



# Proposal for a **Southland Regional Pest Management Plan**



# **Proposal for a Southland Regional Pest Management Plan**

**August 2018**

**Publication No 2018-11  
ISBN No: 978-0-909043-33-9**

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# Part One

## Plan Establishment



# 1 Introduction

## 1.1 Proposal for a Southland Regional Pest Management Plan

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.

Environment Southland is currently undertaking a review of the Regional Pest Management Strategy for Southland - 2013 (the Strategy), and has therefore produced this Proposal for a Southland Regional Pest Management Plan ("the Proposal").

This document has been prepared in accordance with Part 5 of the Act. It forms the Proposal required to be developed by Environment Southland to "make" the Southland Regional Pest Management Plan (RPMP, or the Plan). When the new Plan commences it will replace the existing Strategy.

In conjunction with the Plan, 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. How Environment Southland manages biosecurity, including the management of organisms capable of causing adverse or undesirable effects is covered in the Biosecurity Strategy. The Biosecurity Strategy discusses all tools available to Environment Southland, both regulatory and non-regulatory, to manage biosecurity risks for any organism, not just those formally specified as pests in the RPMP.

Environment Southland is undertaking consultation on the Proposal and will notify the Proposal for public submissions during the period from 28 August to 23 October 2018. A hearing panel will hear submissions received on the Proposal. Following the hearing, Environment Southland will release a written report, which will set out its decisions on the Plan and the reasons for accepting or rejecting the submissions on the Proposal. Any person who made a submission on the Proposal may make an application (similar to an appeal) to the Environment Court on any aspect of the Plan.

## 1.2 Purpose of the Plan

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

The overall reasons for proposing the Plan 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.

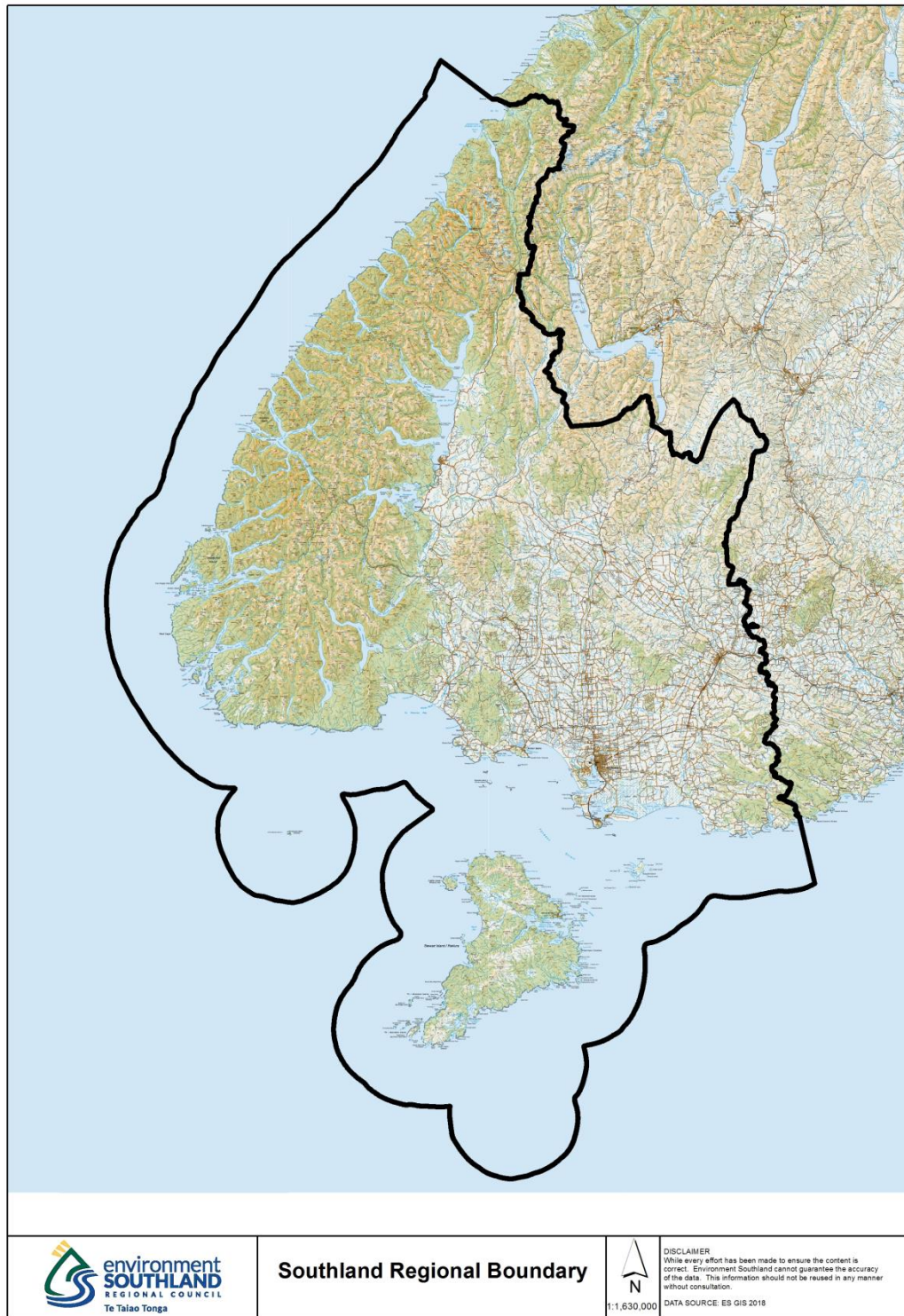
While many organisms in the Southland region are considered undesirable or a nuisance, not all of these organisms are suitable for management in the RPMP. The Proposal only addresses organisms for which statutory intervention is required because voluntary action is insufficient. This could be due to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

The Biosecurity Act 1993 (the Act) has prerequisite criteria that must be met to justify such intervention. This Proposal identifies those organisms specified as pests to be managed through the RPMP. Once the RPMP commences it will empower Environment Southland to exercise the relevant advisory, service delivery, regulatory and funding provisions available under the Act to deliver the specific objectives identified in Part Two of this Proposal.

### **1.3 Geographic coverage of the Plan**

The proposed RPMP 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 Proposal apply to the entire Southland region. The geographic area for each site-led programme is shown in Appendix 1.





**Figure 1: The Southland Region to be covered by the Proposal**

## 1.4 Duration

The RPMP 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 RPMP may cease at an earlier date if Environment Southland declares by public notice that the RPMP's objectives have been achieved. It may also cease at an earlier date if, following a review, it is revoked.

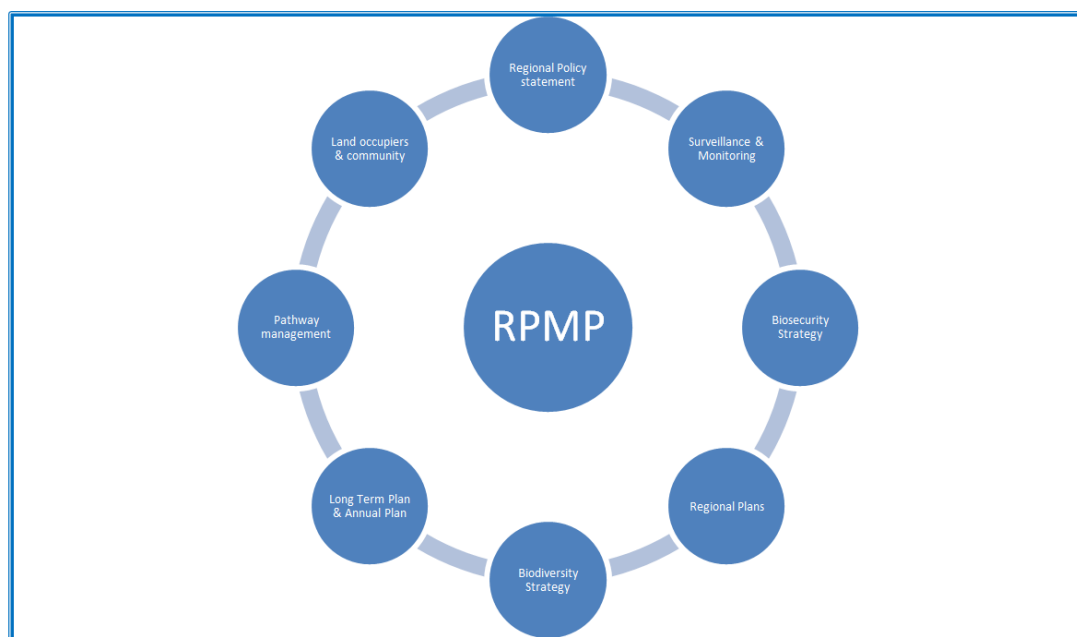
The RPMP may be amended during this time to add organisms requiring pest status or to add additional sites to the existing site-led programmes using the criteria established in Appendix 3. Amendments may require notification, depending on the scope of the changes proposed and the willingness of impacted parties to be bound by the provisions of the plan.

## 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 RPMP 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 RPMP. Environment Southland will give effect to the Biosecurity Strategy and the RPMP 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 Plan 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 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](http://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.

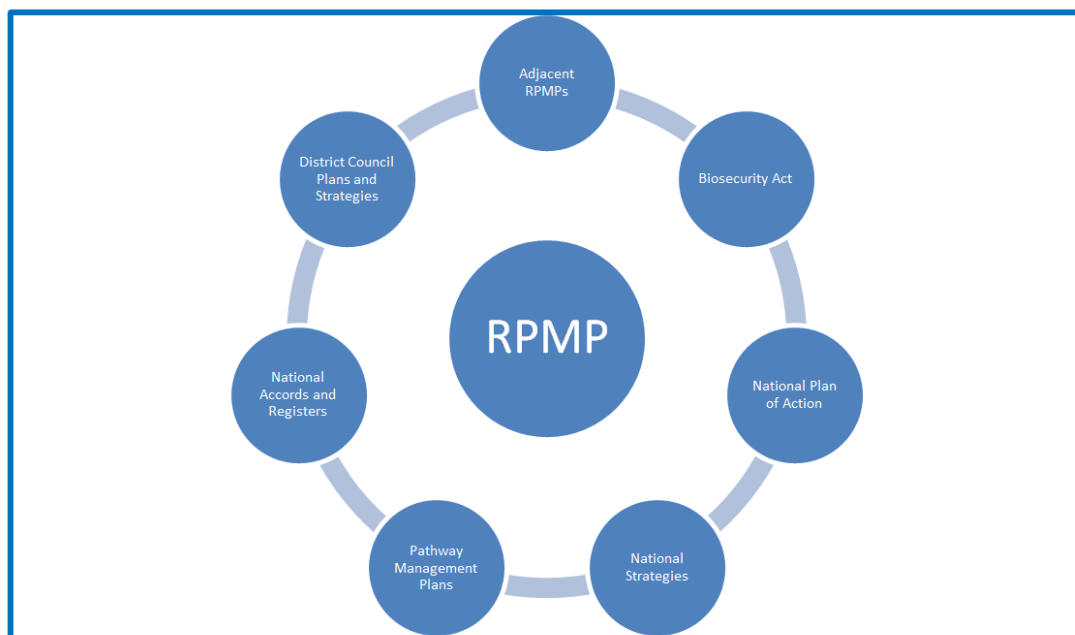


Figure 3: New Zealand's biosecurity system



## 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).

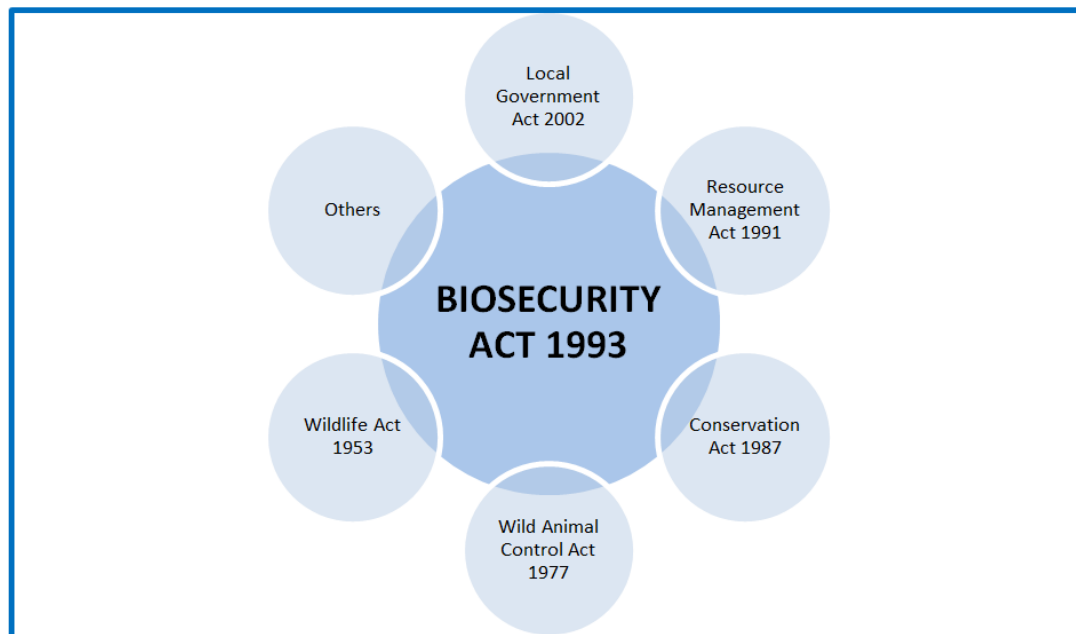


Figure 4: Legislative instruments relevant to biosecurity

### 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 RPMP. 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). RPMPs 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 for, “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 Proposal align with the requirements of clause 4 of the NPD.   |
| The use of programmes           | The types of programmes (described in Part 2 of the Proposal) 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 accompanies the proposal. It will also be available on the Environment Southland website. |
| Funding rationale is noted      | The funding rationale described in Section 9 of Part 3 of the Proposal 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)(iii)), 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 RPMP 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 continues to be in effect while under review and until the RPMP is in force.

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 RPMP's authority, including the enforcement of the rules, may be used.

## 2.4 Relationship with other plans and regulations

An RPMP must not be inconsistent with:

- (i) any national pest management plan or RPMP 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<sup>1</sup>.

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<sup>1</sup> 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 Proposal 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 Proposal must not be inconsistent with the Southland Regional Policy Statement 2017 (RPS) or any regional plan development in accordance with the RMA. The Proposal is complementary to the policies and methods the RPS and there is no inconsistency between the Proposal and the RPS and relevant regional plans, including the provisions that relate to marine pests included in the Regional Coastal Plan for Southland.

| 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 | <p>(a) Implement regional pest management programmes and plans to maintain, enhance or restore indigenous ecosystems and habitats to a healthy functioning state.</p> <p>(b) Assist individuals and groups with pest plant and pest animal management.</p>         |

There are no known inconsistencies with any regulations.

## 2.5 Relationship with Māori

One specific purpose of an RPMP 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 Proposal and will continue after the Plan takes effect.

## 2.6 Consultation overview

Environment Southland has undertaken extensive consultation with targeted groups and with the wider community on the future of biosecurity management and the development of a new plan since 2011. An initial public discussion document was circulated in 2012 and a total of 136 informal submissions were received. This input was incorporated into the review process.

In addition, discussions have been held with the Iwi represented by Ngāi Tahu, the Rakiura Tītī islands Administering Body and The Rakiura Māori Land Trust. Discussions have also taken place with the Department of Conservation, Land Information New Zealand, Federated Farmers, Fish and Game, NZ Deerstalkers Association, Southland Conservation Board, Forest and Bird, as well as with community-based groups. Environment Southland has also held several Council workshops as part of the RPMP development process where local authorities, organisations, community groups and individuals have been invited to participate.

Issues raised during consultation have been considered by staff in the preparation of the Proposal and have been addressed where appropriate throughout the Proposal.

No provisions of the plan affect Ministers' responsibilities.

| Date     | Consultation  | Outcome  |
|----------|---|--|
| 25/08/11 | Interim Regional Pest Management Strategy Performance Evaluation Report - over the period September 2007 – June 2011.                         | Internal evaluation of RPMS performance.   |
| 25/01/12 | Managing Pests in Southland – the next 10 years - Initial Public Discussion Document For the Review of the Regional Pest Management Strategy. | Public release to inform community and gauge community interest through submissions.                 |
| 20/02/13 | New Zealand Deerstalkers Association consultation on RPMP.  | Targeted consultation.   |
| 03/03/12 | Deadline for informal submissions – 131 received. Feedback summary March 2016.  | Gauge community interest through submissions – refine species and programmes to evaluate.            |
| 01/03/12 | RPMP informal discussions with SIRCET in Halfmoon Bay.  | Targeted consultation.   |
| 05/06/12 | Regional Pest Management Review public meeting – Invercargill.  | Invitation, minutes initial public discussion document prepared and information booklet distributed. |

| Date     | Consultation   | Outcome   |
|----------|--|---|
| 28/02/13 | Preliminary consultation meeting with Crown agencies over the development of GNRs for Environment Southland's Regional Pest Management Plan. | Refine extent and nature of GNRs.   |
| 03/02/14 | Ohai - Nightcaps Lions – talk.   | Targeted consultation.  |
| 23/03/16 | Council Workshop – National Policy Direction on Regional Pest Management Plans.  | Update council on RPMP proposal, the NPD and input on council priorities received.  |
| 05/04/16 | RPMP consultation with Te Ao Marama  | Targeted consultation.  |
| 26/05/16 | RPMP Review - Research on community reports/issues since 2007 and input from informal submissions April 2016.                                | Refining community priorities and areas of interest for proposal development.   |
| 07/06/16 | RPMP consultation with Department of Conservation senior management.   | Targeted consultation.  |
| 12/07/16 | RPMP consultation with Department of Conservation staff.   | Targeted consultation.  |
| 17/08/16 | Council workshop.  | Update council on RPMP proposal, input on council priorities received.  |
| 13/09/16 | Halfmoon Bay community meeting.  | Targeted consultation.  |
| 10/10/17 | Rakiura Land Trust Meeting – Kelvin Hotel.   | Targeted consultation.  |
| 17/10/16 | Otago Regional Council RPMP development discussion – Dunedin.  | Consistency and shared areas of interest established. Discussion on cross border issues.  |
| 21/10/16 | Southland Conservation Board – meeting, presentation and feedback.   | Targeted consultation.  |
| 31/10/16 | Letters to Omaui and Stewart Island/Rakiura owners and/or occupiers regarding proposed site-led rules.                                       | Targeted consultation.  |
| 02/11/16 | Council/stakeholder workshop   | Feedback and suggestions sought from Councillors and key stakeholders on the pests and programmes that should be contained in a |



| Date     | Consultation  | Outcome  |
|----------|---|--|
|          |   | new Southland Regional Pest Management Plan.   |
| 19/12/16 | Stakeholder follow up workshop with Department of Conservation, Federated Farmers, Iwi, Forest and Bird, Fish and Game etc. | Targeted consultation.   |
| 22/08/17 | Councillor/stakeholder workshop   | Continuation of feedback and suggestions sought from Councillors and key stakeholders on the pests and programmes that should be contained in a new Southland Regional Pest Management Plan. |
| 12/09/17 | Department of Conservation - southern South Island meeting following stakeholder workshop.                                  | Targeted consultation.   |
| 01/09/17 | Otago Regional Council RPMP co-ordination – Balclutha.  | Ongoing consistency and shared areas of interest checking.   |
| 09/10/17 | RTIAB – Rakiura Tītī Islands Administering Body – re: RPMP site-led programmes.   | Targeted consultation.   |
| 11/12/17 | Rayonier/Matariki Forests – discussion of wilding conifer issues from planted forests in inland Southland.                  | Targeted consultation.   |

### **3. Responsibilities and obligations**

#### **3.1 The management agency**

Environment Southland proposes to be the management agency responsible for implementing the RPMP because it:

- (a) is accountable to the Plan funders, including Crown agencies, through the requirements of the LGA 2002;
- (b) has implemented previous Regional Pest Management Strategies; and
- (c) has the capacity, competency and expertise to implement the RPMP.

How Environment Southland will undertake its management responsibilities is set out in Part Three (Procedures) of the proposed Plan. Environment Southland has also prepared a draft Operational Plan, which details how the Biosecurity Strategy and the RPMP will be given effect. A summary of the draft 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 RPMP 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).

This Proposal treats all private land equitably and emphasises the responsibilities and obligations of all land owners and/or occupiers, including Maori. 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 Maori 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 with regard to 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 RPMP 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 this Proposal 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.

This Proposal 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.

### **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, Maitai, 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 Proposal. 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 RPMP within the Southland region. However, there are a small number of pests for which this obligation is limited to the geographic area as determined by the site-led programmes applicable to them. 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 |
|--|---|--------------------------------------|-----|
| <b>Plants</b>                            |   |                                      |     |
| African club moss* <sup>3</sup>          | <i>Selaginella kraussiana</i>   | Site-led                             |     |
| Bomarea*                                 | <i>Bomarea multiflora</i>   | Progressive containment              |     |
| Boneseed*                                | <i>Chrysanthemoides monilifera</i>  | Exclusion                            |     |
| Boxthorn                                 | <i>Lycium ferocissimum</i>  | Eradication                          |     |
| Broom                                    | <i>Cytisus scoparius</i>  | Sustained control                    | ✓   |
| Buddleja                                 | <i>Buddleja davidii</i>   | Progressive containment              |     |
| Chilean needle grass*                    | <i>Nassella neesiana</i>  | Exclusion                            |     |
| Contorta (lodgepole) pine*               | <i>Pinus contorta</i>   | Progressive containment              |     |
| Cotoneaster                              | <i>Cotoneaster franchettii</i> , <i>C. glaucophyllus</i> , <i>C. simonsii</i> * | Progressive containment              |     |
| Darwin's barberry*                       | <i>Berberis darwinii</i>  | Progressive containment              |     |
| Field horsetail*                         | <i>Equisetum arvense</i>  | Eradication                          |     |
| German ivy                               | <i>Senecio mikanioides</i>  | Eradication                          |     |
| Giant buttercup                          | <i>Ranunculus acris</i>   | Progressive containment              |     |
| Gorse                                    | <i>Ulex europeaus</i>   | Sustained control                    | ✓   |
| Gunnera* <sup>3</sup>                    | <i>Gunnera tinctoria</i>  | Site-led                             |     |
| Hawthorn <sup>3</sup>                    | <i>Crataegus monogyna</i>   | Site-led                             |     |
| Heather                                  | <i>Calluna vulgaris</i>   | Progressive containment <sup>1</sup> |     |
| Japanese honeysuckle                     | <i>Lonicera japonica</i>  | Progressive containment              |     |
| Knotweed (Indian/Himalayan) <sup>3</sup> | <i>Persicaria wallichii</i> (syn <i>Polygonum polystachyum</i> )                | Site-led                             |     |
| Lagarosiphon                             | <i>Lagarosiphon major</i>   | Progressive containment              |     |
| Mountain pine                            | <i>Pinus mugo</i>   | Progressive containment              |     |
| Nassella tussock*                        | <i>Nassella trichotoma</i>  | Exclusion                            |     |
| Nodding thistle                          | <i>Carduus nutans</i>   | Sustained control                    | ✓   |
| Old man's beard*                         | <i>Clematis vitalba</i>   | Progressive containment              |     |
| Parrots feather*                         | <i>Myriophyllum aquaticum</i>   | Eradication                          |     |
| Purple loosestrife*                      | <i>Lythrium salicaria</i>   | Eradication                          |     |

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

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

\*\* Notifiable organism (s45 Biosecurity Act)

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

<sup>1</sup> Also subject to site-led programmes

<sup>2</sup> Wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in Table 2 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.

<sup>3</sup> Obligations under s52 and s53 of the Biosecurity Act 1993 are limited to the geographic area as determined by the site-led programmes applicable to them.

**Table 3: Introduced conifer trees**

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

## 4.2 Pest agents

There are some organisms specified as pest agents in the Proposal. 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 Proposal to ensure the success of the related pest objective.

**Table 4: Pest agents**

| Common Name        | Scientific Name   |
|--------------------|---|
| Pest agent conifer | <i>Pinus muricata, Pinus contorta, Pinus nigra Pseudotsuga menziesii, Larix decidua, Pinus pinaster, Pinus mugo and P.uncinata, Pinus ponderosa, Pinus radiata, Pinus sylvestris</i><br>(Any introduced conifer species that is capable of helping the spread of wilding conifers and is not otherwise specified as a pest in the Proposal and is not located within a plantation forest. |
| Domestic cat       | <i>Felis catus</i>  |
| Domestic goat      | <i>Capra aegagrus hircus</i>  |
| Domestic pig       | <i>Sus scrofa</i>   |

### 4.3 Organisms of interest

The organisms specified as pests under this Proposal 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 Plan may be necessary to include them as pests if any rules are necessary that require an owner and/or occupier to act.

Appendix 2 lists those organisms included in the category of “organisms of interest”.

### 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 Ministry for Primary Industries (MPI). 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 this Proposal 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 RPMP 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 this Proposal. 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 this Proposal. 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 RPMP 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 Plan. 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 Proposal 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 Proposal 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 Plan and the programme(s) to which they are assigned. The Proposal 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)<sup>2</sup>; 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          |
|--|--|---------------|
| <b>Plants</b>  |  |               |
| Boneseed   | <i>Chrysanthemoides monilifera</i>   | All Southland |
| Chilean needle grass                                       | <i>Nassella neesiana</i>   | All Southland |
| Nassella tussock   | <i>Nassella trichotoma</i>   | All Southland |
| <b>Animals</b>   |  |               |
| Rook   | <i>Corvus frugilegus</i>   | All Southland |
| Wallaby - Bennett's, Dama, Parma, Brushtail Rock and Swamp | <i>Macropus rufogriseus rufogriseus</i> , <i>M. eugenii</i> , <i>M. parma</i> , <i>Petrogale penicillata</i> , <i>Wallabia bicolor</i> | All Southland |
| <b>Marine</b>  |  |               |
| Asian paddle crab  | <i>Charybdis japonica</i>  | All Southland |
| Sabella (Mediterranean fanworm)                            | <i>Sabella spallanzanii</i>  | All Southland |

<sup>2</sup> 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) | <i>Styela clava</i> , <i>Eudistoma elongatum</i> , <i>Pyura doppelgangera</i> and <i>Didemnum vexillum</i> | 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   |  |
| <p><b>Boneseed</b> 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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>For these reasons boneseed is included in the Proposal.</p> |    |
| <p><b>Chilean needle grass</b> 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.</p> <p>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</p>  |  |

### 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 Proposal.

**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 Proposal.   |  |
| Animals   |  |
| <p><b>Rooks</b> 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.</p> <p>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.</p> <p>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.</p> <p>Rooks can adversely impact production and economic well-being.</p> <p>For these reasons rook is included in the Proposal.</p> |    |
| <p><b>Wallaby</b> 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.</p> <p>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 risk of</p>  |  |

### Description and adverse effects

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 Proposal.

### Marine

**Asian paddle crab** 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.

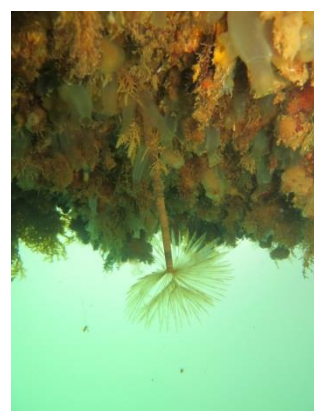
For these reasons Asian paddle crab is included in the Proposal.



**Sabella (Mediterranean fanworm)** 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 lifecycle. It is known to be present in New Zealand





### Description and adverse effects

marine waters and in a number of ports outside of Southland.

For these reasons Mediterranean fanworm is included in the Proposal.

**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 submerged habitats just below the waterline, but can be



### Description and adverse effects

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.

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 exhalant 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 test; 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 sea cages.

For these reasons, sea squirts are included in the Proposal.



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**

| <b>Objective, Principal Measures and Rules</b>   |   |
|--|---|
| <b>Plan Objective 1</b>  | <b>Principal measures to be used</b>  |
| 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 <sup>3</sup> .   | <p>Appropriate measures drawn from the suite of activities listed under <b>requirement to act, council inspection, service delivery, advocacy and education</b> described in Section 5.3 of the Proposal will be used to by Environment Southland to achieve Objective 1.</p> <p><b>Note:</b> <i>Environment Southland or other organisations will undertake control work unless an owner and/or occupier agrees in writing with Environment Southland to carry out the control work themselves.</i></p> <p><b>Alternatives considered</b></p> <p>Excluding pests is a specialised activity involving surveillance systems and the capacity to act quickly to destroy any incursions. Environment Southland has better access to the necessary skills and resources for this than do individual persons. Relying on or requiring individual action, as a means of achieving Objective 1, is therefore less likely to prevent the adverse effects on the economic well-being and environmental values of pests under the exclusion programme.</p> <p>There are no alternative measures that provide for satisfactory inspection, education or advocacy measures.</p> |
| <b>Plan Rule 1</b>   | <b>Explanation to Rule</b>  |
| <p>Other than under the instruction or supervision of an authorised person, no person shall:</p> <ul style="list-style-type: none"> <li>(a) poison, capture or trap any rook; or</li> <li>(b) discharge any firearm at any rook; or</li> <li>(c) discharge any firearm at or within 500 metres of any tree containing a rookery; or</li> <li>(d) damage, disturb or interfere in any way with a rookery.</li> </ul> <p>A breach of this rule or any part thereof</p> | <p>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.</p>   |

<sup>3</sup> See glossary for definition

| Objective, Principal Measures and Rules   |  |
|---|--|
| creates an offence under Section 154N (19) of the Act.  |  |
| 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  |
| <p>No person other than an authorised person shall possess, keep, hold, enclose or otherwise harbour any pest listed in Table 4.</p> <p>A breach of this rule creates an offence under Section 154N (19) of the Act.</p>  | <p>The reason for this rule is to prevent humans actively attempting to establish exclusion pest populations within the Southland region.</p> <p>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.</p> <p>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.</p> |
| <p><b>Advice note</b></p> <p><i>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.</i></p> |  |

## 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             |
|--------------------|-------------------------------|------------------|
| <b>Plants</b>      |                               |                  |
| Boxthorn           | <i>Lycium ferocissimum</i>    | All of Southland |
| Field horsetail    | <i>Equisetum arvense</i>      | All of Southland |
| German ivy         | <i>Senecio mikanioides</i>    | All of Southland |
| Parrots feather    | <i>Myriophyllum aquaticum</i> | All of Southland |
| Purple loosestrife | <i>Lythrium salicaria</i>     | All of Southland |
| Smilax             | <i>Asparagus asparagoides</i> | All of Southland |


| Common Names | Scientific Name         | Area             |
|--------------|-------------------------|------------------|
| Spartina     | <i>Spartina anglica</i> | 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  |  |
| <p><b>Boxthorn</b> 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.</p> <p>The plant is particularly invasive in coastal areas on sand 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.</p> <p>For these reasons boxthorn is included in the Proposal.</p> <p>The Department of Conservation is working towards eradication of boxthorn in Southland.</p>  |    |
| <p><b>Field horsetail</b> 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.</p> <p>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'.</p> <p>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</p> |  |



| Description and adverse effects   |  |
|---|--|
| <p>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.</p> <p>For these reasons field horsetail is included in the Proposal.</p>  |  |
| <p><b>German ivy</b> 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.</p> <p>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.</p> <p>For these reasons German ivy is included in the Proposal.</p>  |    |
| <p><b>Parrots feather</b> 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.</p> <p>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.</p> <p>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.</p> <p>For these reasons parrots feather is included in the Proposal.</p> |  |



## Description and adverse effects

**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 species and can cause blockages to waterways which can contribute to flooding.

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 known, mainly in domestic gardens.


For these reasons purple loosestrife is included in the Proposal.



**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.



| Description and adverse effects  |  |
|--|--|
| For these reasons smilax is included in the Proposal.  |  |
| <p><b>Spartina</b> 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.</p> <p>Colonies of spartina form dense grassy clumps and these can spread laterally from underground rhizomes, 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.</p> <p>For these reasons spartina is included in the Proposal.</p> <p>The Department of Conservation is working towards eradication of spartina in Southland.</p> |  |

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. | <p>Appropriate measures drawn from the suite of activities listed under <b>requirement to act, council inspection, service delivery, advocacy and education</b> described in Section 5.3 of the proposal will be used to by Environment Southland to achieve Objective 2.</p> <p><b>Note:</b> <i>Environment Southland or other organisations will undertake control work unless an owner and/or occupier agrees in writing with Environment Southland to carry out the control work themselves.</i></p> <p><b>Alternatives considered</b></p> <p>Relying on owners and/or occupiers to undertake voluntary action or requiring them to act to prevent adverse effects for the pests</p> |

| Objective, Principal Measures and Rules   |  |
|---|--|
|   | <p>listed in Table 8 is not considered workable. This is because the plants are difficult to identify and the low levels of infestations may result in many plants not being removed in a timely manner. The uneven spread of invasions places an inequitable burden on those owners and/or occupiers whose property is infested. Relying on or requiring individual action, as a means of achieving Objective 2, is therefore less likely to prevent the adverse effects on the economic well-being and environmental values of pests under the eradication programme.</p> <p>There are no alternative measures that provide for satisfactory inspection, education or advocacy measures.</p> |
| 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  |
| <p>No person other than an authorised person shall possess, keep, hold, enclose or otherwise harbour any pest listed in Table 8.</p> <p>A breach of this rule creates an offence under Section 154N (19) of the Act.</p>  | <p>The reason for this rule is to prevent humans actively attempting to establish eradication pest populations within the Southland region.</p> <p>Exemptions to the rule will cater for case-by-case applications if appropriate.</p> <p>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 eradication pests.</p>   |
| <p><b>Advice note</b></p> <p><i>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.</i></p> |  |

### 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  |
|---------------------------|---|---|
| <b>Animal</b>             |   |   |
| Bengal cat                | <i>Felis catus var bengal</i>   | All of Southland  |
| <b>Plants</b>             |   |   |
| Bomarea                   | <i>Bomarea multiflora</i>   | All of Southland  |
| Buddleja                  | <i>Buddleja davidii</i>   | All of Southland  |
| Contorta (lodgepole) pine | <i>Pinus contorta</i>   | All of Southland  |
| Cotoneaster               | <i>Cotoneaster franchettii</i> ,<br><i>C. glaucophyllus</i> ,<br><i>C. simonsii</i> | Containment Maps 1a and 1b (Appendix 1)                     |
| Darwin's barberry         | <i>Berberis darwinii</i>  | Containment Maps 2a, 2b and 2c (Appendix 1)                 |
| Giant buttercup           | <i>Ranunculus acris</i>   | All of Southland  |
| Heather                   | <i>Calluna vulgaris</i>   | All of Southland  |
| Japanese honeysuckle      | <i>Lonicera japonica</i>  | All of Southland  |
| Lagarosiphon              | <i>Lagarosiphon major</i>   | Containment Map 3 (Appendix 1)                              |
| Mountain pine             | <i>Pinus mugo</i>   | All of Southland  |
| Old man's beard           | <i>Clematis vitalba</i>   | All of Southland  |
| Reed sweet grass          | <i>Glyceria maxima</i>  | All of Southland  |
| Rough horsetail           | <i>Equisetum hyemale</i>  | All of Southland  |
| Siberian lyme grass       | <i>Leymus racemosus</i>   | All of Southland  |
| Wilding conifers          | Wilding conifers+   | Southland Wilding Conifer High Risk Area Map 4 (Appendix 1) |
| <b>Marine</b>             |   |   |
| Undaria                   | <i>Undaria pinnatifida</i>  | All of Southland  |

+ see Table 12 for definition

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   |  |
| <p><b>Bengal cats</b> 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.</p> <p>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.</p> <p>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.</p> <p>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</p> |  |

### Description and adverse effects

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 Proposal.

### 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 Proposal.



**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.

For these reasons buddleja is included in the Proposal.





### Description and adverse effects

**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/kilograms.

For these reasons contorta pine is included in the Proposal.



**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<sup>4</sup>. 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 Proposal.

<sup>4</sup> 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 Proposal.



**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 Proposal.



### 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 Proposal.

**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.



The plant forms dense stands, suckers and seeds

### Description and adverse effects

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 Proposal.

**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 Proposal.



**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.

Lagarosiphon is known in a small number of small waterways in the lower plains. Initial infestations are



### Description and adverse effects

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 Proposal.

**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 Proposal.



**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.

For these reasons reed sweet grass is included in the Proposal.





## Description and adverse effects

**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 Proposal.

**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.

For these reasons Siberian lyme grass is included in the Proposal.



## Description and adverse effects

**Wilding conifers** can have significant impacts on native ecosystems, particularly those with low-stature vegetation<sup>5</sup>. 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 the mauri of streams and wetlands.

In areas of extensive pastoral farming, wilding conifer infestations reduce available grazing land and limit



<sup>5</sup> 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

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](mailto: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 Proposal.

### 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 invasive species.

*Undaria* can substantially modify natural habitats impacting on the native ecology of those areas.



| Description and adverse effects  |  |
|--|--|
| Invasion can result in an addition to canopy cover, or it can result in dense mono-specific stands of <i>Undaria</i> . These dense stands can reduce the presence and diversity of smaller understory algal species and out-compete marine macro algae canopy species. |  |
| For the above reasons <i>Undaria</i> is included in the Proposal.  |  |

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. | <p>Appropriate measures drawn from the suite of activities listed under <b>requirement to act, council inspection, advocacy and education</b> described in Section 5.3 of the Proposal will be used to by Environment Southland to achieve Objectives 3, 4 and 5.</p> <p><b>Alternatives considered</b></p> <p>Relying on owners and/or occupiers to undertake voluntary action to prevent Bengal cats causing adverse effects would most likely fail because of lack of individual ownership of the animals in the wild. It is also considered to be beyond the resources of Council to undertake control.</p> <p>Those who choose to own Bengal cats should bear the responsibility for ensuring any escapes do not lead to breeding and this is therefore the preferred approach for achieving Objective 3.</p> <p>There are no alternative measures that provide for satisfactory inspection, education or advocacy measures.</p> |
| 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.   | 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  |

| Objective, Principal Measures and Rules   |   |
|---|---|
| A breach of this rule creates an offence under Section 154N (19) of the Act.  | <p>environmental effects.</p> <p>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.</p>   |
| 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 Environment Southland.   | 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 undertake the progressive containment programme for Bengal cats.   |
| <p><b>Advice notes</b></p> <ol style="list-style-type: none"> <li><i>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.</i></li> <li><i>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.</i></li> </ol> |   |
| 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, sweet reed 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.   | <p>Appropriate measures drawn from the suite of activities listed under <b>requirement to act, council inspection, service delivery, advocacy and education</b> described in Section 5.3 of the Proposal will be used to by Environment Southland to achieve Objectives 4, 5 and 6.</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li><i>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.</i></li> <li><i>Bomarea, giant buttercup, heather, Japanese honeysuckle, Old man's beard, sweet reed 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 11, where necessary, to help implement the Plan.</i></li> </ol> |
| 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.   |   |

| Objective, Principal Measures and Rules   |  |
|---|--|
| <b>Plan Objective 6</b>   | <b>Alternatives considered</b>   |
| 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.   | <p>Relying on owners and/or occupiers to undertake voluntary action or requiring them to act to prevent adverse effects for the pests listed in Table 11 is not considered workable. This is because the plants are difficult to identify and the low levels of infestations may result in many plants not being removed in a timely manner. The uneven spread of invasions places an inequitable burden on those owners and/or occupiers whose property is infested. Relying on or requiring individual action, as a means of achieving Objectives 4, 5 and 6, is therefore less likely to prevent the adverse effects on the economic well-being and environmental values of pests under the eradication programme.</p> <p>There are no alternative measures that provide for satisfactory inspection, education or advocacy measures.</p> |
| <b>Plan Rule 8</b>  | <b>Explanation of Rule</b>   |
| 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.  |
| <b>Plan Rule 9</b>  | <b>Explanation of Rule</b>   |
| <p>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.</p> <p>For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed.</p> <p>A breach of this rule creates an offence under Section 154N (19) of the Act.</p> | <p>The reason for this rule is to maintain land that is clear or being cleared of cotoneaster plants from being infested or re-infested.</p> <p>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.</p>  |
| <b>Plan Rule 10</b>   | <b>Explanation of Rule</b>   |
| Within the Darwin's barberry Fiordland and Rakiura National Park Buffers (Maps 2b and 2c - Appendix 1) owners   | The reason for this rule is to maintain land that is clear or being cleared of Darwin's barberry plants from being re-infested.  |

| Objective, Principal Measures and Rules  |  |
|--|--|
| <p>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.</p> <p>For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed.</p> <p>A breach of this rule creates an offence under Section 154N (19) of the Act.</p>   | <p>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.</p>   |
| Plan Rule 11   | Explanation of Rule  |
| <p>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.</p> <p>For the purpose of this Rule:</p> <ul style="list-style-type: none"> <li>• eliminate means the permanent preclusion of the plant's ability to set viable seed; and</li> <li>• non-arable land means land that cannot be cultivated by a wheeled vehicle.</li> </ul> <p>A breach of this rule creates an offence under Section 154N (19) of the Act.</p> | <p>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.</p> <p>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.</p>   |
| <p><b>Advice note</b></p> <p><i>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.</i></p>  |  |
| Plan Objective 7   | Principal measures to be used  |
| <p>Over the duration of the Plan:</p> <p>(i) progressively contain and reduce the geographic distribution or extent of <i>Undaria</i> within Southland to protect the Fiordland Marine Area (Map 5a - Appendix 1);</p> <p>(ii) prevent any further <i>Undaria</i> infestations within the Southland region;</p> <p>to minimise or prevent adverse effects on the marine environment.</p>   | <p>Appropriate measures drawn from the suite of activities listed under <b>requirement to act, council inspection, service delivery, advocacy and education</b> described in Section 5.3 of the Proposal will be used to by Environment Southland to achieve Objective 7.</p> <p><b>Alternatives considered</b></p> <p>Relying on voluntary control is unlikely to result in efficient levels of control and requiring owners and/or occupiers to undertake control is not considered equitable.</p> |



| Objective, Principal Measures and Rules   |  |
|---|--|
|   | <p>This is because many of the benefits of control accrue to persons other than to the owners and/or occupiers with <i>Undaria</i>. It is therefore preferable for beneficiaries to fund Environment Southland or other control organisations for control activities.</p> <p>There are no alternative measures that provide for satisfactory inspection, education or advocacy measures.</p>                               |
| Plan Rule 12  | Explanation of Rule  |
| <p>Any person who detects or suspects the presence of <i>Undaria</i> outside of known <i>Undaria</i> sites (Map 5b – Appendix 1), must immediately report the pest's presence and location to Environment Southland.</p> <p>Known sites include:</p> <ul style="list-style-type: none"> <li>• Breaksea Sound;</li> <li>• Bluff;</li> <li>• Waipapa Point;</li> <li>• Ruapuke Island;</li> <li>• Oban;</li> <li>• Patersons Inlet;</li> <li>• Big Glory Bay;</li> <li>• Port Adventure.</li> </ul>   | <p>The reason for this rule is to assist Environment Southland in detecting the presence of any <i>Undaria</i> in order to help Environment Southland to effectively undertake the progressive containment programme for <i>Undaria</i>.</p>   |
| Plan Rule 13  | Explanation of Rule  |
| <p>No person other than an authorised person shall possess, keep, hold, enclose or otherwise harbour <i>Undaria</i> within the Southland region.</p> <p>A breach of this rule creates an offence under Section 154N (19) of the Act.</p>  | <p>The reason for this rule is to prevent humans actively establishing <i>Undaria</i> within the Southland region.</p> <p>Exemptions to the rule will cater for case-by-case applications if appropriate.</p> <p>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 <i>Undaria</i>.</p> |
| <p><b>Advice notes</b></p> <ol style="list-style-type: none"> <li>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.</li> <li>2. Sections 52 and 53 of the Biosecurity Act apply to the communication, release, spread and propagation of pests present on vehicles or equipment.</li> <li>3. An owner or person in charge of a vessel entering the Fiordland Marine Area is subject</li> </ol> |  |

## Objective, Principal Measures and Rules

*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.*

### Plan Objective 8

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<sup>6</sup> within the Southland Wilding Conifer High Risk 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.

### Principal measures to be used

Appropriate measures drawn from the suite of activities listed under **requirement to act, council inspection, advocacy and education** described in Section 5.3 of the Proposal 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.

### Alternatives considered

Relying on voluntary action of individuals to achieve Objective 8 is not considered viable due to the nature of the pest and the lack of incentives for voluntary action. Environment Southland could take on the responsibility for region-wide wilding conifer control. However, the extent of infestations is such that it is beyond the financial resources of Environment Southland.

Furthermore, the consequences of owners and/or occupiers no longer owning the problem could lead to over-optimistic expectations on the part of owners and/or occupiers and the wider community. This alternative is therefore rejected.

There are no alternative measures that provide for satisfactory inspection, education or advocacy measures.

### Plan Rule 14

Owners and/or occupiers shall, upon receipt of a written direction from an Authorised Person, eliminate all contorta

### Explanation of Rule

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.

<sup>6</sup> Wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in Table 11 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   |  |
|---|--|
| <p>and mountain pine plants from the land they occupy.</p> <p>For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to bear cones.</p> <p>A breach of this rule creates an offence under Section 154N (19) of the Act.</p>  | <p>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.</p>   |
| Plan Rule 15  | Explanation of Rule  |
| <p>Within the Southland Wilding Control High Risk Area (Map 4 - Appendix 1), owners and/or occupiers shall destroy all wilding conifers on land that they occupy prior to cone bearing, if –</p> <p>(a) the wilding conifers are located within an area which has had control operations carried out to destroy wilding conifers from the commencement of the Plan; and</p> <p>(b) the control operations were publicly funded (either in full or in part).</p> <p>A breach of this Rule creates an offence under Section 154N (19) of the Act.</p> | <p>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.</p>  |
| Plan Rule 16  | Explanation of Rule  |
| <p>Within the Southland Wilding Control High Risk 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, if wilding conifers have previously been destroyed through control operations on the adjoining property within 200 m of the boundary since the (insert Plan commencement date).</p> <p>A breach of this Rule or any part thereof creates an offence under Section 154N (19) of the Act.</p>                | <p>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 have previously been destroyed through control operations on the adjoining property.</p> <p>Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected owner and/or occupier.</p> |
| Plan Rule 17  | Explanation of Rule  |
| <p><b>Note:</b> This is designated a Good Neighbour Rule.</p> <p>Within the Southland Wilding Control High Risk Area (Map 4 - Appendix 1) owners</p>  | <p>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</p>  |

| Objective, Principal Measures and Rules  |  |
|--|--|
| <p>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 they have previously been cleared through control operations and that owner and/or occupier is taking reasonable steps to manage wilding conifers on their land, within 200 m of the boundary since the (insert Plan commencement date).</p> <p>A breach of this Rule creates an offence under Section 154N (19) of the Act.</p>   | <p>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.</p> <p>Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected owner and/or occupier.</p> <p>The rule is required in addition to Plan Rule 16, as 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.</p> |
| Plan Rule 18   | Explanation of Rule  |
| <p><b>Note:</b> <i>This is a pest agent rule.</i></p> <p>Within the Southland Wilding Control High Risk 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, if:</p> <ul style="list-style-type: none"> <li>(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 (insert Plan commencement date); and</li> <li>(b) the control operations were publicly funded (either in full or in part).</li> </ul> <p>A breach of this Rule creates an offence under Section 154N(19) of the Act.</p> <p><b>Pest Agent Conifer</b> 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 RPMP and is not located within a plantation forest.</p> | <p>Introduced conifer trees that are capable of helping the spread of wilding conifers present a risk for wilding conifer management.</p> <p>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 species have previously been destroyed through publicly funded control operations.</p>   |

#### Objective, Principal Measures and Rules

**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.

#### 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 Plan.

## 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           | <i>Cytisus scoparius</i> | All of Southland |
| Gorse           | <i>Ulex europeaus</i>    | All of Southland |
| Nodding thistle | <i>Carduus nutans</i>    | All of Southland |
| Ragwort         | <i>Senecio jacobaea</i>  | All of Southland |

Including the above pests in this Proposal 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  |  |
|--|--|
| <p><b>Broom</b> 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.</p> <p>It is present across most available habitats in the Southland region.</p> <p>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.</p> <p>For these reasons broom is included in the Proposal.</p> |    |
| <p><b>Gorse</b> is a deep rooted, woody, perennial legume that grows up to four metres tall. It has densely spined branches and bright yellow flowers.</p> <p>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.</p> <p>For these reasons gorse is included in the Proposal.</p>  |  |



### Description and adverse effects

**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 Proposal.



**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 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 Proposal.



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**

| <b>Objective, Principal Measures and Rules</b>   |  |
|--|--|
| <b>Plan Objective 9</b>  | <b>Principal measures to be used</b>   |
| 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.  | <p>Appropriate measures drawn from the suite of activities listed under <b>requirement to act, council inspection, advocacy and education</b> described in Section 5.3 of the Proposal will be used to by Environment Southland to achieve Objective 9.</p> <p><b>Alternatives considered</b></p> <p>Relying on voluntary action of individuals to achieve Objective 9 is not considered viable due to the nature of the pest and the lack of incentives for voluntary action. Environment Southland could take on the responsibility for controlling the spread of the broom, gorse, nodding thistle and ragwort. However, the extent of the infestations is such that the logistics of carrying out the sustained control programme would be difficult to integrate with individual owner and/or occupier management requirements. It is also unlikely to be cost effective.</p> <p>Furthermore, the consequences of owner and/or occupiers no longer owning the problem could lead to over-optimistic expectations on the part of both owner and/or occupiers and the wider community. This alternative is therefore rejected.</p> <p>There are no alternative measures that provide for satisfactory inspection, education or advocacy measures.</p> |
| <b>Plan Rule 19</b>  | <b>Explanation of Rule</b>   |
| <p><b>Note:</b> <i>This is designated a Good Neighbour Rule.</i></p> <p>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.</p> | <p>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.</p> <p>Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected owner and/or occupier.</p>   |

| Objective, Principal Measures and Rules   |  |
|---|--|
| <p>For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed.</p> <p>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.</p> <p>A breach of this Rule creates an offence under Section 154N (19) of the Act.</p>  |  |
| Plan Rule 20  | Explanation of Rule  |
| <p><b>Note:</b> <i>This is designated a Good Neighbour Rule.</i></p> <p>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.</p> <p>For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed.</p> <p>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.</p> <p>A breach of this Rule creates an offence under Section 154N (19) of the Act.</p> | <p>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.</p> <p>Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected owner and/or occupier.</p> |

| Objective, Principal Measures and Rules  |   |
|--|---|
| Plan Rule 21   | Explanation of Rule   |
| <p><b>Note:</b> This is designated a Good Neighbour Rule.</p> <p>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 adjoining property boundary where:</p> <ul style="list-style-type: none"> <li>(a) the occupier of the adjoining property is carrying out cattle, deer or horse grazing; and</li> <li>(b) is eliminating ragwort infestations within 20 metres of that boundary.</li> </ul> <p>For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed.</p> <p>A breach of this Rule creates an offence under Section 154N (19) of the Act.</p> | <p>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.</p> <p>Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected owner and/or occupier.</p> |
| Plan Rule 22   | Explanation of Rule   |
| <p><b>Note:</b> This is designated a Good Neighbour Rule.</p> <p>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.</p> <p>For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed.</p> <p>A breach of this Rule creates an offence under Section 154N (19) of the Act.</p>   | <p>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.</p> <p>Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected owner and/or occupier.</p>                                   |
| <p><b>Advice Note</b></p> <p><i>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.</i></p>   |   |

## 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             |
|---------------|------------------------------|------------------|
| <b>Animal</b> |                              |                  |
| Possum        | <i>Trichosurus vulpecula</i> | All of Southland |
| Rabbit        | <i>Oryctolagus cuniculus</i> | 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  |   |
|--|---|
| <p><b>Possums</b> 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.</p> <p>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.</p> <p>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 affected. Despite this wide range, possums are strongly selective browsers and the majority of the diet in any</p> |  |

### Description and adverse effects

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 Proposal 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 Proposal.



### 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 Proposal.



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)**

| <b>Objective, Principal Measures and Rules</b>  |  |
|---|--|
| <b>Plan Objective 10</b>  | <b>Principal measures to be used</b>   |
| <p>Over the duration of the Plan, sustainably control possums in the Southland region to:</p> <p>(a) ensure population levels do not exceed 5% Residual Trap Catch within areas shown on Map 7 - Appendix 1; and</p> <p>(b) 10% Residual Trap Catch within the areas shown on Map 7 - Appendix 1. to minimise any adverse effects on economic and environmental values.</p> | <p>Appropriate measures drawn from the suite of activities listed under <b>requirement to act, council inspection, advocacy and education</b> described in Section 5.3 of the Proposal will be used to by Environment Southland to achieve Objective 10.</p> <p><b>Alternatives considered</b></p> <p>Relying on voluntary action of individuals to achieve Objective 10 is not considered viable due to the nature of the pest and the lack of incentives for voluntary action. Environment Southland could take on the responsibility for region-wide possum control. However, the extent of possum infestation is such that the logistics of carrying out the sustained control programme would be difficult to integrate with individual owner and/or occupier management requirements. It is also unlikely to be cost effective.</p> <p>Furthermore, the consequences of owners and/or occupiers no longer owning the problem could lead to over-optimistic expectations on the part of both owners and/or occupiers and the wider community. This alternative is therefore rejected.</p> <p>It is noted however that control at targeted sites under the site-led programme may be considered by Environment Southland.</p> <p>There are no alternative measures that provide for satisfactory inspection, education or advocacy measures.</p> |
| <b>Plan Rule 23</b>   | <b>Explanation of Rule</b>   |
| <p>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.</p> <p>A breach of this Rule creates an offence</p>  | <p>The reason for this rule is to maintain the population levels of possums to that which prevents adverse effects on economic and environmental values.</p> <p>Possum densities have previously been reduced in Possum Control Areas and through</p>  |

| Objective, Principal Measures and Rules   |  |
|---|--|
| under Section 154N (19) of the Act.   | 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 24  | Explanation of Rule  |
| <p>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.</p> <p>A breach of this Rule creates an offence under Section 154N (19) of the Act.</p>  | <p>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.</p>   |
| <p><b>Advice Notes</b></p> <ol style="list-style-type: none"> <li><i>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.</i></li> <li><i>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.</i></li> </ol> |  |
| 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 <sup>7</sup> .  | <p>Appropriate measures drawn from the suite of activities listed under <b>requirement to act, Council inspection, advocacy and education</b> described in Section 5.3 of the Proposal will be used to by Environment Southland to achieve Objective 11.</p> <p><b>Alternatives considered</b></p> <p>Relying on voluntary action of individuals to achieve Objective 11 is not considered viable due to the nature of the pest and the lack of incentives for voluntary action. Environment Southland could take on the responsibility for region-wide rabbit control. However, the extent of rabbit infestation is such that the logistics of carrying out the sustained control programme would be difficult to integrate</p> |

<sup>7</sup> Refer Appendix 4 for Modified McLean Scale

| Objective, Principal Measures and Rules  |   |
|--|---|
|  | <p>with individual owner and/or occupier management requirements. It is also unlikely to be cost effective.</p> <p>Furthermore, the consequences of owners and/or occupiers no longer owning the problem could lead to over-optimistic expectations on the part of owners and/or occupiers and the wider community. This alternative is therefore rejected.</p> <p>It is noted however that control at targeted sites under the site-led programme may be considered by Environment Southland.</p> <p>There are no alternative measures that provide for satisfactory inspection, education or advocacy measures.</p> |
| Plan Rule 25   | Explanation of Rule   |
| <p>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.</p> <p>A breach of this Rule creates an offence under Section 154N(19) of the Act.</p> | <p>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.</p>  |
| <p><b>Advice Note</b><br/> <i>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.</i></p>     |   |

## 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<sup>8</sup>, 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.

<sup>8</sup> See glossary for definition (environment in Section 2 and matters in Section 54(b) of the Act)

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 this Proposal 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 3.

Two sites are included in this Proposal:

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 islands ecosystems are nationally significant and contain several 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 Whenua Hou/Codfish Island, both of which are currently pest free. These two islands are home to rare species such as saddleback and kakapo. Stewart Island/Rakiura is a potential invasion pathway of pests to these islands.

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 and Rakiura Tītī Islands Administering Body are already working on pest management projects on the island.

2. **Omaui** is delineated on Map 9 - Appendix 1. This community initiated site focuses on protecting the ecological values at Omaui Hill including 230 ha of remnant and regenerating lowland kamahi and podocarp forest. The bush block is known to support native species including fantail, brown creeper, grey warbler, tui, bellbird, kereru, tomtit, shining cuckoo kingfishers and kakariki. The Omaui Landcare Group has been working since 2013 to protect Omaui Hill from pest animals including possums, mustelids, rodents and feral cats.

Further sites may be added to the Plan 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 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 RPMP or those organisms listed as organisms of interest in Appendix 2.

The process that will be followed for adding a new site to the Plan is dependent on effect upon a person's rights or obligations. If such effects are not significant, the Plan 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  |
|-----------------------------------|--|
| <b>Plants</b>                     |  |
| African club moss                 | <i>Selaginella kraussiana</i>                                    |
| Gunnera                           | <i>Gunnera tinctoria</i>   |
| Hawthorn                          | <i>Crataegus monogyna</i>  |
| Heather                           | <i>Calluna vulgaris</i>  |
| Knotweed (Indian/Himalayan)       | <i>Persicaria wallichii</i> (syn <i>Polygonum polystachyum</i> ) |
| Spanish heath                     | <i>Erica lusitanica</i>  |
| Willow (Crack, Grey)              | <i>Salix fragilis</i> , <i>S. cinerea</i>                        |
| <b>Animals</b>                    |  |
| Feral cat                         | <i>Felix catus</i>   |
| Feral goat                        | <i>Capra aegagrus hircus</i>                                     |
| Feral pig                         | <i>Sus scrofa</i>  |
| Hedgehog                          | <i>Erinaceus europaeus</i>                                       |
| House mouse                       | <i>Mus musculus</i>  |
| Mustelids (ferret, stoat, weasel) | <i>Mustelo furo</i> , <i>M. ermine</i> , <i>M. nivalis</i>       |
| Possum+                           | <i>Trichosurus vulpecula</i>                                     |
| Rat (Norway, ship and Kioore)     | <i>Rattus norvegicus</i> , <i>R. rattus</i> <i>R. exulans</i>    |

+ Rules 23 & 24 pertaining to possums still apply to this site.



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

| Common names   | Scientific name              |
|----------------|------------------------------|
| <b>Animals</b> |                              |
| Domestic cat   | <i>Felix catus</i>           |
| Domestic goat  | <i>Capra aegagrus hircus</i> |
| Domestic pig   | <i>Sus scrofa</i>            |

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 Proposal 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 and Omai where applicable**

| Description and adverse effects   |  |
|---|--|
| Plants  |  |
| <p><b>African club moss</b> 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.</p> <p>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.</p> <p>Once established in an area, African club moss excludes desirable species from co-existing with it.</p> <p>African club moss is only known from a few locations on Stewart Island/Rakiura. If it encroached further it could put forest regeneration at risk.</p> <p>The Department of Conservation operates a control programme for African club moss on Stewart Island/Rakiura.</p> |    |
| <p><b>Gunnera</b> 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.</p> <p>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.</p> <p>Gunnera has been part of a ten year eradication programme on the Stewart Island/Rakiura it is found in approximately 165 locations.</p>  |  |

## Description and adverse effects

**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 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, tussockland 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,



### 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.

**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, weasels and feral cats are not found on Stewart Island/Rakiura or the Titi Islands.

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



### Description and adverse effects

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.

Escapees (feral goats) are extremely damaging to native vegetation. They prevent seedling regeneration and in partnership with possums can cause complete forest collapse.





## Description and adverse effects

**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.

They are not currently present on Stewart Island/Rakiura.



**Possum** – see description under Table 18 - sustained control programme.

## Description and adverse effects

### 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**

| <b>Objective, Principal Measures and Rules</b>  |  |
|---|--|
| <b>Plan Objective 12</b>  | <b>Principal measures to be used</b>   |
| <p>Over the duration of the Plan, prevent the range extension throughout or to the Stewart Island/Rakiura site (Map 8 - Appendix 1) of:</p> <ul style="list-style-type: none"> <li>(i) Feral cats;</li> <li>(ii) Feral goats;</li> <li>(iii) Feral pigs;</li> <li>(v) Hedgehogs;</li> <li>(vi) House mouse;</li> <li>(vii) Mustelids;</li> <li>(viii) Possums; and</li> <li>(ix) Rats</li> </ul> <p>to avoid, mitigate or prevent damage to the specific values particular to the site.</p> | <p>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.</p> <p>Apropriate measures drawn from the suite of activities listed under <b>requirement to act</b>, , <b>council inspection</b>, <b>service delivery</b>, <b>advocacy and education</b> described in Section 5.3 of the Proposal will be used to by Environment Southland to achieve Objectives 12, 13, 14 and 15.</p> <p><b>Alternatives considered</b></p> <p>Relying on voluntary action of individuals to achieve Objectives 12, 13, 14 and 15 is not considered viable due to the nature of the pests and the lack of incentives for voluntary action, especially given that the beneficiaries of control action lies with the wider community.</p> <p>It is likely that Environment Southland does not have the financial resource to fully fund the programme. Furthermore, the consequences of owners and/or occupiers no longer owning the problem could lead to over-optimistic expectations on the part of both owners and/or occupiers and the wider community. This alternative is therefore rejected.</p> <p>There are no alternative measures that provide for satisfactory inspection, education or advocacy measures.</p> |
| <b>Plan Objective 13</b>  |  |
| <p>Over the duration of the Plan, reduce all infestations of:</p> <ul style="list-style-type: none"> <li>(i) Hawthorn;</li> <li>(ii) Heather;</li> <li>(iii) Spanish heath; and</li> <li>(iv) Willow;</li> </ul> <p>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.</p>  |  |
| <b>Plan Objective 14</b>  |  |
| <p>Over the duration of the Plan, progressively contain and reduce the geographic distribution or extent of:</p> <ul style="list-style-type: none"> <li>(i) Gunnera;</li> <li>(ii) Knotweeds;</li> </ul> <p>at the Stewart Island/Rakiura site (Map 8 - Appendix 1) to avoid, mitigate or prevent damage to the specific values particular to the site.</p>   |  |
| <b>Plan Objective 15</b>  |  |
| <p>Over the duration of the Plan, sustainably control population levels of:</p> <ul style="list-style-type: none"> <li>(i) Feral cats;</li> <li>(ii) African club moss;</li> </ul> <p>at the Stewart Island/Rakiura site (Map 8 -</p>   |  |

| Objective, Principal Measures and Rules  |  |
|--|--|
| Appendix 1) to avoid, mitigate or prevent damage to the specific values particular to the site.  |  |
| Plan Rule 26   | Explanation of Rule  |
| <p>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:</p> <ul style="list-style-type: none"> <li>(i) Hawthorn;</li> <li>(ii) Heather;</li> <li>(iii) Spanish heath;</li> <li>(iv) Willow;</li> <li>(v) Feral goat;</li> <li>(vi) Feral pig;</li> <li>(vii) Hedgehog;</li> <li>(viii) House mouse;</li> <li>(ix) Mustelid;</li> <li>(x) Possum; or</li> <li>(xi) Rat.</li> </ul> <p>A breach of this rule creates an offence under Section 154N (19) of the Act.</p> <p>For the purpose of this rule place includes- <i>any building, conveyance, craft, land, or structure.</i></p> | <p>The reason for this rule is to help achieve the exclusion or eradication of these pests from the Stewart Island/Rakiura site.</p> |
| Plan Rule 27   | Explanation of Rule  |
| <p>Any person who detects or suspects the presence of any:</p> <ul style="list-style-type: none"> <li>(i) house mouse;</li> <li>(ii) mustelid; or</li> <li>(iii) pest plant listed in Table 19;</li> </ul> <p>at the Stewart Island/Rakiura site (Map 8 - Appendix 1) must immediately report the pest's presence and location to Environment Southland.</p>   | <p>The reason for this rule is to assist Environment Southland in detecting the presence of any of these pests.</p>                  |
| <p><b>Advice note</b></p> <p><i>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.</i></p>  |  |

| Objective, Principal Measures and Rules   |  |
|---|--|
| Plan Rule 28  | Explanation of Rule  |
| <p><b>Note:</b> <i>This is a pest agent rule.</i></p> <p>No person shall:</p> <ul style="list-style-type: none"> <li>(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</li> <li>(ii) release into the wild on the Stewart Island/Rakiura site any domestic cat, goat or pig.</li> </ul> <p>A breach of this Rule creates an offence under Section 154N (19) of the Act.</p> <p>For the purpose of this rule place includes - <i>any building, conveyance, craft, land, or structure.</i></p> <p>Any person who is responsible for a domestic cat that is de-sexed and its identity microchipped is exempted from the provisions of Rule 28(i).</p> | <p>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.</p> |

### 6.7.3 Site-led pest programme for Omaui

Pests subject to programmes for this site are listed in Table 24 below.

**Table 24: Pests included in the site-led programme for Omaui**

| Common names                      | Scientific name   |
|-----------------------------------|---|
| <b>Animals</b>                    |   |
| Feral cat                         | <i>Felix catus</i>  |
| Feral goat                        | <i>Capra aegagrus hircus</i>                                  |
| Hedgehog                          | <i>Erinaceous europaeus</i>                                   |
| Mustelids (ferret, stoat, weasel) | <i>Mustelo furo</i> , <i>M. ermine</i> , <i>M. nivalis</i>    |
| Possum                            | <i>Trichosurus vulpecula</i>                                  |
| Rat (Norway, ship and Kiore)      | <i>Rattus norvegicus</i> , <i>R. rattus</i> <i>R. exulans</i> |

**Table 25: Pest Agents in relation to the site-led programme for Omaui**

| Common names   | Scientific name     |
|----------------|---------------------|
| <b>Animals</b> |                     |
| Domestic cat   | <i>Felix catus</i>  |
| Domestic goat  | <i>Capra hircus</i> |

The characteristics of each of these pests, and adverse effects that they pose, are set out in Table 25 above. As a consequence, they pose threats to the site and are included in the Proposal for those reasons.

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 26 below. An explanation of alternatives means is also provided.

**Table 26: Aims and means of achievement for the site-led programme at Omaui**

| <b>Objective, Principal Measures and Rules</b>  |  |
|---|--|
| <b>Plan Objective 16</b>  | <b>Principal measures to be used</b>   |
| Over the duration of the Plan, progressively contain and reduce the geographic distribution or extent of feral cats at the Omaui site (Map 9 Appendix 1) 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.   |
| <b>Plan Objective 17</b>  |  |
| Over the duration of the Plan, sustainably control population levels of:<br>(i) Feral goats;<br>(ii) Hedgehogs;<br>(iii) Mustelids;<br>(iv) Possums; and<br>(v) Rats;<br>at the Omaui site (Map 9 - Appendix 1) to avoid, mitigate or prevent damage to the specific values particular to the site. | <p>Appropriate measures drawn from the suite of activities listed under <b>requirement to act, Council inspection, service delivery, advocacy and education</b> described in Section 5.3 of the Proposal will be used to by Environment Southland to achieve Objectives 16 and 17.</p> <p><b>Alternatives considered</b><br/>Relying on voluntary action of individuals to achieve Objectives 16 and 17 is not considered viable due to the nature of the pests and the lack of incentives for voluntary action, especially given that the beneficiaries of control action lies with the wider community.</p> <p>It is likely that Environment Southland does not have the financial resource to fully fund the programme. Furthermore, the consequences of owners and/or occupiers no longer owning the problem could lead to over-optimistic expectations on the part of both owners and/or occupiers and the wider community. This alternative is therefore rejected.</p> |



| Objective, Principal Measures and Rules  |  |
|--|--|
|  | There are no alternative measures that provide for satisfactory inspection, education or advocacy measures.  |
| Plan Rule 29   | Explanation of Rule  |
| <p>No person shall keep, hold, enclose or otherwise harbour in any place, either in transit to or present on the Omaui site (Map 9 - Appendix 1) any:</p> <ul style="list-style-type: none"> <li>(i) Feral cat;</li> <li>(ii) Feral goat;</li> <li>(iii) Hedgehog;</li> <li>(iv) Mustelid;</li> <li>(v) Possum; or</li> <li>(vi) Rat.</li> </ul> <p>A breach of this Rule creates an offence under Section 154N (19) of the Act.</p> <p>For the purpose of this rule place includes-<br/><i>any building, conveyance, craft, land, or structure.</i></p>   | <p>The reason for this rule is to help the progressive control of feral cats and the sustained control of feral goats, hedgehogs, mustelids, possums and rats at the Omaui site.</p> |
| <p><b>Advice note</b><br/> <i>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.</i></p>  |  |
| Plan Rule 30   | Explanation of Rule  |
| <p><b>Note:</b> <i>This is a pest agent rule.</i></p> <p>No person shall:</p> <ul style="list-style-type: none"> <li>(i) keep, hold, enclose or otherwise harbour in any place, either in transit to or present on the Omaui site (Map 9 - Appendix 1) any domestic cat, or goat; or</li> <li>(ii) release into the wild on the Omaui site any domestic cat or goat.</li> </ul> <p>A breach of this rule creates an offence under Section 154N (19) of the Act.</p> <p>For the purpose of this rule place includes-<br/><i>any building, conveyance, craft, land, or structure.</i></p> <p>Any person who is responsible for a domestic cat:</p> <ul style="list-style-type: none"> <li>(i) that is de-sexed and its identity</li> </ul> | <p>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.</p>                         |

| Objective, Principal Measures and Rules   |  |
|---|--|
| <p>microchipped; and</p> <p>(ii) has registered the domestic cat with Environment Southland within six (6) months of the commencement date of the Plan</p> <p>is exempted from the provisions of Rule 30.</p> |  |

## 7 Monitoring

### 7.1 Measuring achievement of objectives

Table 27 outlines how Environment Southland will undertake monitoring to measure the extent to which the objectives of the Plan are met. Reporting on this monitoring strategy to Council occurs on an annual basis.

**Table 27: Monitoring strategy for measuring RPMP objectives**

| Objective  | Indicator/s   | Method of monitoring  |
|--|---|---|
| <b>Exclusion programme</b>   |   |   |
| <b>Rooks, wallaby, boneseed, Chilean needle grass and nassella tussock</b> remain absent from the region.  | Absence from the region.  | As reported from public or detected through active surveillance.  |
| <b>Asian paddle crab, Australian droplet tunicate, Mediterranean fanworm, pyura and sea squirts (<i>Stylea clava</i> and <i>Didemnum vexillum</i>)</b> 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.        |
| <b>Eradication programme</b>   |   |   |
| Reduce the infestation levels of <b>field horsetail, German ivy, parrots feather, purple loosestrife and smilax</b> 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 <b>boxthorn and spartina</b> to zero within the life of the plan.   | Number of new and active sites. Absence from the region.            | Updates received from Department of Conservation.   |
| <b>Progressive containment programme</b>   |   |   |
| Contain and reduce the distribution of <b>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</b> | 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 <b>Bengal cats</b> to approved owned pets.   | Number of registered Bengal cats.  | Register of Bengal cat owners.   |
| Contain the population of <b>Undaria</b> 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. |
| <b>Sustained control programme</b>   |  |  |
| <b>Gorse, broom, ragwort, and nodding thistle</b> do not spread to other properties.                             | Number of resolved complaints.   | All complaints are registered and inspections recorded.  |
| Populations of <b>possums</b> are maintained below 5% or 10% Residual Trap Catch as shown on Map 6 – Appendix 1. | Residual Trap Catch indices (or equivalent agreed method).                           | Residual Trap Catch monitors (or equivalent agreed method) as required.  |
| Populations of <b>rabbits</b> are maintained at or below level 3 on the Modified Mclean Scale (MMS).             | MMS.   | Rabbit populations are assessed as required.   |

| <b>Stewart Island/Rakiura site-led monitoring</b>                                      |   |  |                      |
|--|---|--|----------------------|
| Objective  | Indicator   | Method of monitoring   | Reporting to Council |
| To protect the natural values of Stewart Island/Rakiura, islets and off-shore islands. | <b>The pests listed in Section 6.7.2</b> 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. | As required.         |

| Objective   | Indicator  | Method of monitoring  | Reporting to Council |
|---|--|---|----------------------|
|   | Populations of <b>crack willow, grey willow, hawthorn, heather and Spanish heath</b> are reduced to zero on the islands within the life of the Plan. | Reports from public. Number of new and active sites.        | Annually.            |
|   | <b>Domestic cats</b> are desexed and microchipped.   | Register of domestic cats.                                  | As required.         |
| 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. | As required.         |

| Omaui site-led monitoring                                     |  |  |                      |
|---|--|--|----------------------|
| Objective   | Indicator  | Method of monitoring                       | Reporting to Council |
| To protect the natural values of Omaui Hill.                  | <b>Feral cats</b> are contained within the site and <b>domestic cats</b> are registered. After six months of the plan taking effect, there will be no new domestic cats. | Number of registered domestic cats.        | As appropriate       |
| Support the work the community is carrying out at Omaui Hill. | Management of <b>the pests listed in Section 6.7.3</b> continues to support the community and protect environmental values at the place.                                 | Regular meetings with the Omaui community. | As required.         |

## 7.2 Monitoring the management agency's performance

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

- (a) prepare an operational plan within three months of the commencement date of the Plan;
- (b) review the operational plan annually, and amend it if needed;
- (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, and responses from Environment Southland and land owners and/or occupiers.

## 7.3 Monitoring plan effectiveness

Monitoring the effects of the Plan 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 Plan requires review. A review may be needed if:

- (a) the Act is changed, and a review is needed to ensure that the Plan 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 Plan;
- (c) monitoring shows the problems from pests or other organisms to be controlled (as covered by the Plan) have changed significantly; or
- (d) circumstances change so significantly that Environment Southland believes a review is appropriate.

If the Plan 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 Plan, or leave it unchanged.

The procedures to review the Plan 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 Plan;
- (ii) assessing the impact the pest or organism (covered by the Plan) has on the region and any other harmful species that should be considered for inclusion in the Plan; and
- (iii) liaising with key interest groups on the effectiveness of the Plan.





# 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 Plan.

Environment Southland will use those statutory powers of Part 6 of the Act as shown in Table 28, where necessary, to help implement the Plan.

**Table 28: Powers from Part 6 to be used**

| Administrative provisions                                     | Biosecurity Act Reference   | Level of delegation |
|---|-----------------------------|---------------------|
| 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. | Section 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                 |                     |
| Options for cost recovery                                     | Section 135                 | Principal Officer   |
| Failure to pay  | Section 136                 |                     |
| Offences  | Section 154M, 154N and 154O |                     |

**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 Plan 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 Proposal.

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 Introduction

The Act requires that funding is thoroughly examined. For a Proposal, this includes:

- analysing the costs and benefits of the plan and any reasonable alternative measures,
- noting how much any person will likely benefit from the plan;
- noting how any person's actions or inactions may contribute to creating, continuing or making worse the problems that the plan proposes to resolve;
- noting the reason for allocating costs; and
- noting whether any unusual administrative problems or costs are expected in recovering the costs from any person who is required to pay.

### 9.2 Analysis of benefits and costs

The benefits and costs of the programmes recommended in the Proposal and reasonable alternative measures (including do nothing) have been run through a comprehensive cost-benefit analysis. The analysis is consistent with the requirements in Clause 6 of the NPD and considers:

- the costs and benefits of each programme in the proposed plan;
- the beneficiaries and exacerbators relevant to each pest; and
- the most appropriate funding mechanism to fund the programme.

The cost-benefit analysis accompanies the Proposal as a separate document.

### 9.3 Beneficiaries and exacerbators

Beneficiaries and exacerbators are also included in the cost-benefit analysis.

Table 29 below shows two groups of people - those who benefit from controlling pests (beneficiaries), and those who contribute to the pest problem (exacerbators).

**Table 29: Beneficiaries and exacerbators**

| Pest           | Primary programme       | Beneficiaries            | Exacerbators  |
|----------------|-------------------------|--------------------------|---|
| <b>Plants</b>  |                         |                          |   |
| <b>Bomarea</b> | Progressive containment | The Southland community. | <ul style="list-style-type: none"><li>• Any person who contributes towards the spread of bomarea through their actions.</li><li>• Any person who does not report the presence of bomarea.</li></ul> |

| Pest                             | Primary programme       | Beneficiaries  | Exacerbators  |
|----------------------------------|-------------------------|--|---|
| <b>Boneseed</b>                  | Exclusion               | The Southland community.   | <ul style="list-style-type: none"> <li>Any person who does not report the presence of boneseed.</li> </ul>  |
| <b>Boxthorn</b>                  | Eradication             | Public who will benefit from the prevention of loss of public good benefits.   | <ul style="list-style-type: none"> <li>Any person who knowingly or unknowingly does not report the presence of boxthorn.</li> </ul>   |
| <b>Broom</b>                     | Sustained control       | Rural community who will benefit from prevention of spread and production benefits.  | <ul style="list-style-type: none"> <li>Any person transporting broom into or around the region.</li> <li>Owners and/or occupiers with broom on their property not undertaking control.</li> </ul>                                   |
| <b>Buddleja</b>                  | Progressive containment | The Southland community.   | <ul style="list-style-type: none"> <li>Any person who contributes towards the spread of buddleja through their actions.</li> <li>Any person who does not report the presence of buddleja outside of cultivation.</li> </ul>         |
| <b>Chilean needle grass</b>      | Exclusion               | All pastoral farmers.  | <ul style="list-style-type: none"> <li>Any person who does not report the presence of Chilean needle grass.</li> </ul>  |
| <b>Contorta (lodgepole) pine</b> | Progressive containment | <ul style="list-style-type: none"> <li>Pastoral farmers with affected land.</li> <li>Downstream water users.</li> <li>Public users of the affected conservation estate</li> <li>Private land for recreational and other social and cultural purposes.</li> </ul> | <ul style="list-style-type: none"> <li>Owners and/or occupiers whose land is infested which provides a seed source for fringe and distant spread.</li> <li>Owners and/or occupiers of land vulnerable to wilding spread.</li> </ul> |
| <b>Cotoneaster</b>               | Progressive containment | The Southland community.   | <ul style="list-style-type: none"> <li>Owners and/or occupiers who contribute towards the spread of cotoneaster.</li> <li>Owners and/or occupiers who allow cotoneaster to grow on</li> </ul>                                       |



| Pest                     | Primary programme       | Beneficiaries   | Exacerbators   |
|--------------------------|-------------------------|---|--|
|                          |                         |   | their property.  |
| <b>Darwin's barberry</b> | Progressive containment | The Southland community.  | <ul style="list-style-type: none"> <li>Any person who contributes toward the spread of Darwin's barberry.</li> <li>Owners and/or occupiers who allow Darwin's barberry to grow on their property.</li> </ul>       |
| <b>Field horsetail</b>   | Eradication             | The Southland community.  | <ul style="list-style-type: none"> <li>Any person who contributes towards the spread of field horsetail through their actions.</li> <li>Any person who does not report the presence of field horsetail.</li> </ul> |
| <b>German ivy</b>        | Eradication             | The Southland community.  | <ul style="list-style-type: none"> <li>Any person who contributes towards the spread of German ivy through their actions.</li> <li>Any person who does not report the presence of German ivy.</li> </ul>           |
| <b>Giant buttercup</b>   | Progressive containment | The Southland community.  | <ul style="list-style-type: none"> <li>Owners and/or occupiers who do not control the spread of giant buttercup.</li> <li>Owners and/or occupiers whose land is suitable for giant buttercup to grow.</li> </ul>   |
| <b>Gorse</b>             | Sustained control       | Rural community who will benefit from prevention of spread and production benefits. | <ul style="list-style-type: none"> <li>Any person transporting gorse into or around the region.</li> <li>Any person with gorse on their property not undertaking control.</li> </ul>                               |
| <b>Heather</b>           | Progressive containment | The Southland community   | <ul style="list-style-type: none"> <li>Any person who contributes towards the spread of heather through their actions.</li> <li>Any person who does not report the presence</li> </ul>                             |

| Pest                        | Primary programme       | Beneficiaries  | Exacerbators  |
|-----------------------------|-------------------------|--|---|
|                             |                         |  | of heather outside of cultivation.  |
| <b>Japanese honeysuckle</b> | Progressive containment | The Southland community.   | <ul style="list-style-type: none"> <li>Any person who contributes towards the spread of Japanese honeysuckle through their actions.</li> <li>Any person who does not report the presence of Japanese honeysuckle outside of cultivation.</li> </ul> |
| <b>Lagarosiphon</b>         | Progressive containment | The Southland community and users of waterways.  | <ul style="list-style-type: none"> <li>Any person who actively causes lagarosiphon to spread either accidentally or deliberately.</li> <li>Owners of the beds of waterways (generally the Crown).</li> </ul>  |
| <b>Mountain pine</b>        | Progressive containment | <ul style="list-style-type: none"> <li>Pastoral farmers with affected land.</li> <li>Downstream water users.</li> <li>Public users of the affected conservation estate.</li> <li>Private land for recreational and other social and cultural purposes</li> </ul> | <ul style="list-style-type: none"> <li>Owners and/or occupiers whose land is infested which provides a seed source for fringe and distant spread.</li> <li>Owners and/or occupiers of land vulnerable to wilding spread.</li> </ul>                 |
| <b>Nassella tussock</b>     | Exclusion               | <ul style="list-style-type: none"> <li>All pastoral farmers</li> <li>The Southland community.</li> </ul>   | <ul style="list-style-type: none"> <li>Nassella tussock is not present in the region.</li> <li>Any person who does not report the presence of nassella tussock.</li> </ul>  |
| <b>Nodding thistle</b>      | Sustained control       | Rural community who will benefit from prevention of spread and production benefits.  | <ul style="list-style-type: none"> <li>Any person transporting nodding thistle into or around the region.</li> <li>Any person with nodding thistle on their property not undertaking control.</li> </ul>  |

| Pest               | Primary programme       | Beneficiaries   | Exacerbators   |
|--------------------|-------------------------|---|--|
| Old man's beard    | Progressive containment | The Southland community.  | <ul style="list-style-type: none"> <li>Any person who contributes towards the spread of Old man's beard through their actions.</li> <li>Any person who does not report the presence of Old man's beard.</li> </ul>   |
| Parrots feather    | Eradication             | The Southland community.  | <ul style="list-style-type: none"> <li>Any person who contributes towards the spread of parrots feather through their actions.</li> <li>Any person who does not report the presence of parrots feather.</li> </ul>   |
| Purple loosestrife | Eradication             | The Southland community.  | <ul style="list-style-type: none"> <li>Any person who propagates or transports purple loosestrife.</li> <li>Owners and/or occupiers who have purple loosestrife on their land.</li> </ul>                            |
| Ragwort            | Sustained control       | N/A   | <ul style="list-style-type: none"> <li>Any person transporting ragwort into or around the region.</li> <li>Owners and/or occupiers with ragwort on their property not undertaking control.</li> </ul>                |
| Reed sweet grass   | Progressive containment | <ul style="list-style-type: none"> <li>People outside the reed sweet grass containment area with the pest on their property.</li> <li>The Southland community.</li> </ul> | <ul style="list-style-type: none"> <li>Any person who contributes towards the spread of reed sweet grass through their actions.</li> <li>Any person who does not report the presence of reed sweet grass.</li> </ul> |
| Rough horsetail    | Progressive containment | The Southland community.  | <ul style="list-style-type: none"> <li>Any person who contributes towards the spread of rough horsetail through their</li> </ul>   |

| Pest                       | Primary programme       | Beneficiaries  | Exacerbators  |
|----------------------------|-------------------------|--|---|
|                            |                         |  | <p>actions.</p> <ul style="list-style-type: none"> <li>Any person who does not report the presence of rough horsetail outside of cultivation.</li> </ul>  |
| <b>Siberian lyme grass</b> | Progressive containment | The Southland community.   | <ul style="list-style-type: none"> <li>Any person who contributes towards the spread of Siberian lyme grass through their actions.</li> <li>Any person who does not report the presence of Siberian lyme grass outside of cultivation.</li> </ul>   |
| <b>Smilax</b>              | Eradication             | The Southland community.   | <ul style="list-style-type: none"> <li>Any person who propagates or transports smilax.</li> <li>Owners and/or occupiers who have smilax on their land.</li> </ul>   |
| <b>Spartina</b>            | Eradication             | The Southland community through prevention of loss of public good benefits.  | <ul style="list-style-type: none"> <li>Any person who knowingly does not report the presence of spartina.</li> <li>Any person who unknowingly does not report the presence of spartina.</li> </ul>  |
| <b>Wilding Conifers</b>    | Progressive containment | <ul style="list-style-type: none"> <li>Wider community who will benefit from prevention of impacts to biodiversity.</li> <li>Owners and/or occupiers who will benefit from protection of production values.</li> </ul> | <ul style="list-style-type: none"> <li>Any person transporting wilding conifers into or around the region.</li> <li>Owners and/or occupiers with wilding conifers on their property not undertaking control, or owners of plantation forestry which is spreading seeds onto neighbouring properties.</li> </ul> |

| Pest  | Primary programme       | Beneficiaries   | Exacerbators   |
|---|-------------------------|---|--|
| <b>Animals</b>  |                         |   |  |
| <b>Bengal cat</b>   | Progressive containment | The Southland community.  | <ul style="list-style-type: none"> <li>• Owners of Bengal cats.</li> <li>• Breeders and sellers of Bengal cats outside of Southland.</li> </ul>  |
| <b>Possum</b>   | Sustained control       | <ul style="list-style-type: none"> <li>• The Southland community – by protection of biodiversity from possum impacts,</li> <li>• Owners and/or occupiers – primarily economic – protection from TB and other diseases carried by possum as well as production loss</li> </ul> | <ul style="list-style-type: none"> <li>• Owners and/or occupiers that allow spread from their land.</li> <li>• Crown as a landowner that allows spread from its land.</li> </ul>   |
| <b>Rabbit</b>   | Sustained control       | <ul style="list-style-type: none"> <li>• Owners and/or occupiers with high rabbit populations and their neighbouring owners and/or occupiers.</li> <li>• The wider community who will benefit from prevention of damage to biodiversity.</li> </ul>                           | <ul style="list-style-type: none"> <li>• Any person transporting rabbits (feral) into or around the region.</li> <li>• Owners and/or occupiers with rabbits (feral) on their property not undertaking control.</li> </ul>        |
| <b>Rook</b>   | Exclusion               | <ul style="list-style-type: none"> <li>• Regional public who will benefit by the protection of biodiversity from rook impacts.</li> <li>• Owners and/or occupiers who will benefit from their economic impacts being protected.</li> </ul>                                    | <ul style="list-style-type: none"> <li>• Owners and/or occupiers who knowingly see, harbour and disturb rooks.</li> <li>• Owners and/or occupiers with crops, young grass, and other habitat favourable (tall trees).</li> </ul> |
| <b>Wallaby - Bennett's, Dama, Parma, Brushtail Rock and Swamp</b> | Exclusion               | <ul style="list-style-type: none"> <li>• General public who will benefit through the protection of environmental</li> </ul>   | <ul style="list-style-type: none"> <li>• Illegal releases.</li> <li>• Owners and/or occupiers who allow releases or harbour known populations or</li> </ul>  |

| Pest                                   | Primary programme       | Beneficiaries   | Exacerbators  |
|--|-------------------------|---|---|
|  |                         | <p>impacts.</p> <ul style="list-style-type: none"> <li>Land owners and/or occupiers with potential habitat through protection of economic values.</li> </ul>                                      | allow increases.  |
| <b>Marine</b>                          |                         |   |   |
| <b>Asian paddle crab</b>               | Exclusion               | <ul style="list-style-type: none"> <li>Southland community</li> <li>Commercial fishing sector</li> <li>Recreational fishing sector</li> <li>Tourism sector</li> <li>Aquaculture sector</li> </ul> | <ul style="list-style-type: none"> <li>All vessel owners and aquaculture farm operators not following marine biosecurity best practice when moving from one location to another e.g. poor antifoul condition, not inspecting hull, equipment, stock transfers etc.</li> <li>All vessel owners and aquaculture farm operators adhering to marine biosecurity best practice. Best practice may still promote the transport of marine pest species from one region to another.</li> <li>Aquaculture farms, marinas, ports not controlling marine pests on structures and equipment.</li> </ul> |
| <b>Sea squirts</b>                     | Exclusion               | <ul style="list-style-type: none"> <li>Southland community</li> <li>Commercial fishing sector</li> <li>Recreational fishing sector</li> <li>Tourism sector</li> <li>Aquaculture sector</li> </ul> |   |
| <b>Sabella (Mediterranean fanworm)</b> | Exclusion               | <ul style="list-style-type: none"> <li>Southland community</li> <li>Commercial fishing sector</li> <li>Recreational fishing sector</li> <li>Tourism sector</li> <li>Aquaculture sector</li> </ul> |   |
| <b><i>Undaria</i></b>                  | Progressive containment | <ul style="list-style-type: none"> <li>Southland community</li> <li>Commercial fishing sector</li> <li>Recreational fishing sector</li> <li>Tourism industry</li> <li>Tourists</li> </ul>         |   |



| Site-led programmes    |  |  |
|------------------------|--|--|
| Sites                  | Beneficiaries  | Exacerbators   |
| Stewart Island/Rakiura | <ul style="list-style-type: none"> <li>Stewart Island/Rakiura Community</li> <li>Stewart Island Rakiura Community and Environment Trust</li> <li>Titi Island committees and beneficiary's</li> <li>Southland Community</li> <li>National Community</li> <li>Tourists</li> <li>Tourism Operators</li> <li>Department of Conservation</li> <li>Southland District Council</li> </ul> | <ul style="list-style-type: none"> <li>Cat colony advocates/people who feed colony cats within the Stewart Island/Rakiura area.</li> <li>Cat owners that have not already, at the time the Regional Pest Management Plan becomes operative, microchipped and neutered their domestic cats.</li> <li>Non-compliant cat owners including holiday makers.</li> <li>People who actively dump unwanted domestic cats within the Stewart Island/Rakiura area.</li> <li>Non-compliant pig or goat owners.</li> <li>Owners and/or occupiers who dislike the use of herbicide control on their property.</li> <li>Owners and/or occupiers who dislike the use of herbicide control on their property.</li> <li>Owners and/or occupiers who do not control site led species on their land within the Stewart Island/Rakiura area.</li> <li>People who do not remove pests from boats or planes traveling to or between the Islands of Stewart Island/Rakiura.</li> </ul> |
| Omaui                  | <ul style="list-style-type: none"> <li>Omaui Landcare Group</li> <li>Department of Conservation</li> <li>Invercargill City Council</li> <li>Omaui Community</li> <li>Southland Community</li> <li>National Community</li> <li>Tourists</li> </ul>  | <ul style="list-style-type: none"> <li>Cat colony advocates/people who feed colony cats within the Omaui area.</li> <li>Non-compliant cat owners.</li> <li>People who actively dump unwanted domestic cats within the Omaui area.</li> <li>People who do not</li> </ul>  |

| Site-led programmes |               |   |
|---------------------|---------------|---|
| Sites               | Beneficiaries | Exacerbators  |
|                     |               | control feral cats on their land within the Omaui area or within a cat's territorial range of the Omaui area. |

## 9.4 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 Plan;
- those who benefit from the Plan; 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 RPMP 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 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 RPMP, 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.

## 9.5 Anticipated costs of implementing the Plan

The anticipated costs of implementing the proposed RPMP 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 the [organisation]. Such funds will offset rates or be used as a value-added component in appropriate circumstances.

The funding for the implementation of the proposed Plan 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 this plan 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 30: 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, Eradication, Exclusion & Progressive Containment   | 202,900            |
| Pest Animals - Site-led  | 22,074             |
| Pest Plants - Site-led   | 28,628             |
| Monitoring   | 218,722            |
| <b>Total</b>   | <b>\$1,844,405</b> |

## 9.6 Funding limitations

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

## 9.7 Effect on the marketing overseas of New Zealand products

Implementation of the Plan will not have an effect on the marketing overseas of New Zealand products.

## Glossary of Terms

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

|                           |  |
|---------------------------|--|
| <b>Act</b>                | means the Biosecurity Act 1993.  |
| <b>Adjacent</b>           | means, for the purpose of this Plan, a property that is next to, or adjoining, another property.   |
| <b>Animal</b>             | means any mammal, insect, bird or fish, including invertebrates, and any other living organism except a plant or a human.  |
| <b>Authorised Person</b>  | has the same meaning as in the Biosecurity Act 1993 <i>“a person for the time being appointed an authorised person under Section 103.”</i>   |
| <b>Beneficiaries</b>      | means the receivers of benefits accruing from the implementation of a pest management measure or plan.   |
| <b>Biological Control</b> | means the introduction and establishment of natural enemies that will prey on or adversely affect a pest or other organisms to be controlled.  |
| <b>Destroy</b>            | means pull, breakdown, demolish, make useless, kill, cause to cease to exist.  |
| <b>Direction</b>          | 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.   |
| <b>Distribute</b>         | means to transport or spread a pest in any way.  |
| <b>Ecosystem</b>          | means a dynamic complex of plant, animal and micro-organism communities and their non-living environment, interacting as a functioning unit.   |
| <b>Effect</b>             | <p>has the same meaning as in the Biosecurity Act 1993, and:</p> <ul style="list-style-type: none"><li>(a) <i>includes the following, regardless of scale, intensity, duration, or frequency:</i><ul style="list-style-type: none"><li>(i) <i>a positive or adverse effect; and</i></li><li>(ii) <i>a temporary or permanent effect; and</i></li><li>(iii) <i>a past, present, or future effect and</i></li><li>(iv) <i>a cumulative effect that arises over time or in combination with other effects; and</i></li></ul></li><li>(b) <i>also includes the following:</i><ul style="list-style-type: none"><li>(i) <i>a potential effect of high probability, and</i></li><li>(ii) <i>a potential effect of low probability that has a high potential impact</i></li></ul></li></ul> |

|                              |  |
|------------------------------|--|
| <b>Environment</b>           | <p>has the same meaning as in the Biosecurity Act 1993:<br/> <i>"includes—</i></p> <ul style="list-style-type: none"> <li><i>(a) ecosystems and their constituent parts, including people and their communities; and</i></li> <li><i>(b) all natural and physical resources; and</i></li> <li><i>(c) amenity values; and</i></li> <li><i>(d) the aesthetic, cultural, economic, and social conditions that affect or are affected by any matter referred to in paragraphs (a) to (c)."</i></li> </ul>  |
| <b>Environment Southland</b> | means the Southland Regional Council <i>Te Taiao Tonga</i> .   |
| <b>Environmental values</b>  | 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.  |
| <b>Exacerbator</b>           | means the person creating, aggravating or contributing to a particular pest management problem that the Plan proposes to resolve, by action or inaction.   |
| <b>Feral</b>                 | means wild or otherwise unmanaged.   |
| <b>Good Neighbour Rule</b>   | <p>has the same meaning as in the Biosecurity Act 1993:<br/> <i>"means a rule to which the following apply:</i></p> <ul style="list-style-type: none"> <li><i>(a) it applies to an occupier of land and to a pest or pest agent that is present on the land; and</i></li> <li><i>(b) it seeks to manage the spread of a pest that would cause costs to occupiers of land that is adjacent or nearby; and</i></li> <li><i>(c) it is identified in a regional pest management plan as a good neighbour rule; and</i></li> <li><i>(d) it complies with the directions in the national policy direction relating to the setting of good neighbour rules."</i></li> </ul> |
| <b>Good</b>                  | is defined under the Act as any personal property.   |
| <b>Habitat</b>               | means the place or type of site where an organism or population normally exists.   |
| <b>Indigenous</b>            | means produced by, or naturally belonging to, a particular region or area.   |
| <b>Management agency</b>     | <p>has the same meaning as in the Biosecurity Act 1993:<br/> <i>"the body specified as the management agency in a pest management plan or a pathway management plan."</i></p> <p>For the purposes of this Proposal, Environment Southland is the management agency.</p>  |

|                                  |   |
|----------------------------------|---|
| <b>Monitoring</b>                | 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.   |
| <b>National Policy Direction</b> | in respect of this Proposal, means the National Policy Direction for Pest Management 2015 made under Sections 56-58 of the Act.   |
| <b>Non-arable land</b>           | land not suitable for growing crops.  |
| <b>Occupier</b>                  | has the same meaning as in the Biosecurity Act 1993:<br><i>“(a) in relation to any place physically occupied by any person, means that person; and<br/> (b) in relation to any other place, means the owner of the place; and<br/> (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.”</i>   |
| <b>Organism</b>                  | has the same meaning as in the Biosecurity Act 1993:<br><i>“(a) does not include a human being or a genetic structure derived from a human being;<br/> (b) Includes a micro-organism;<br/> (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);<br/> (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;<br/> (e) includes a reproductive cell or developmental stage of an organism;<br/> (f) includes any particle that is a prion.”</i> |
| <b>Person</b>                    | has the same meaning as in the Biosecurity Act 1993:<br><i>“includes the Crown, a corporation sole, and a body of persons (whether corporate or un-incorporate).”</i>   |
| <b>Pest</b>                      | has the same meaning as in the Biosecurity Act 1993:<br><i>“an organism specified as a pest in a pest management strategy.”</i>   |
| <b>Pest Management Plan</b>      | has the same meaning as in the Biosecurity Act 1993:<br><i>“a plan, made under Part 5 of this Act, for the management or eradication of a particular pest or pests.”</i>  |
| <b>Plant</b>                     | 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.   |

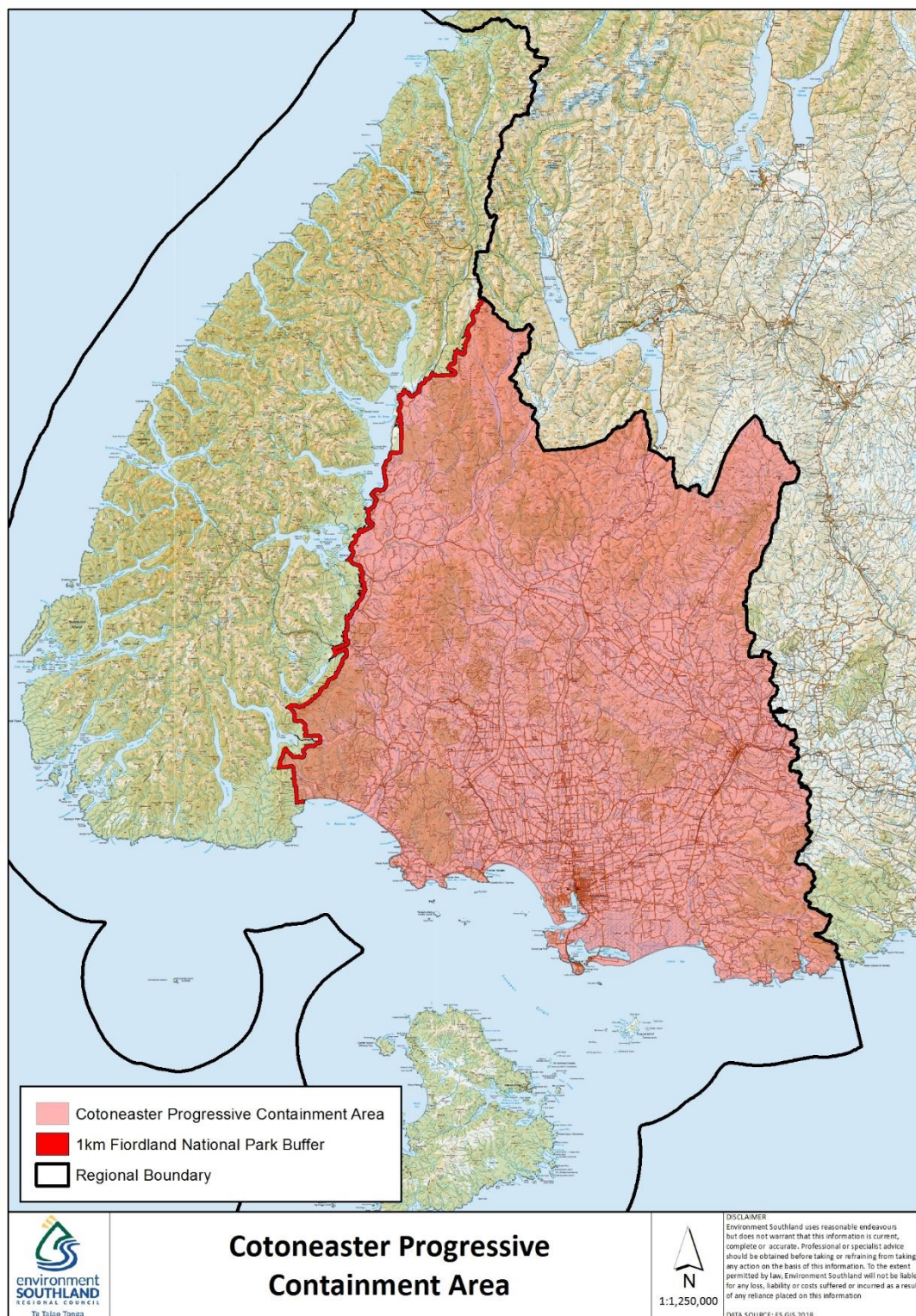
|                        |   |
|------------------------|---|
| <b>Propagation</b>     | means to multiply or reproduce by sowing, grafting, breeding or any other way.  |
| <b>Sale</b>            | includes bartering; attempting to sell; having in possession for sale; sending or delivery for sale; causing or allowing to be sold, offered or exposed for sale. "Sell" has a corresponding meaning.   |
| <b>Subject</b>         | 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 plan applies.  |
| <b>Wilding conifer</b> | Wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in Table 12, 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

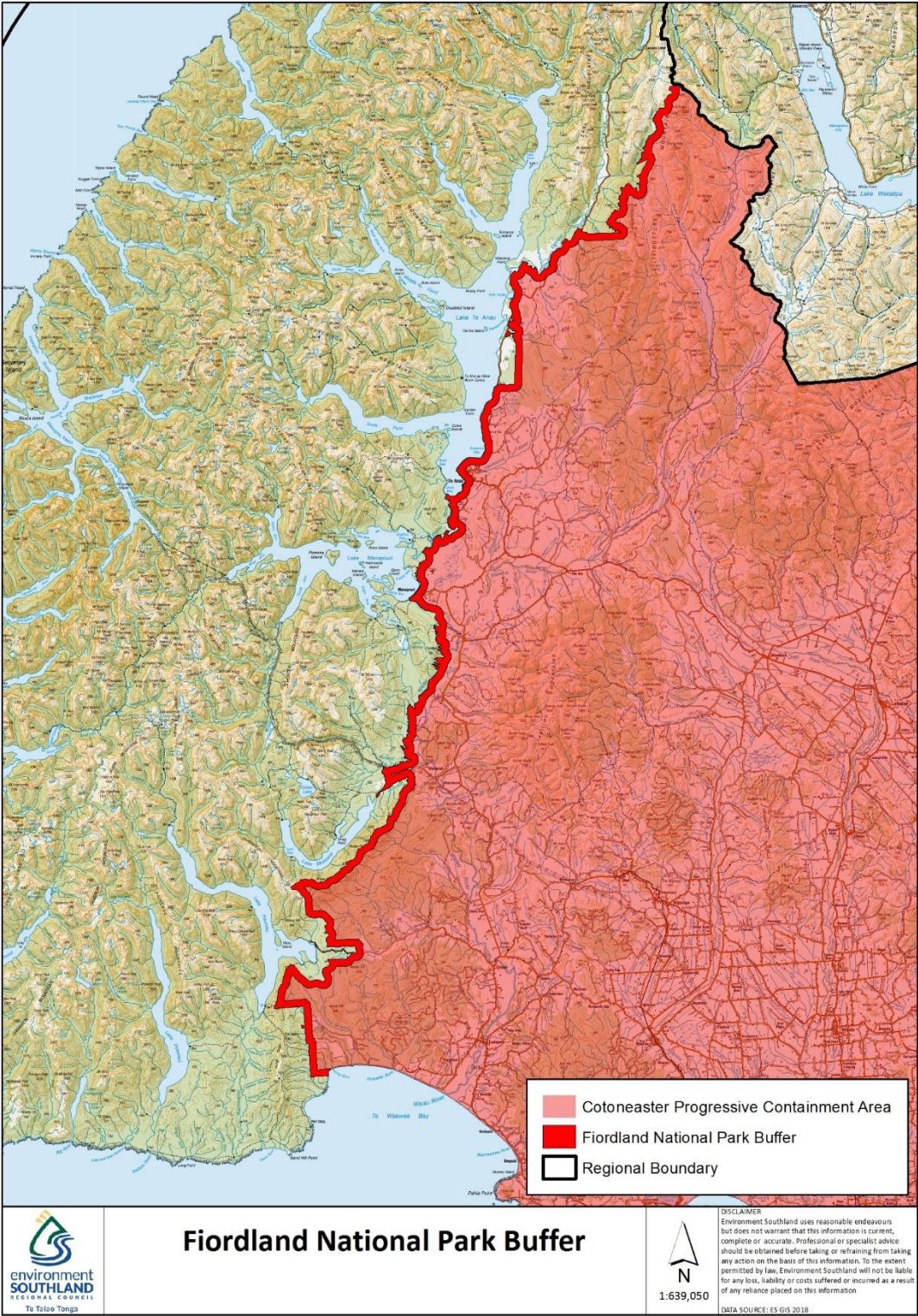
### Appendix 1: Maps

Map 1a



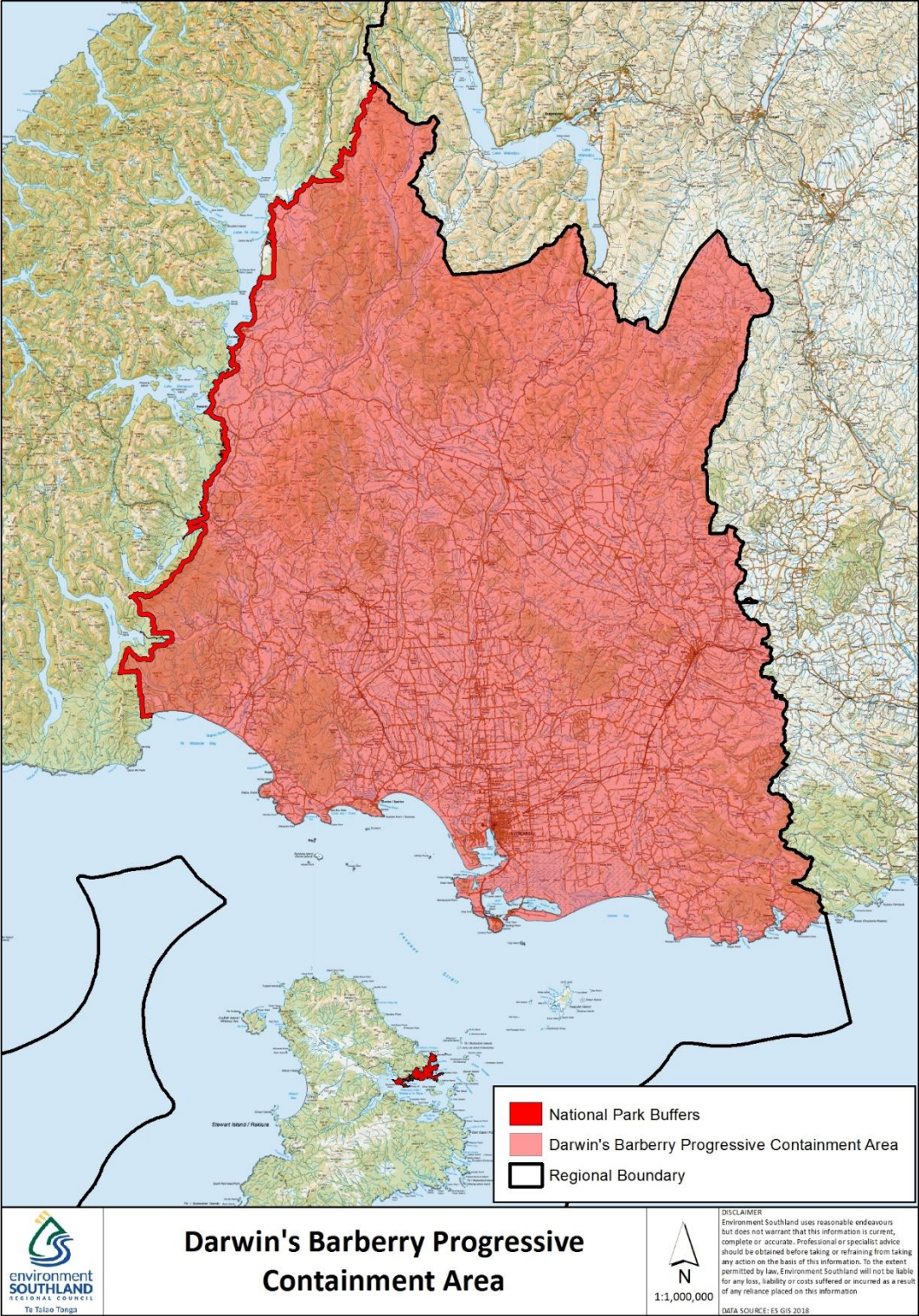


Map 1b



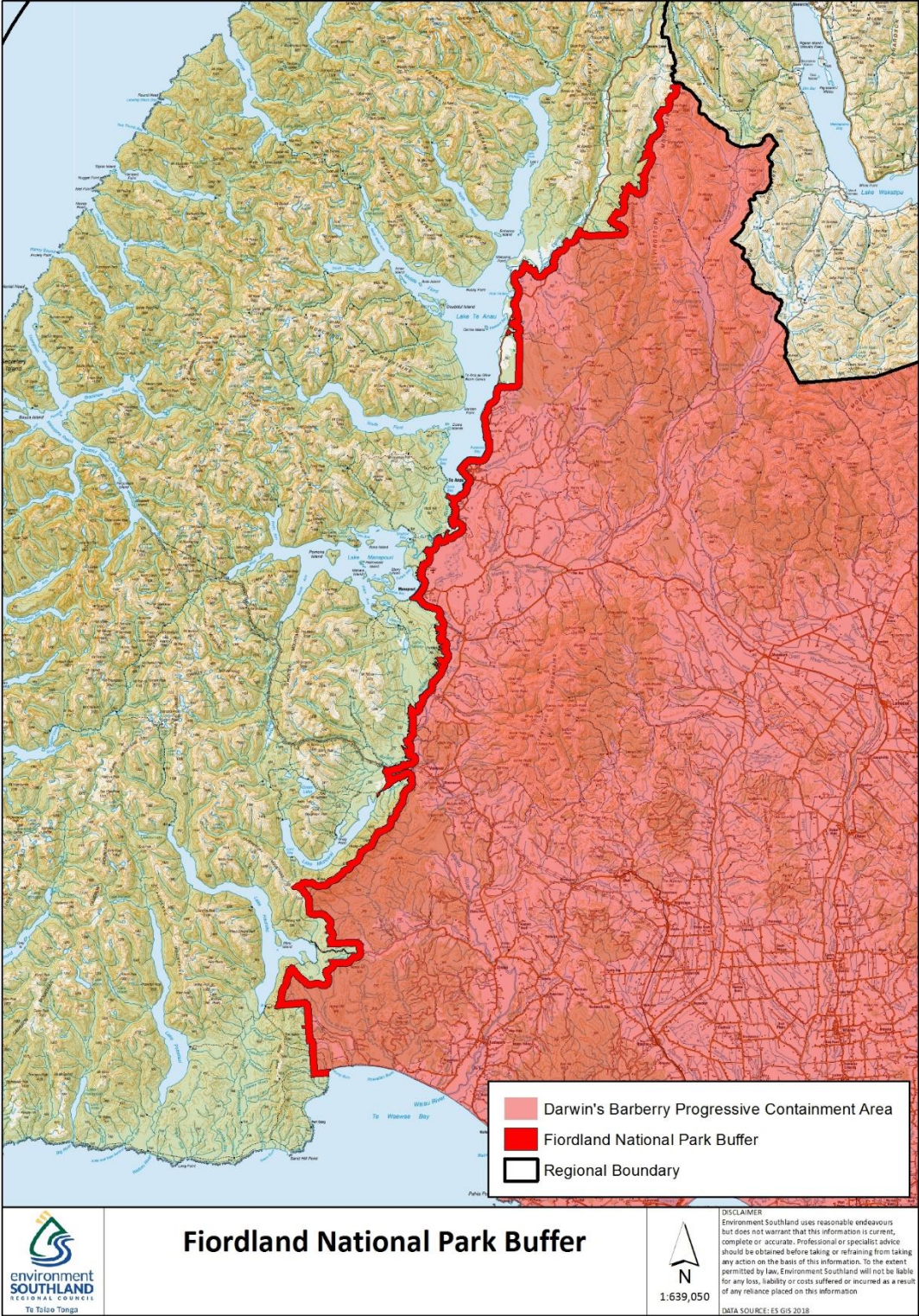


Map 2a





Map 2b



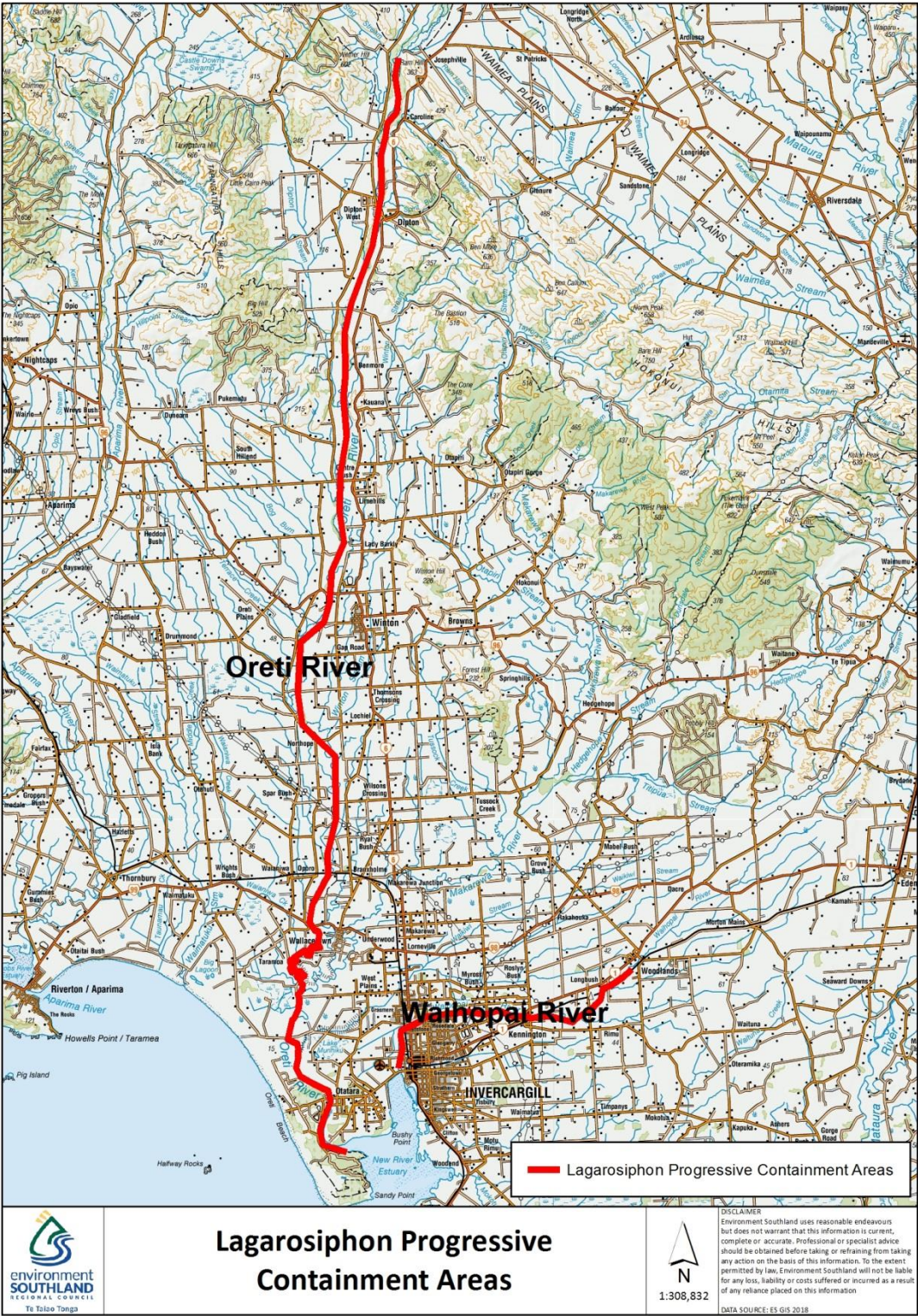


Map 2c



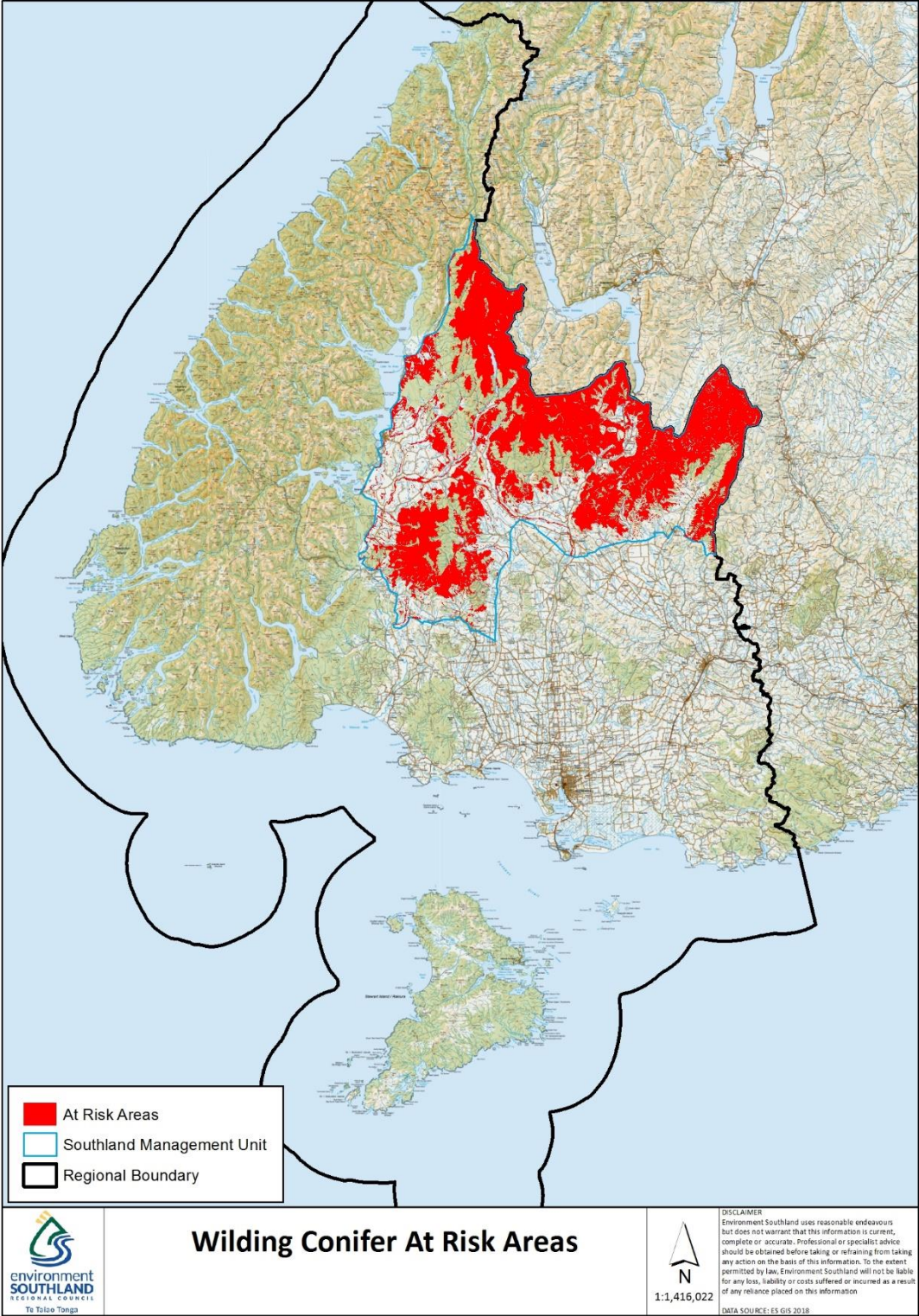


Map 3



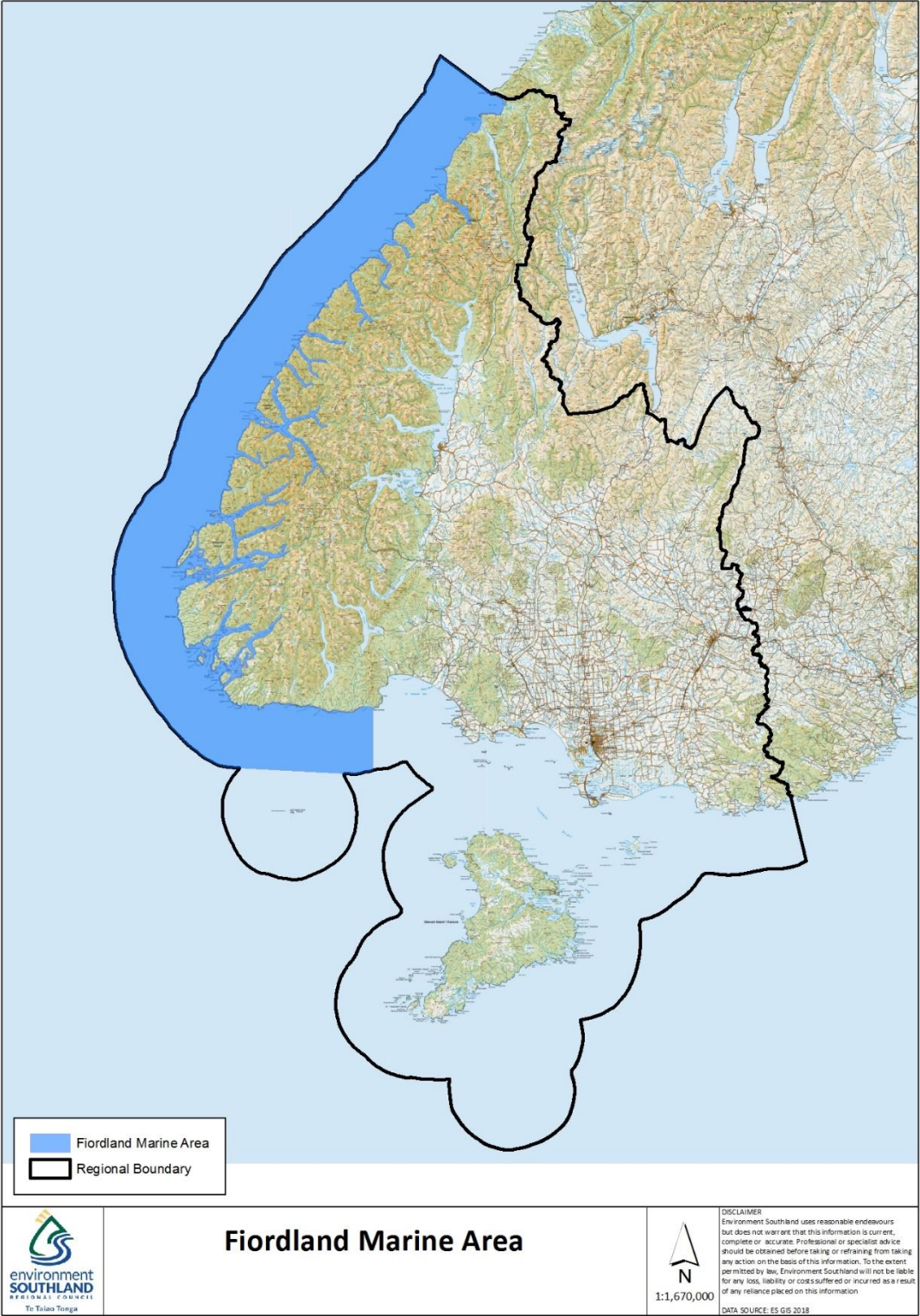


Map 4





Map 5a

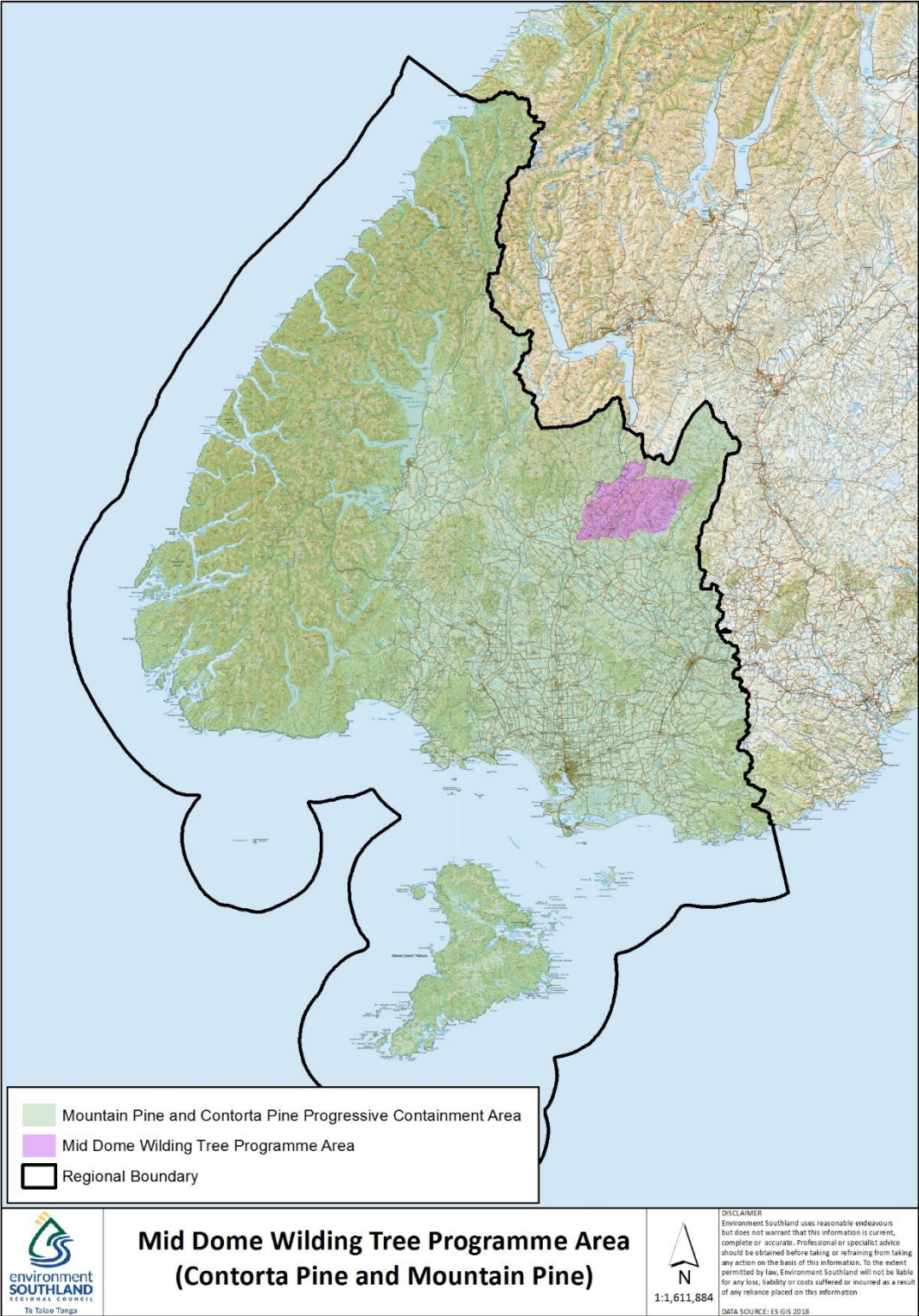


Map 5b



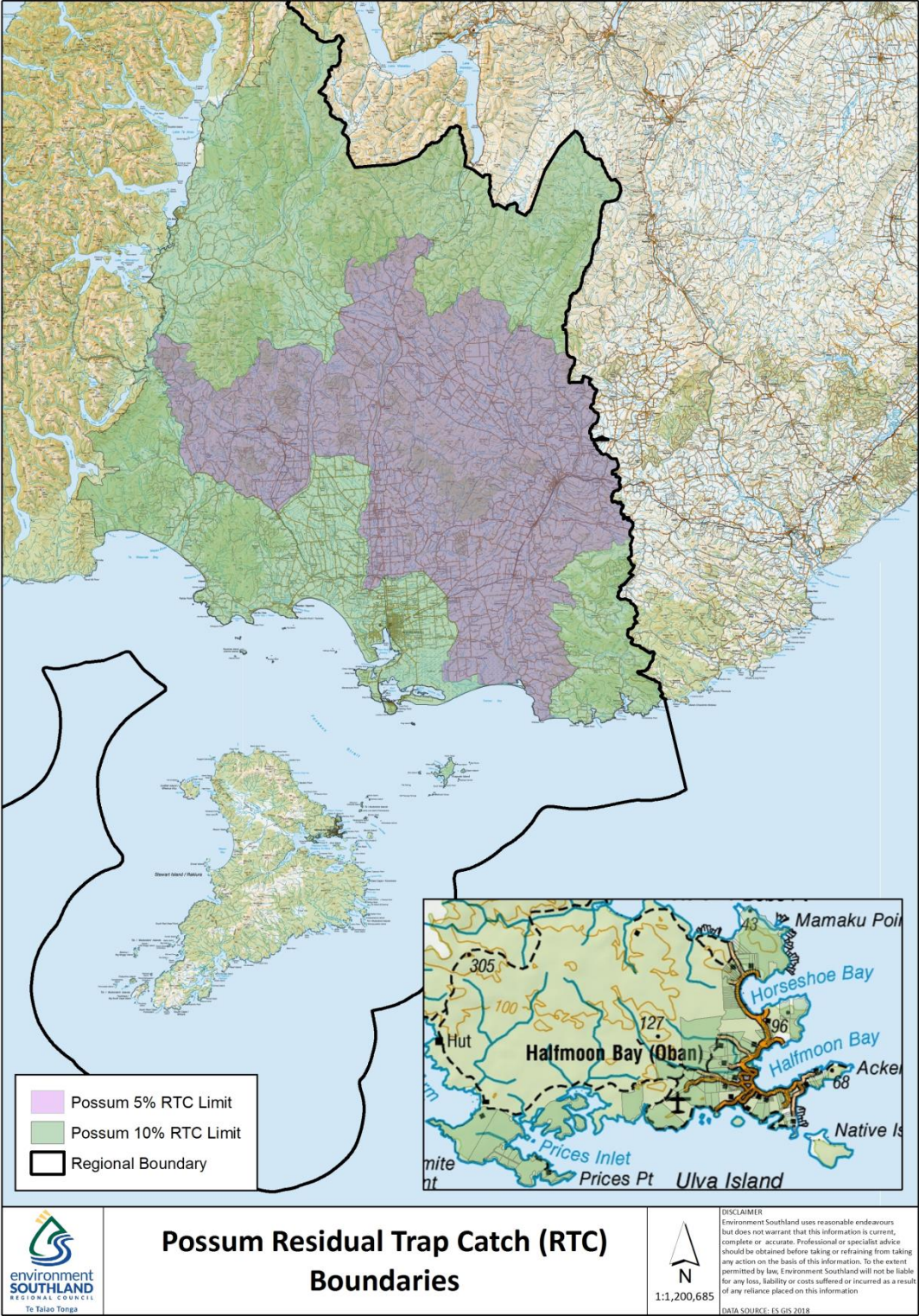


Map 6

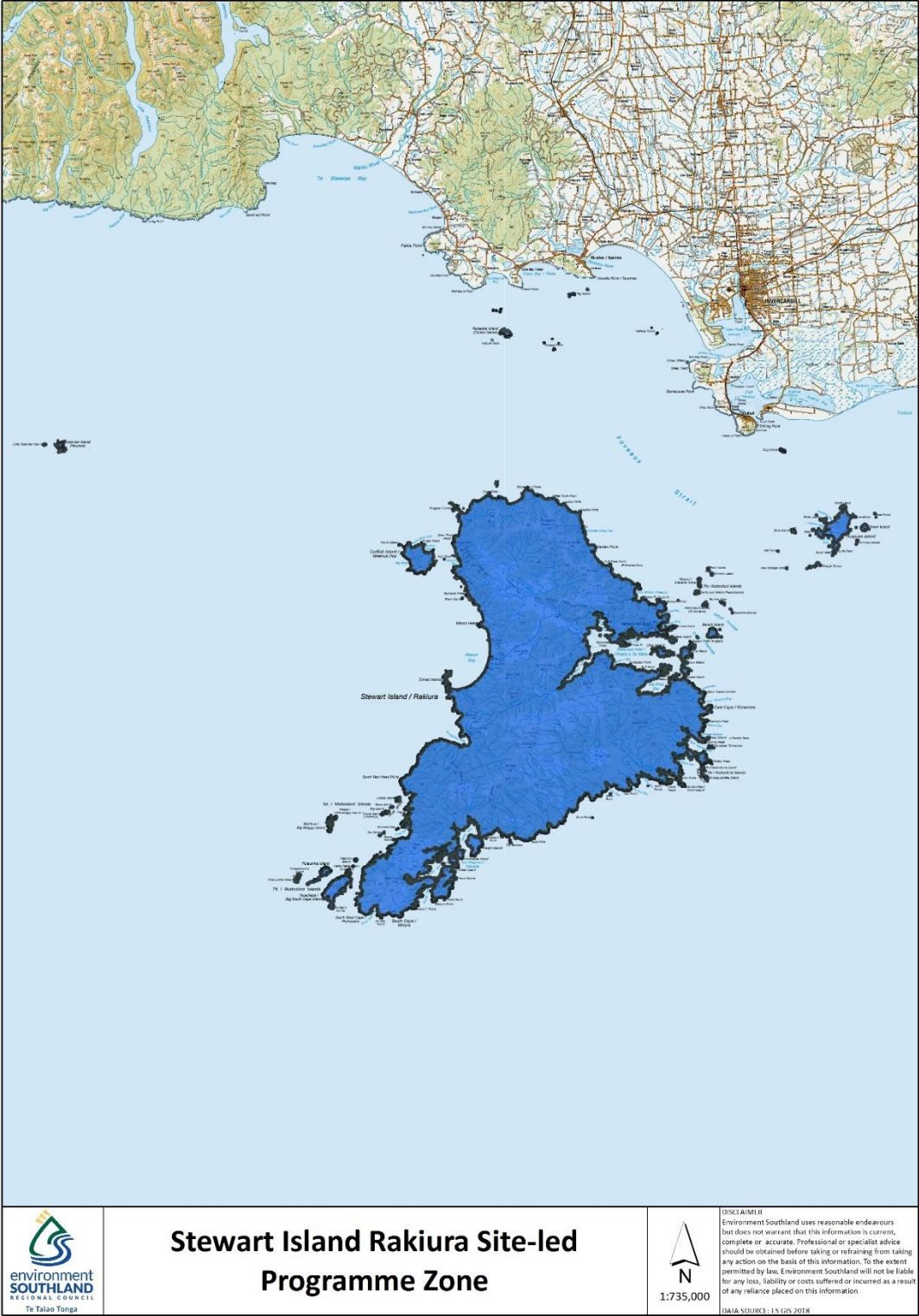




Map 7

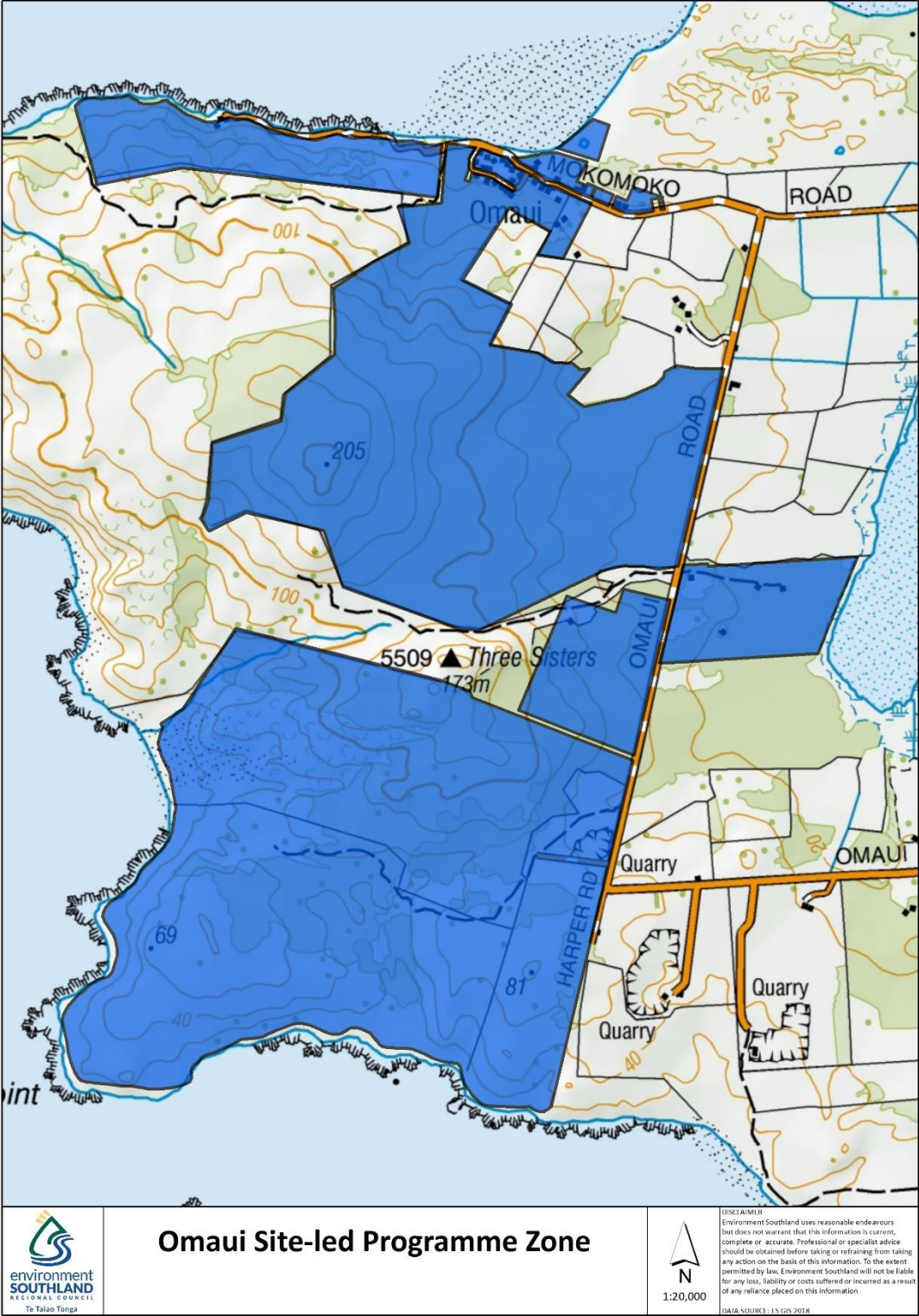


Map 8





Map 9





## Appendix 2: Organisms of interest

| Animals  | Plants   |   | Marine   | Other  |
|--|--|---|--|--|
| Ants (Argentine, Darwin's)<br><i>Linepithema humile</i><br>& <i>Doleromyrma darwiniana</i>   | African feather grass <i>Cenchrus macrourus</i>                        | Hornwort<br><i>Ceratophyllum demersum</i>                                   | Asian date mussel<br><i>Arcuatula senhousia</i>    | Potato Wart<br><i>Synchytrium endobioticum</i> |
| Canada goose<br><i>Branta canadensis</i>   | Aluminium plant<br><i>Lamium galeobdolon</i><br><i>Amelanchier spp</i> | Ice plant<br><i>Carpobrotus edulis</i>                                      | Asian semele<br><i>Theora lubrica</i>              | Myrtle Rust<br><i>Uredo rangellii</i>          |
| Cattle tick<br><i>Haemaphysalis longicornis</i>  | Angelica <i>Angelica pachycarpa</i>                                    | Japanese knotweed <i>Fallopia japonica</i>                                  | Spaghetti bryozoan<br><i>Amanthia verticillata</i> | Lake Snow<br><i>Lindavia intermedia</i>        |
| Chamois<br><i>Rupicapra rupicapra</i>  | Banana passionfruit<br><i>Passiflora spp</i>                           | Mayten tree<br>Maytenus boaria  |  |  |
| Chinchilla<br><i>Chinchilla spp</i>  | Bittersweet<br><i>Solanum dulcamara</i>                                | Montbretia<br><i>Crocasmia x crocosmiflora</i>                              |  |  |
| Feral deer inc. Hybrids, (Wapiti<br><i>Cervus elaphus nelsoni</i> , Red<br><i>Cervus elaphus</i> , Fallow <i>Dama dama</i> , Whitetail<br><i>Odocoileus virginianus</i> , Sika<br><i>Cervus nippon</i> , Samba <i>Cervus unicolor</i> , Rusa<br><i>Cervus timorensi</i> .) | Blackberry <i>Rubus fruticosus</i> agg. <i>R. laciniatus</i>           | Montpellier broom<br><i>Genista monspessulana</i>                           |  |  |
|  | Californian thistle<br><i>Cirsium arvense</i>                          | Pampas grass (white)<br><i>Cortaderia selloana</i>                          |  |  |
|  | Cape honey flower<br><i>Melianthus major</i>                           | Purple pampas<br><i>Cortaderia jubata</i>                                   |  |  |
|  | Cherry laurel<br><i>Prunus laurocerasus</i>                            | Periwinkle <i>Vinca major</i><br>Common reed<br><i>Phragmites australis</i> |  |  |
|  | Chilean fire bush<br><i>Embothrium coccineum</i>                       | Rowan <i>Sorbus aucuparia</i>   |  |  |
| Fish (Rudd<br><i>Scardinius erythrophthalmus</i> , Tench <i>Tinca tinca</i> , Orfe <i>Leuciscus idus</i> , Koi carp<br><i>Cyprinus carpio</i> , Catfish <i>Ictalurus nebulosus</i> , Gambusia<br><i>Gambusia affinis</i> )   | Chilean guava <i>Ugni molinae</i>                                      | Russell Lupin<br><i>Lupinus polyphyllus</i>                                 |  |  |
|  | Collomia <i>Collomia cavanillesii</i>                                  | Scotch thistle<br><i>Cirsium vulgare</i>                                    |  |  |
|  | Common barberry<br><i>Berberis glaucocarpa</i>                         | Silver birch <i>Betula pendula</i>  |  |  |

| Animals  | Plants   |   | Marine | Other |
|--|--|---|--------|-------|
| Himalayan Tahr<br><i>Hemitragus jemlahicus</i>   | Common (English) ivy <i>Hedera helix</i>                     | Stonecrop <i>Sedum acre</i>                     |        |       |
| Magpie<br><i>Gymnorhina tibicen</i>  | <i>Egeria Egeria densa</i>                                   | Sweet briar <i>Rosa rubiginosa</i>              |        |       |
| German, Common Wasps <i>Vespula spp</i>  | English spindleberry<br><i>Euonymus europaeus</i>            | Sycamore <i>Acer pseudoplatanus</i>             |        |       |
| Mustelids (Ferret <i>Mustela furo</i> , Stoat <i>Mustela erminea</i> , Weasel <i>Mustela nivalis</i> ) | Giant hogweed<br><i>Heracleum mantegazzianum</i>             | Tradescantia<br><i>Tradescantia fluminensis</i> |        |       |
| Hedgehogs<br><i>Erinacaous europaeus</i>   | Green daphne<br><i>Daphne laureola</i>                       | Tree lupin <i>Lupinus arboreus</i>              |        |       |
|  | Hawkweeds<br><i>Hieracium spp.</i> and <i>Pilosella spp.</i> | Tutsan <i>Hypericum androsaemum</i>             |        |       |
|  | Hemlock <i>Conium maculatum</i>                              | Velvetleaf <i>Abutilon theophrasti</i>          |        |       |
|  | Himalayan honeysuckle<br><i>Leycesteria formosa</i>          |   |        |       |
|  | Holly <i>Ilex aquifolium</i>                                 |   |        |       |

## Appendix 3: 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/or 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 delivered.
  - the nature and level of support needed from Environment Southland.
- The programme is resourced for its duration.

## Appendix 4: Modified McLean Scale (2012)

| Modified McLean Scale |  |
|-----------------------|--|
| Level                 | Description  |
| 1                     | No sign. No rabbits seen.  |
| 2                     | Very infrequent sign present. Unlikely to see rabbits.   |
| 3                     | Sign infrequent with heaps more than 10 m apart. Odd rabbits may be seen.  |
| 4                     | Sign frequent with heaps more than 5 m apart but less than 10 m apart. Groups of rabbits may be seen.  |
| 5                     | Sign very frequent with heaps less than 5 m apart in pockets. Rabbits spreading.   |
| 6                     | Sign very frequent with heaps less than 5 m apart over the whole area.   |
| 7                     | Sign very frequent with 2-3 heaps often less than 5 m apart over the whole area. Rabbits may be seen in large numbers over the whole area.             |
| 8                     | Sign very frequent with 3 or more heaps often less than 5 m apart over the whole area. Rabbits likely to be seen in large numbers over the whole area. |
| 9                     | Infestation almost at peak.  |
| 10                    | Maximum level, rabbits must spread out over a wide area or starve.   |

