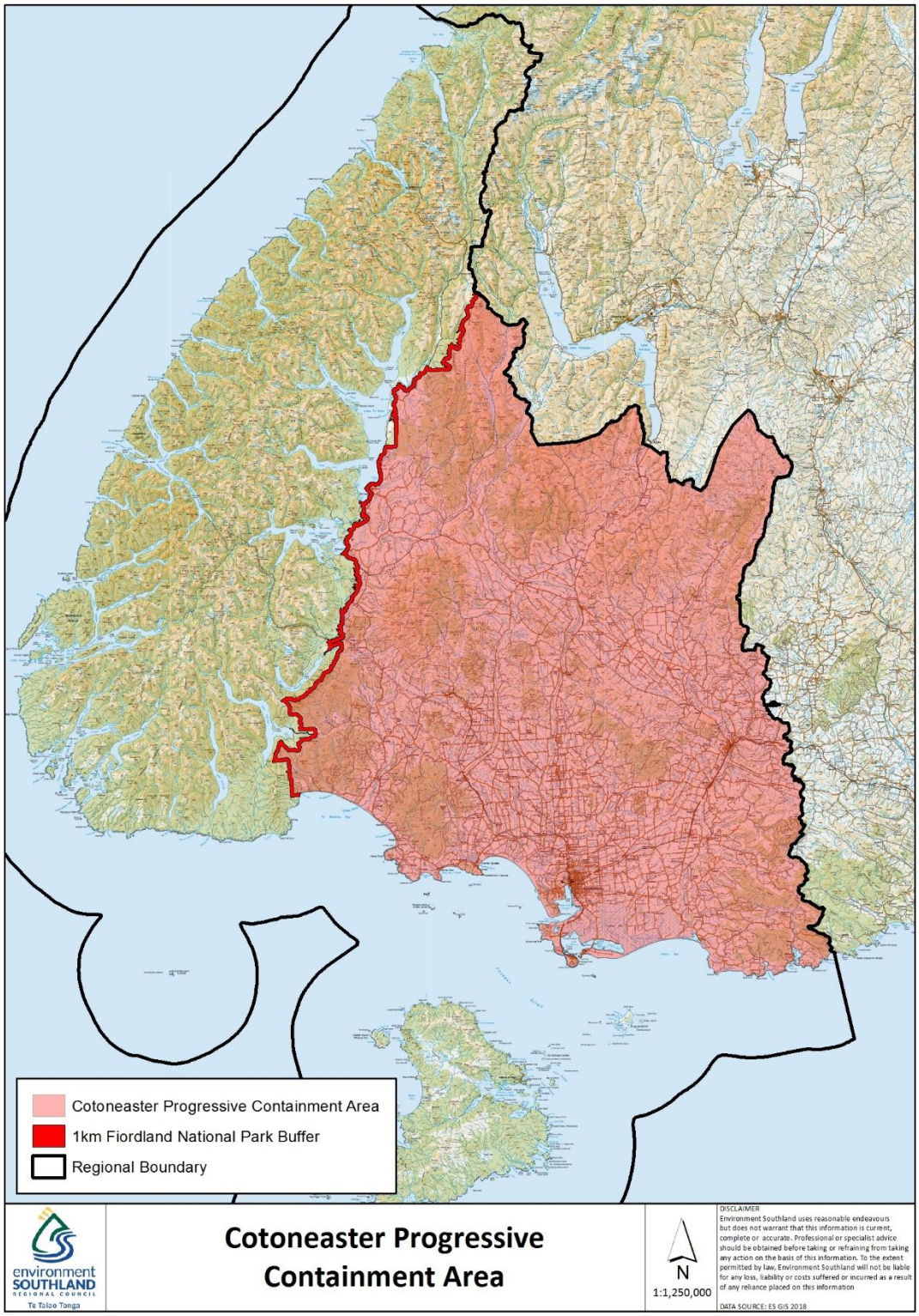
Monitoring	in relation to a pest or other organisms to be controlled means to observe and measure the presence or distribution of a pest or other organism to be controlled.
National Policy Direction	in respect of the SRPMP, means the National Policy Direction for Pest Management 2015 made under Sections 56-58 of the Act.
Non-arable land	land not suitable for growing crops.
Occupier	has the same meaning as in the Biosecurity Act 1993: *"(a) in relation to any place physically occupied by any person, means that person; and* *(b) in relation to any other place, means the owner of the place; and* *(c) in relation to any place, includes any agent, employee, or other person, acting or apparently acting in the general management or control of the place."*
Organism	has the same meaning as in the Biosecurity Act 1993: *"(a) does not include a human being or a genetic structure derived from a human being;* *(b) Includes a micro-organism;* *(c) subject to paragraph (a) of this definition, includes a genetic structure that is capable of replicating itself (whether that structure comprises all or only part of an entity, and whether it comprises all or only part of the total genetic structure of an entity);* *(d) includes an entity (other than a human being) declared by the Governor-General by Order in Council to be an organism for the purposes of this Act;* *(e) includes a reproductive cell or developmental stage of an organism;* *(f) includes any particle that is a prion.*"
Person	has the same meaning as in the Biosecurity Act 1993: *"includes the Crown, a corporation sole, and a body of persons (whether corporate or un-incorporate)."*
Pest	has the same meaning as in the Biosecurity Act 1993: *"an organism specified as a pest in a pest management strategy."*
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*"
Pest Management Plan	has the same meaning as in the Biosecurity Act 1993: *"a plan, made under Part 5 of this Act, for the management or eradication of a particular pest or pests."*

Plant	means any plant, tree, shrub, herb, flower, nursery stock, culture, vegetable, or other vegetation; and also includes fruit, seed, spore and portion or product of any plant; and also includes all aquatic plants.
Propagation	means to multiply or reproduce by sowing, grafting, breeding or any other way.
Sale	includes bartering; attempting to sell; having in possession for sale; sending or delivery for sale; causing or allowing to be sold, offered or exposed for sale. "Sell" has a corresponding meaning.
Subject	in relation to a proposal for a pest management plan, means the organism or organisms proposed to be specified as a pest or pests under the plan; and in relation to a pest management plan, means the pest to which the SRPMP applies.
Wilding conifer	Wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in Table 3, established by natural means, unless it is located within a plantation forest, and does not create any greater risk of wilding conifer spread to adjacent or nearby land than the plantation forest that it is a part of.

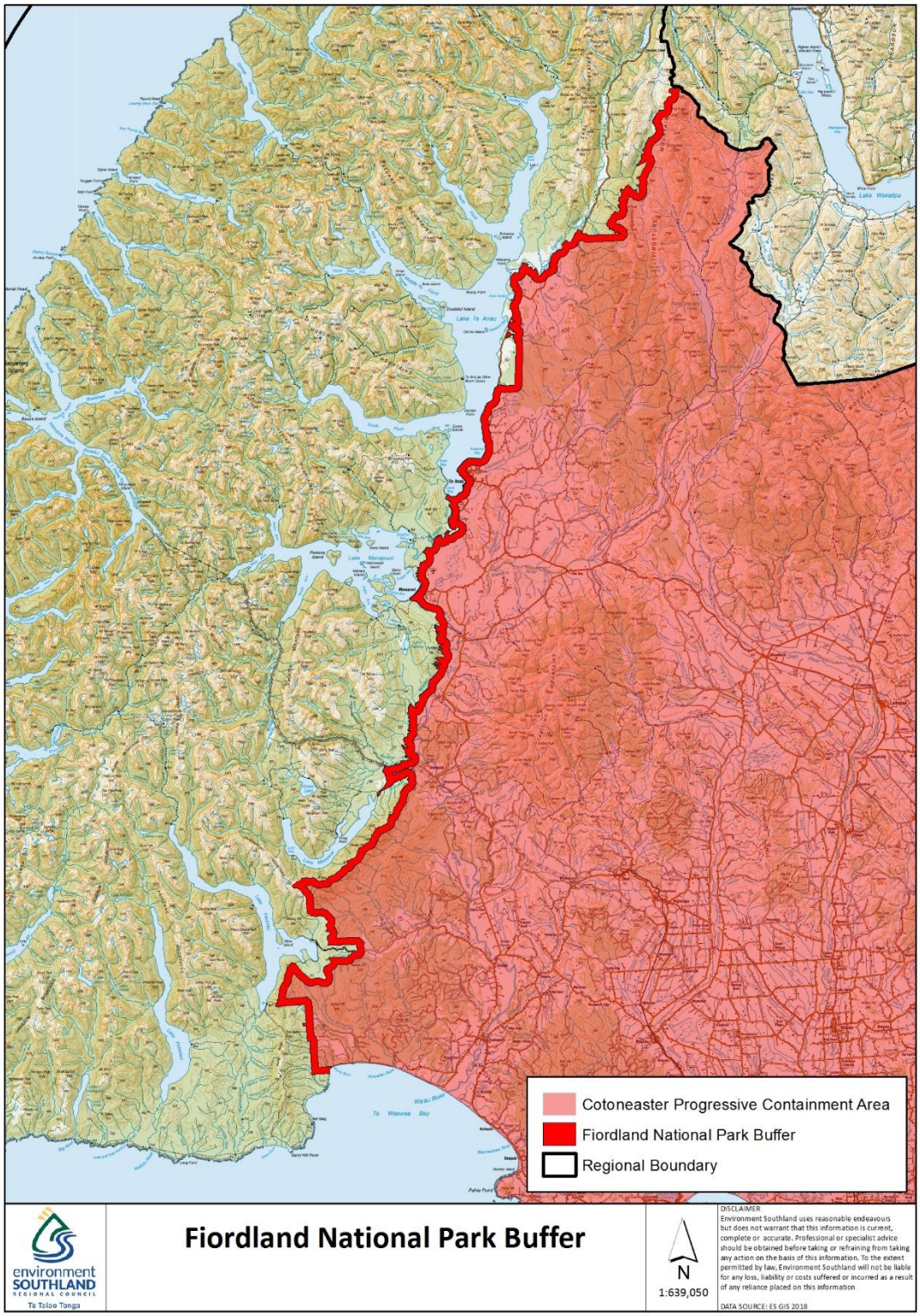
Appendices

Appendix 1: Maps

Map 1a



Map 1b


Cotoneaster Progressive Containment Area
Fiordland National Park Buffer
Regional Boundary
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
Fiordland National Park Buffer
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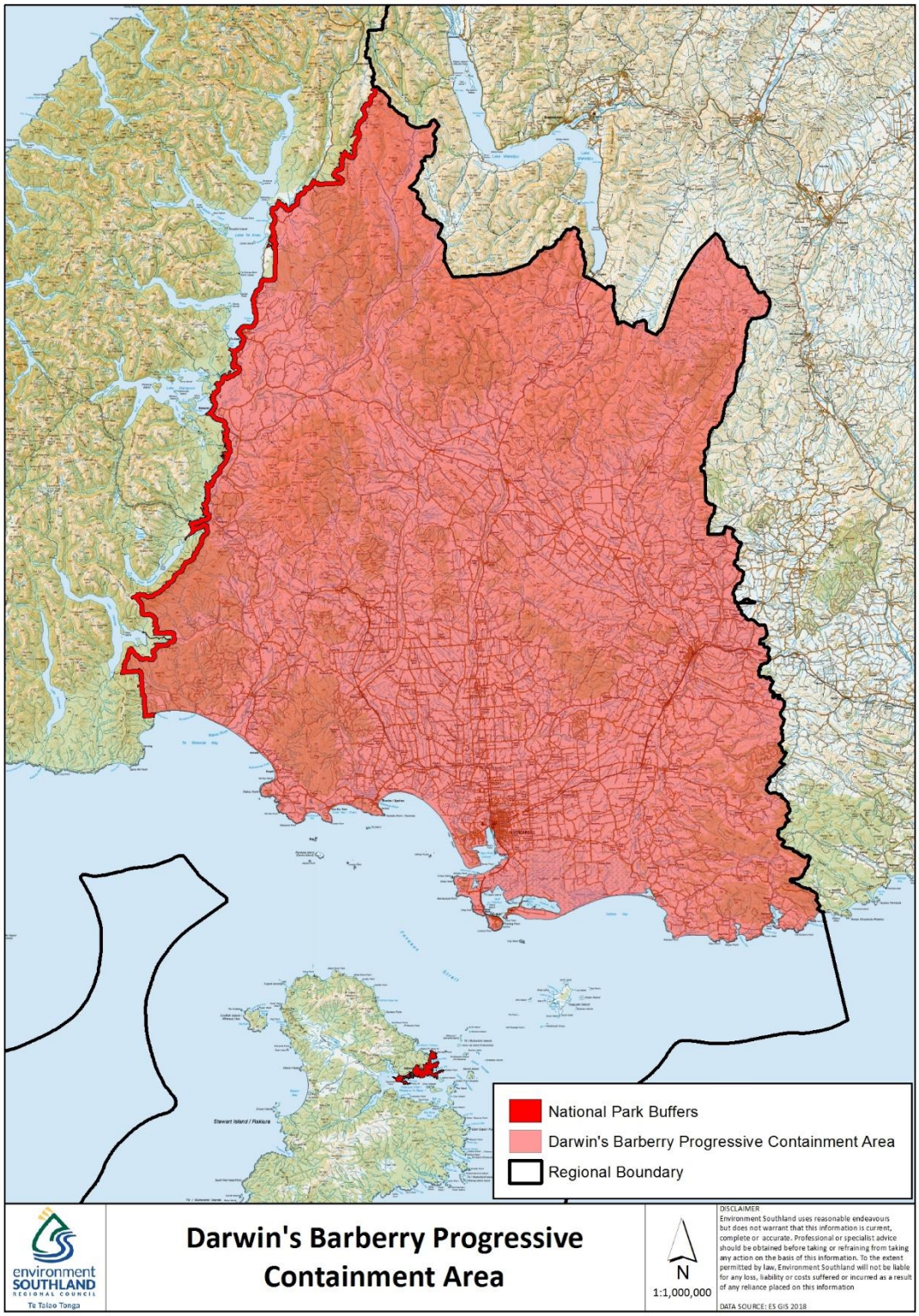
DATA SOURCE: ES GIS 2018

Map 2a


National Park Buffers
Darwin's Barberry Progressive Containment Area
Regional Boundary
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
Darwin's Barberry Progressive Containment Area
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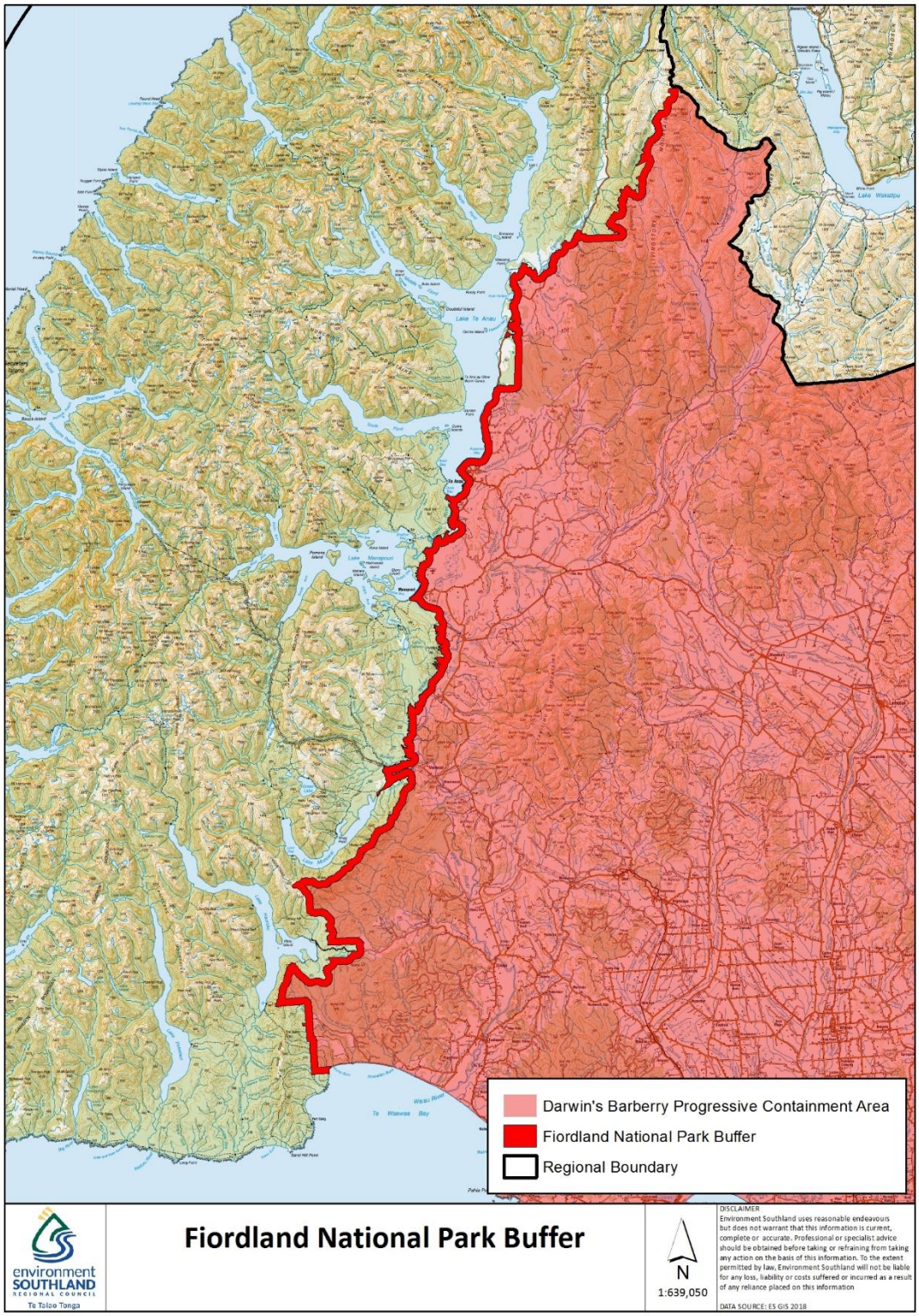
DATA SOURCE: ES GIS 2018

Map 2b


Darwin's Barberry Progressive Containment Area
Fiordland National Park Buffer
Regional Boundary
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
Fiordland National Park Buffer
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DATA SOURCE: ES GIS 2018

Map 2c

Rakiura National Park Buffer
Regional Boundary
Stewart Island / R
Paterson Inlet / Whaka a Te Wera
Port William / Potirepo
Ulva Island
Native Island
Ackers Point
Halfmoon Bay
Horseshoe Bay
Sawdust Bay
Rakiura National Park Buffer
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
N
1:65,802
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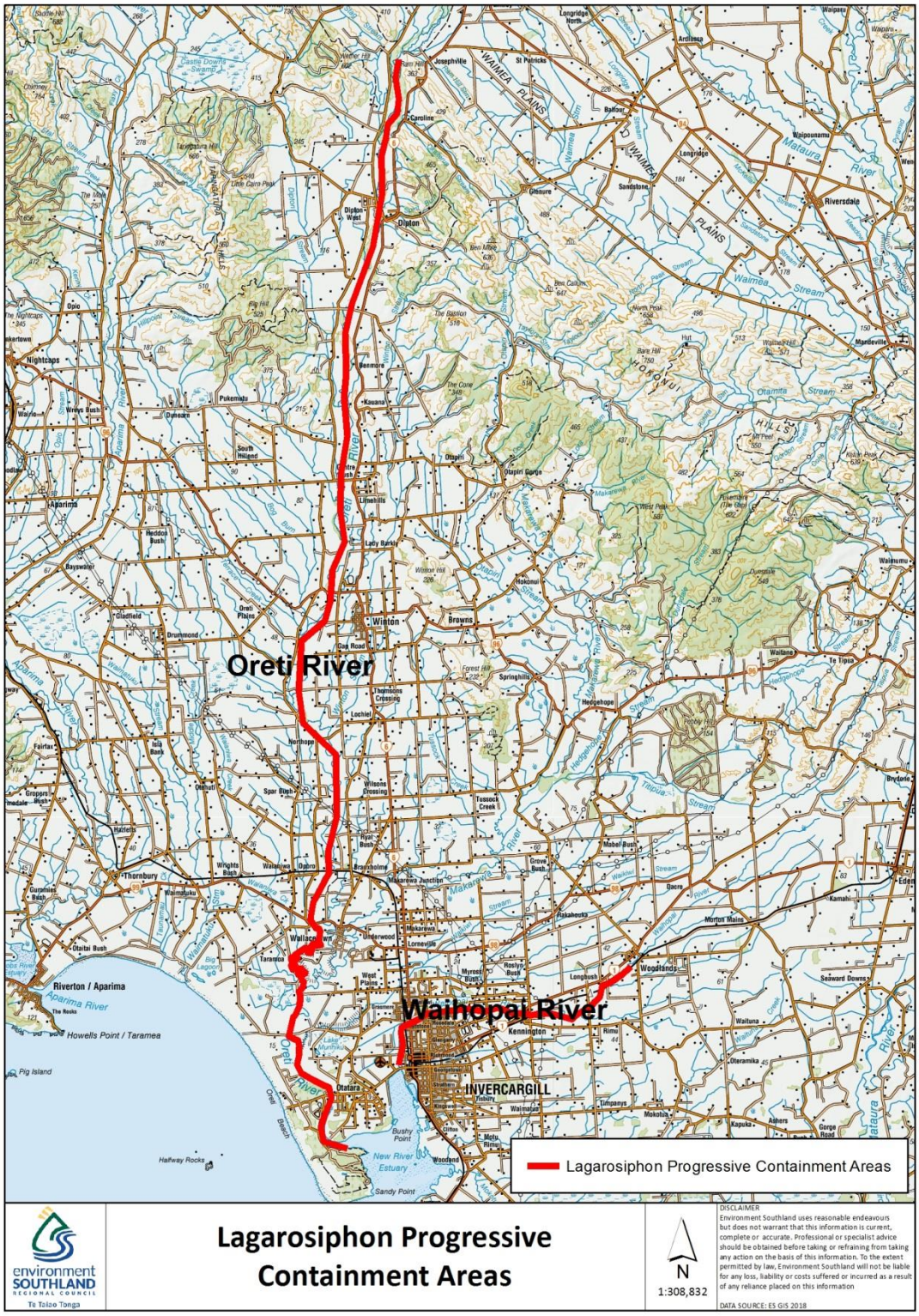
DATA SOURCE: ES GIS 2018

Map 3


Oreti River
Waihopai River
INVERCARGILL
Lagarosiphon Progressive Containment Areas
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
Lagarosiphon Progressive Containment Areas
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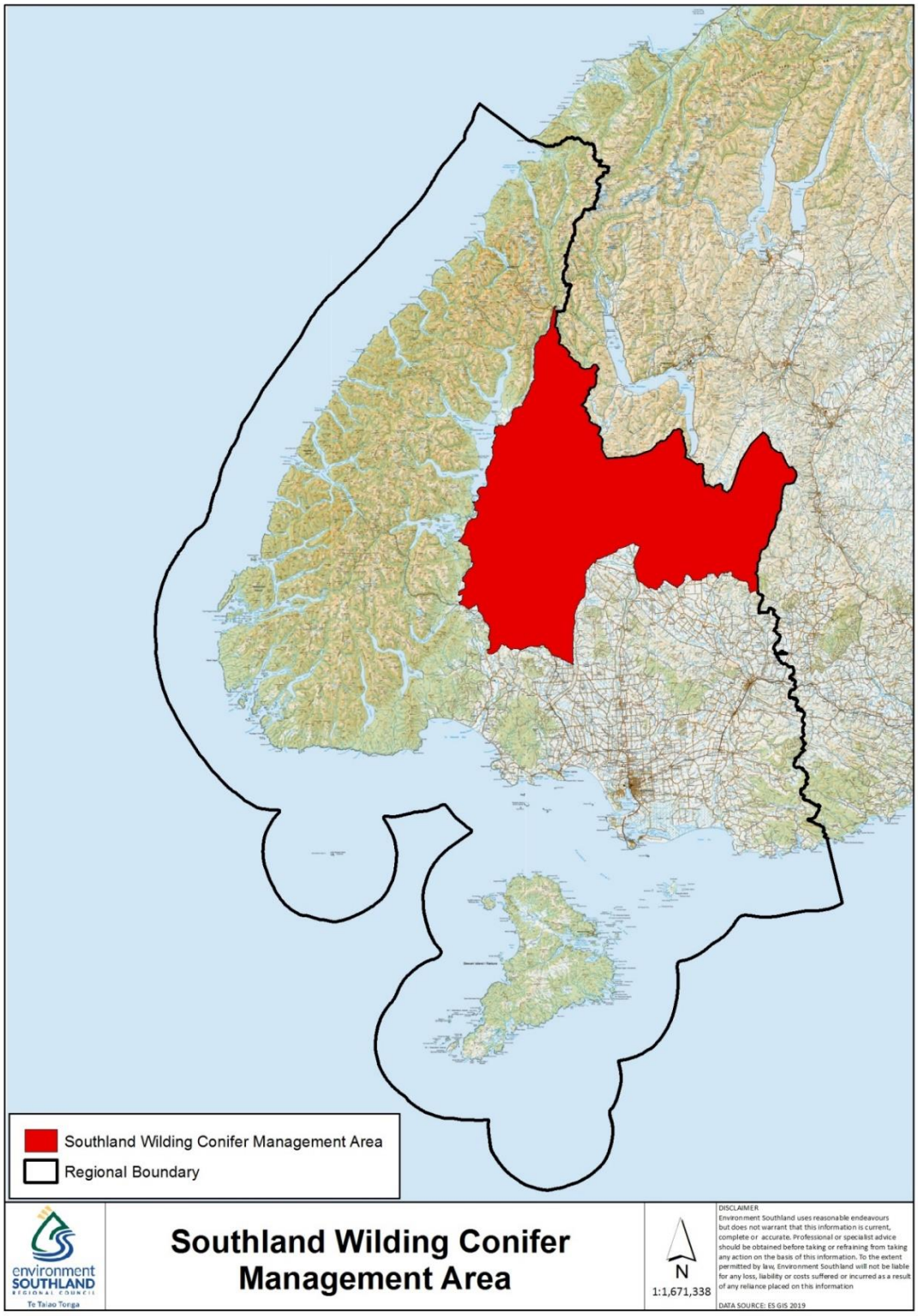
DATA SOURCE: ES GIS 2018

Map 4


Southland Wilding Conifer Management Area
Regional Boundary
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
Southland Wilding Conifer Management Area
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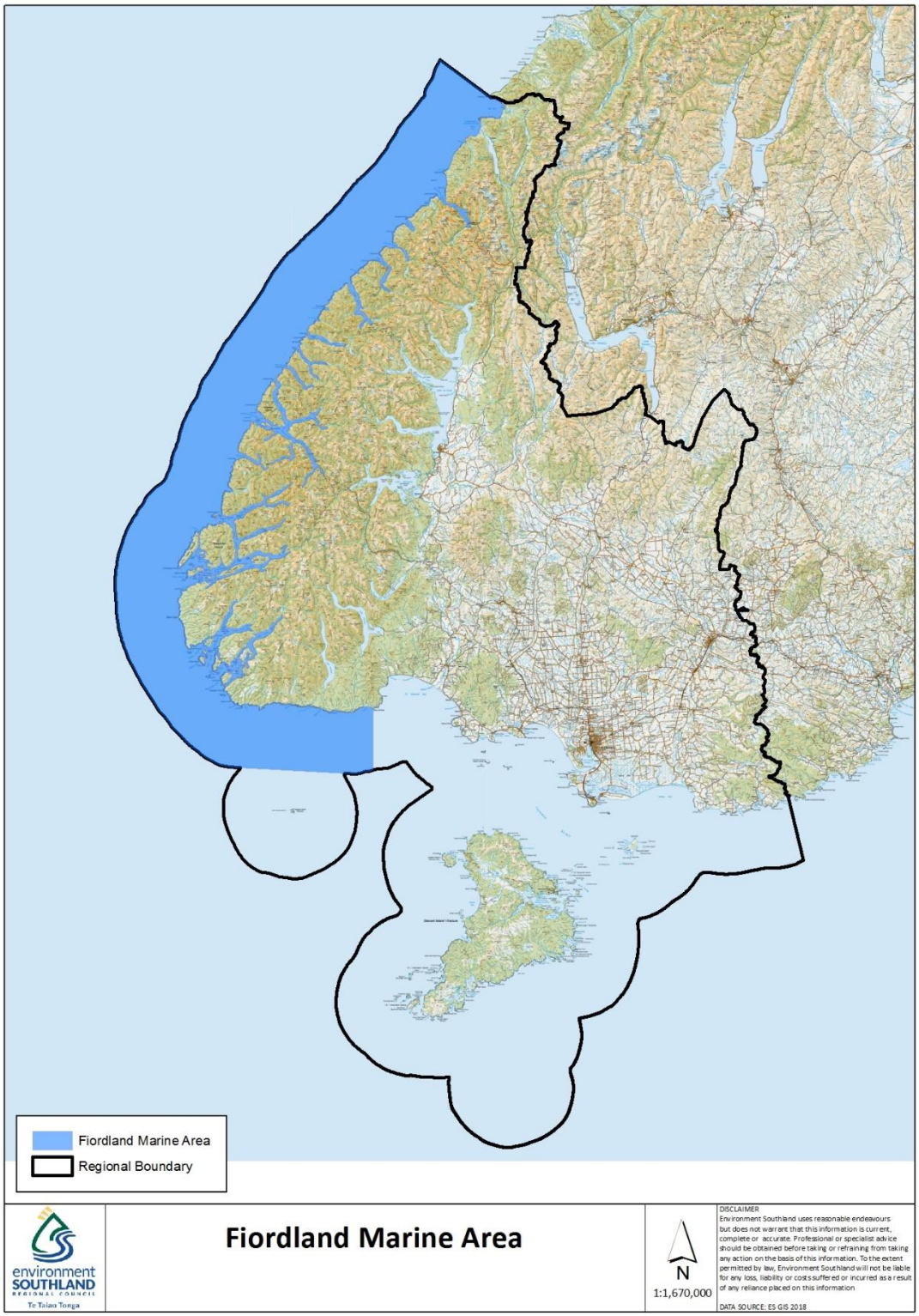
DATA SOURCE: ES GIS 2019

Map 5a


Fiordland Marine Area
Regional Boundary
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
Fiordland Marine Area
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DATA SOURCE: ES GIS 2018

Map 5b

Breaksea Sound
Bluff
Waipapa Point
Ruapuke Island
Oban
Patersons Inlet
Big Glory Bay
Port Adventure
Known Undaria Sites
Regional Boundary
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
Known Undaria Presence in Southland
N
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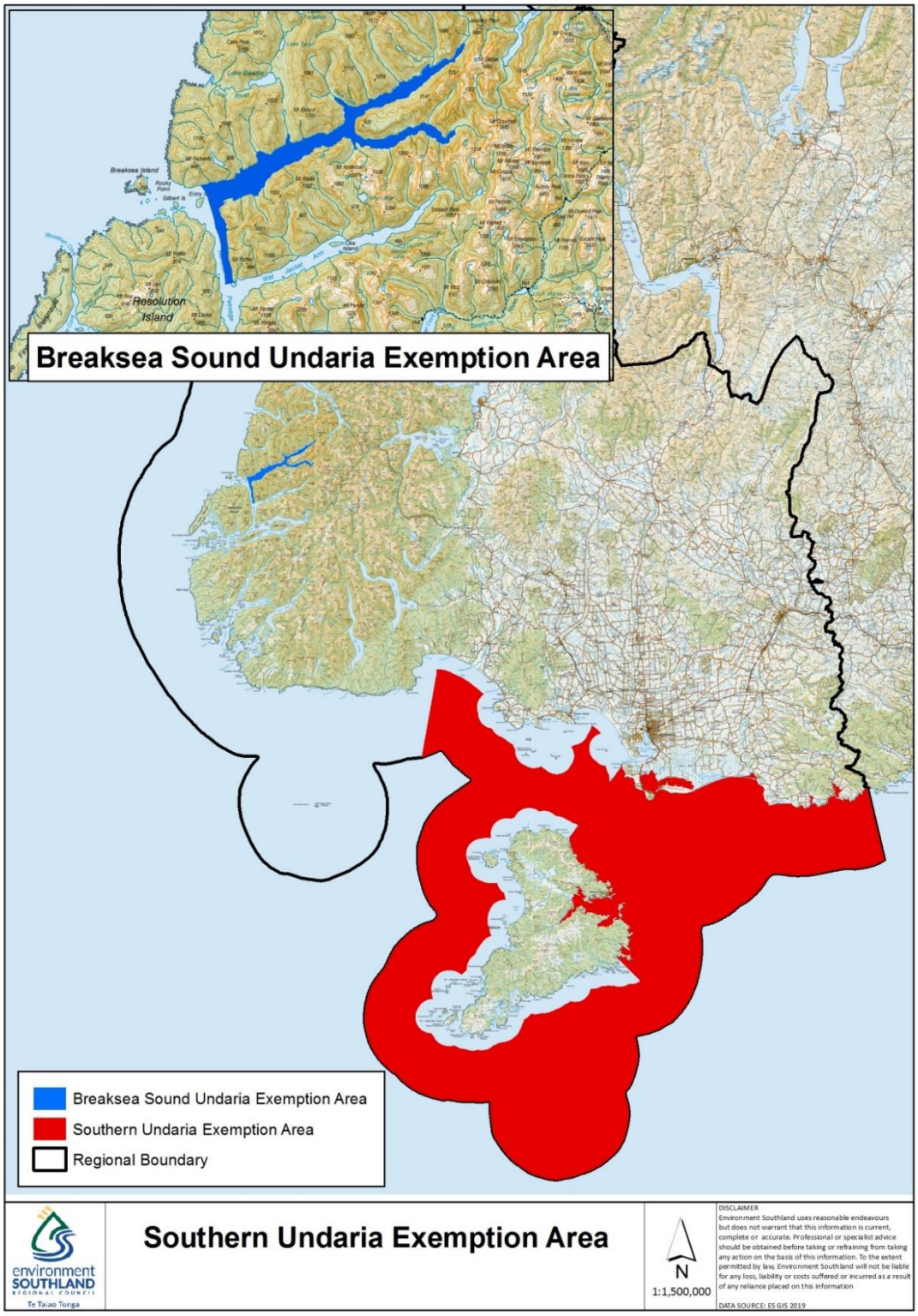
DATA SOURCE: ES GIS 2018

Map 5c


Breaksea Sound Undaria Exemption Area
Breaksea Island
Resolution Island
Breaksea Sound Undaria Exemption Area
Southern Undaria Exemption Area
Regional Boundary
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
Southern Undaria Exemption Area
N
1:1,500,000
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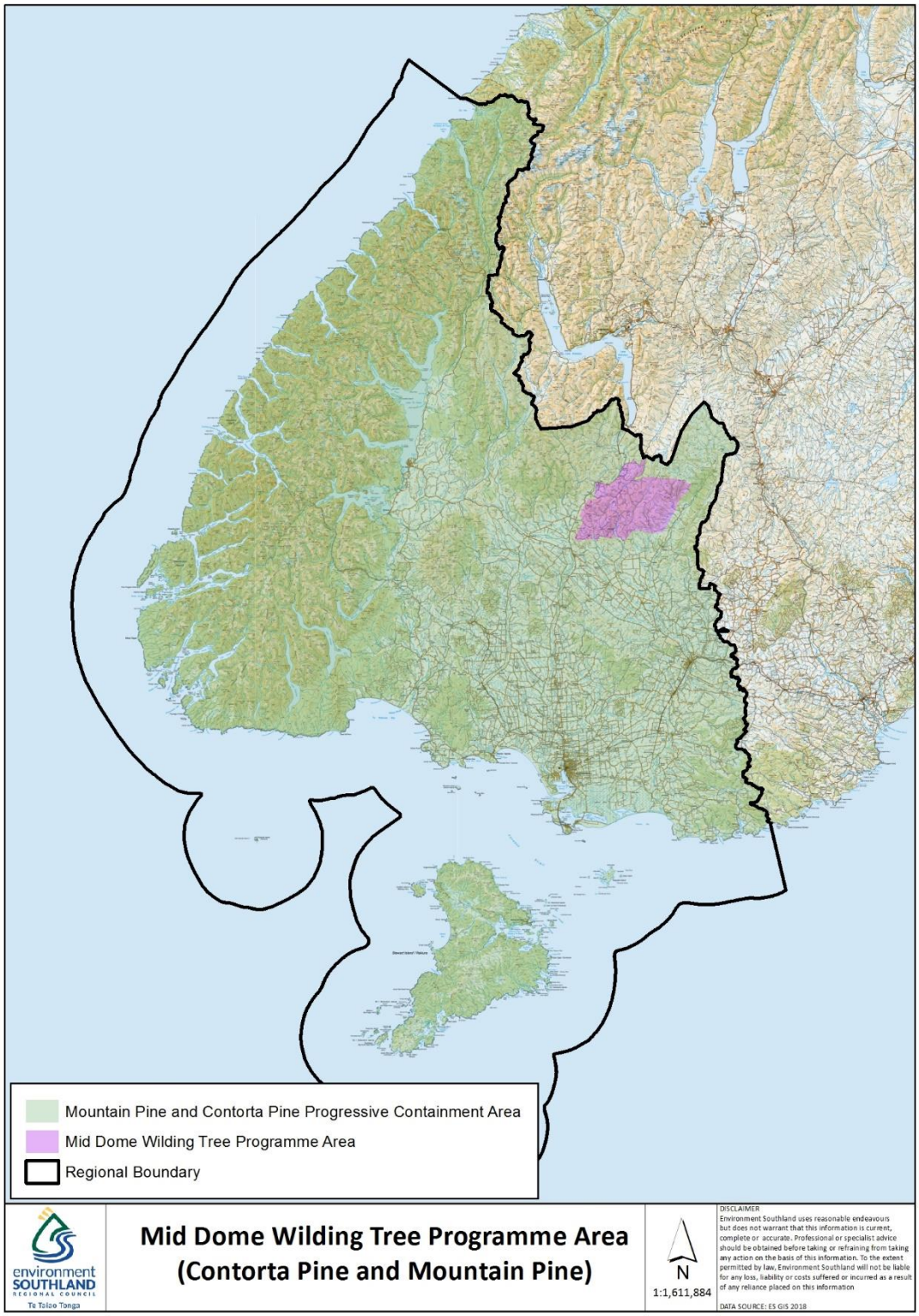
DATA SOURCE: ES GIS 2019

Map 6


Mountain Pine and Contorta Pine Progressive Containment Area
Mid Dome Wilding Tree Programme Area
Regional Boundary
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
Mid Dome Wilding Tree Programme Area
(Contorta Pine and Mountain Pine)
N
1:1,611,884
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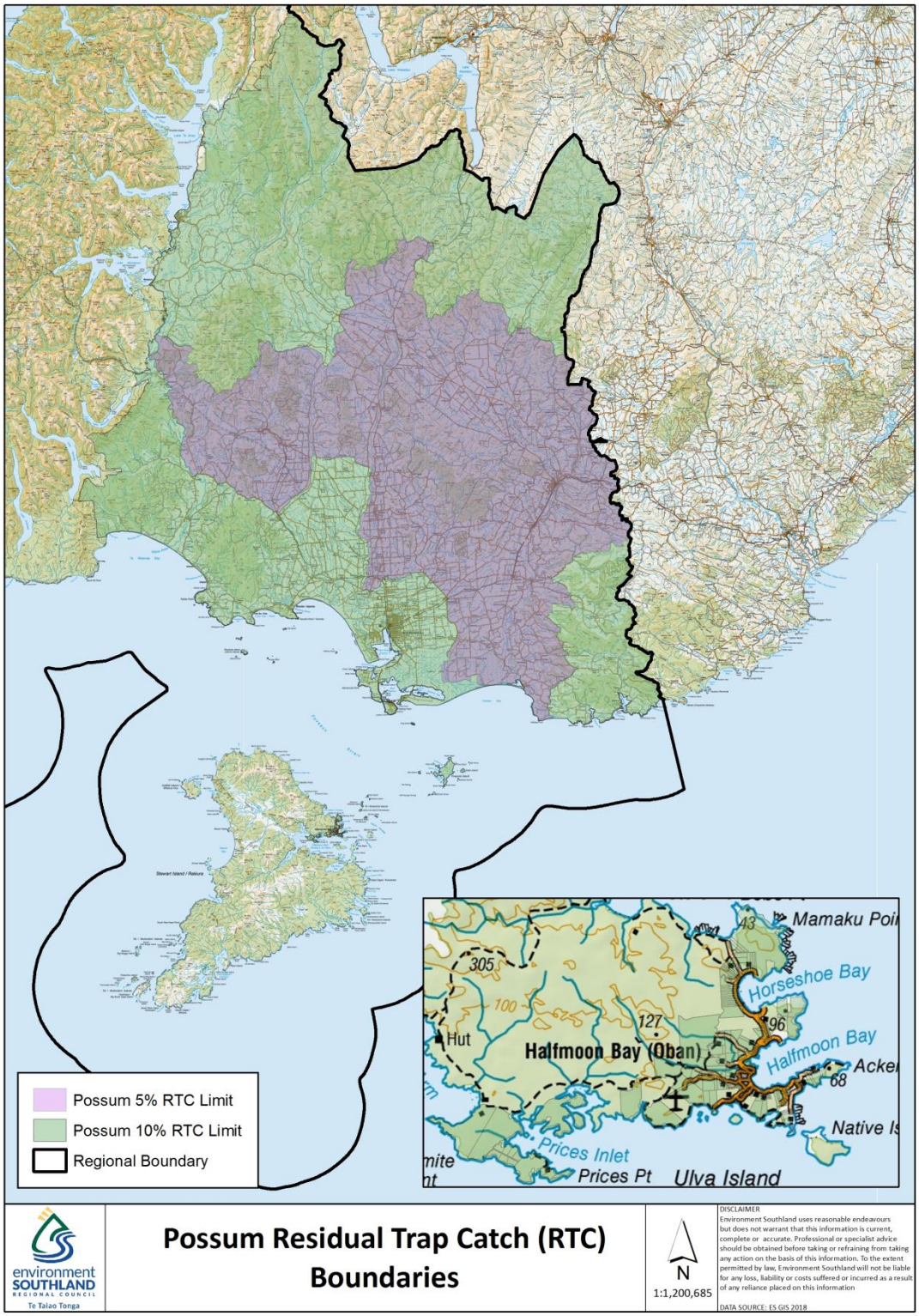
DATA SOURCE: ES GIS 2018

Map 7


Possum 5% RTC Limit
Possum 10% RTC Limit
Regional Boundary
Mamaku Poi
Horseshoe Bay
Halfmoon Bay (Oban)
Halfmoon Bay
Hut
Prices Inlet
Prices Pt
Ulva Island
Native Is
305
100
127
96
68
43
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
Possum Residual Trap Catch (RTC) Boundaries
N
1:1,200,685
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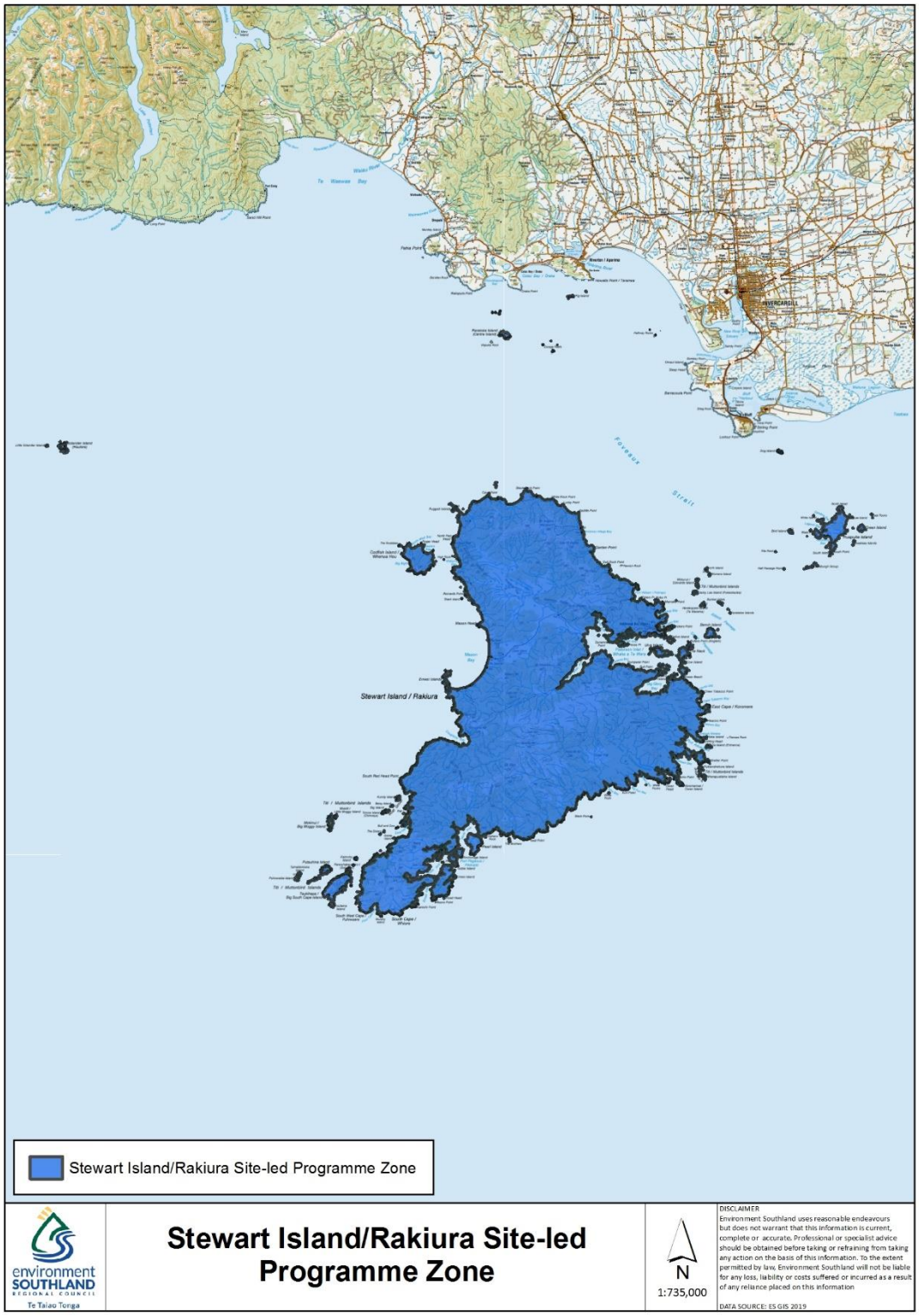
DATA SOURCE: ES GIS 2018

Map 8


Stewart Island / Rakiura
Stewart Island/Rakiura Site-led Programme Zone
environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga
Stewart Island/Rakiura Site-led Programme Zone
N
1:735,000
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DATA SOURCE: ES GIS 2019

Appendix 2: Guidance for amending or creating new site-led programmes

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 community support for the programme, including from owners and/or 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 will be delivered. ▪ the nature and level of support needed from Environment Southland. ▪ the appropriateness of proposed rules for the site-led programme. • The programme is resourced for its duration.

Appendix 3: Modified McLean Scale (2012)

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