CANTERBURY REGIONAL COUNCIL

Kaunihera Taiao ki Waitaha

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Canterbury Regional Pest Management Plan

2018-2038

I hereby certify that this is a true and correct copy of the Canterbury Regional Pest Management Plan, made on 15 June 2018 being the date the common seal of the Canterbury Regional Council is fixed to the plan in accordance with Section 77(1) of the Biosecurity Act 1993.

The Canterbury Regional Pest Management Plan will be publicly notified on 23 June 2018 and commences on 1 July 2018.

The Common Seal of the Canterbury Regional Council was fixed in the presence of:

Katherine Trought
Acting Chief Executive
Canterbury Regional Council

CANTERBURY REGIONAL COUNCIL
THE COMMON SEAL OF

Steve Lowndes
Chairperson
Canterbury Regional Council

15 June 2018

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FOREWORD

It is with great pleasure that I write this introduction to the new Canterbury Regional Pest Management Plan.

Pest management and biosecurity are important areas of the work regional councils do. Environment Canterbury has recognised this by positioning biosecurity alongside water management and biodiversity as priority for our attention.

It is testament to the hard work of many people, and consideration by many members of the community, that we now have a plan that is fit to meet our current and future pest management challenges.

We undertook a comprehensive review of the existing pest management plan to make sure the right rules were in place to manage existing and emerging pest threats, and to prevent damage to biodiversity and production.

The previous plan focused mainly on managing legacy pests that affect production land, such as broom, gorse, rabbits, wallaby and nassella tussock.

The emphasis in the new plan is therefore on maintaining efforts to prevent existing pests from proliferating, while also increasing the focus on stopping new pests entering the region and becoming established.

This approach will help us become more resilient, with pests managed for both production land and biodiversity protection purposes. The review also made sure our plan is aligned with neighbouring regions' to help prevent new pests arriving here.

The new direction places more responsibility on individual landowners to manage pests on their properties themselves, with our efforts focusing more on preventing pest spread to neighbouring properties. Environment Canterbury will have a leadership role, with extra emphasis on advice, education and working with the community.

There is more focus on pests that impact on our regional biodiversity and acknowledgement that much of the pest control done throughout the region benefits biodiversity. The inclusion of site-led programmes gives us a new way of working, with the ability to target pest management to areas of biodiversity value.

The new plan delivers realistic objectives that can be achieved over time, with improved ways of working; more flexibility from an improved funding rationale, and better consistency both regionally and nationally.

In playing its part, Environment Canterbury will deploy its resources more efficiently and effectively, improve the way we work with landowners and the community, and seek opportunities for more partnerships with papatipu rūnanga, industry and other agencies. Effective communication will be key to success in all areas.

I am confident that the Canterbury Regional Pest Management Plan 2018-38 will stand the test of time and help us meet the many pest management challenges we have ahead of us.

Tom Lambie
Environment Canterbury Councillor

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Part One Plan Establishment

1 Introduction

1.1 Pest management in Canterbury

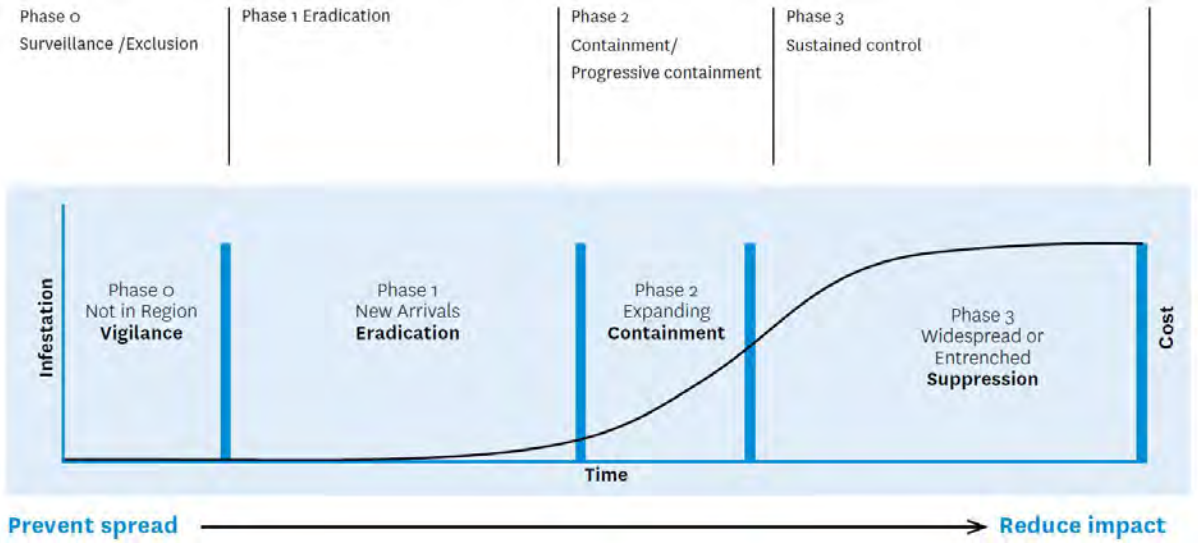
Pest management is an important part of the sustainable management of natural resources in Canterbury. Environment Canterbury manages risks posed by pests and other organisms through its Biosecurity programme. The Canterbury Regional Pest Management Plan (CRPMP) is one element of this programme and establishes the regulatory basis for pest management in Canterbury.

In the course of carrying out its functions under the Biosecurity Act 1993, and setting funding under Local Government Act 2002 Long Term Plans and Annual Plans, Environment Canterbury will often be in a position where it is necessary to balance priorities for managing impacts from unwanted organisms based on limited resources. Priorities for management will need to be set taking into account the following matters:

- The level of impact or potential impact on significant biodiversity, or primary production, values, including an evaluation of the quantifiable and non-quantifiable costs and benefits;
- Any positive or negative effects on Ngāi Tahu cultural values, including mahinga kai, wāhi tapu and wāhi taonga;
- Provide for a focus on public funding for exclusion or eradication of unwanted organisms, followed by management for containment or control, and finding the right balance; and
- Re-allocate funding to more effective uses, such as pathway management and site led programmes, that protect significant cultural, biodiversity or production values, taking into account the costs and benefits of alternative actions.

The diagram below demonstrates the impact that pest management can have in the early stage of population growth and spread.

Figure 1 Pest management incursion continuum and pest infestation stages



Original source of diagram unknown, modified by Environment Canterbury November 2017

1.2 Purpose of the 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 organisms that are present in their region. Environment Canterbury *Kaunihera Taiao ki Waitaha* therefore has this leadership role in the Canterbury region.

The purpose of the Canterbury Regional Pest Management Plan (CRPMP) is to provide for the efficient and effective management or eradication of specified harmful organisms in the Canterbury Region. It builds on the 2005-2015 Strategy and previous pest management programmes.

The purpose of the Plan is 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.

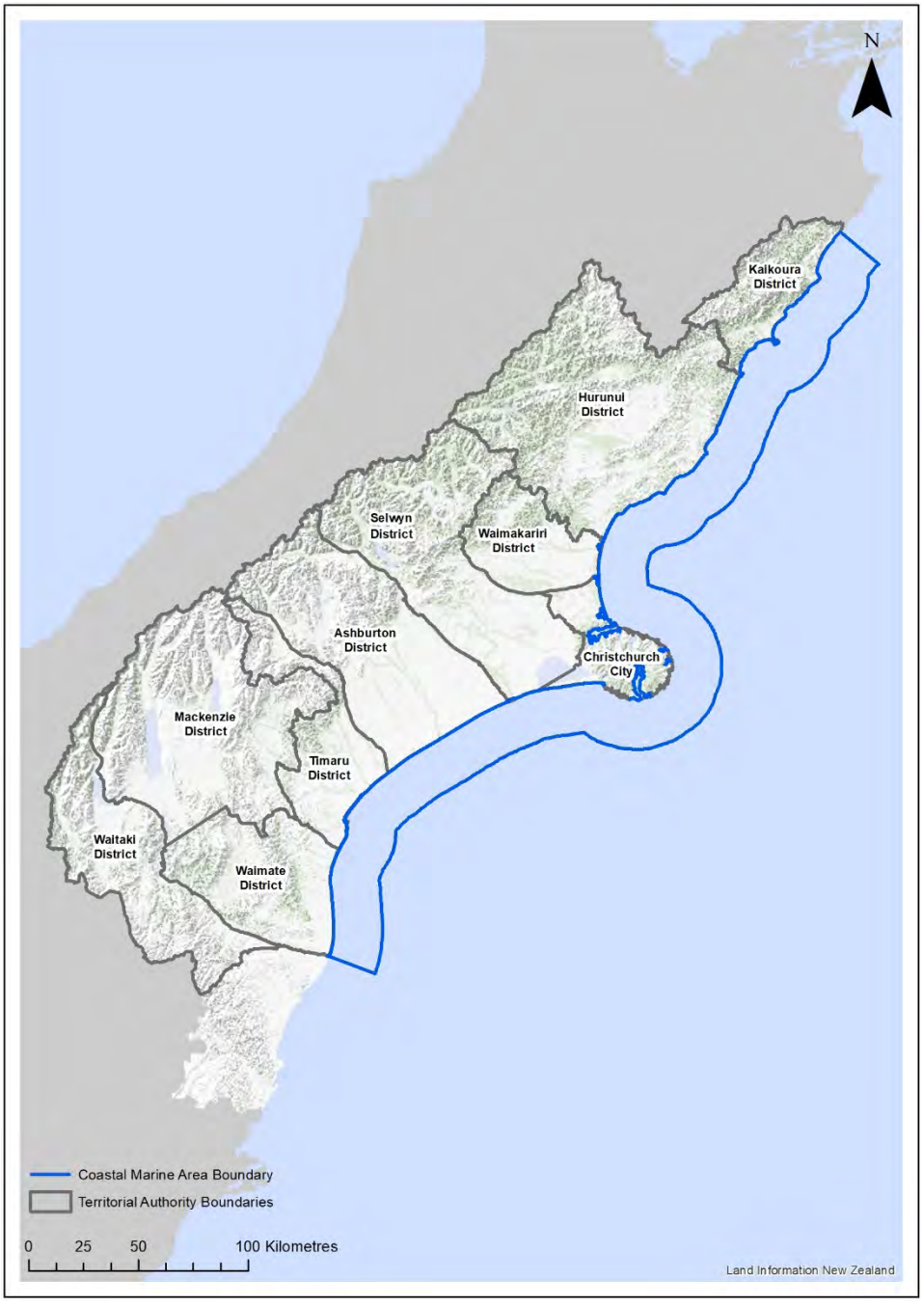
Many organisms in the Canterbury region are considered undesirable or a nuisance. This Plan only addresses pests where voluntary action is insufficient due to the nature of pest or the related costs and benefits of individual action or inaction. The Act specifies criteria that must be met to justify such intervention.

Once the CRPMP has commenced, it will empower Environment Canterbury 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 Plan.

1.3 Geographic coverage of the Plan

The CRPMP operates within the administrative boundaries of the Canterbury region and covers a total land area of 44,508 square kilometres (refer Figure 2). The exclusion, eradication, progressive containment and sustained control programmes outlined in this Plan apply to the entire Canterbury region unless a specific, smaller area is described within the relevant programme. Bennett's wallaby, broom, gorse, old man's beard, nassella tussock (in the sustained control programme), and Wilding Conifers (in the progressive containment programme) are pests with rule/s that relate to a smaller area within Canterbury. The geographic area for each site-led programme is shown in Appendix 4.

Figure 2 The Canterbury Region



1.4 Duration of the Plan

The CRPMP will take effect on the date it commences as a regional pest management plan under section 77 of the Act. It will remain in force for a period of twenty years from this date. The CRPMP may cease at an earlier date if Environment Canterbury declares by public notice that the Plan's objectives have been achieved. A review of the CRPMP as a whole must be undertaken after ten years from the date of commencement. This review may result in the CRPMP being revoked, amended or unchanged.

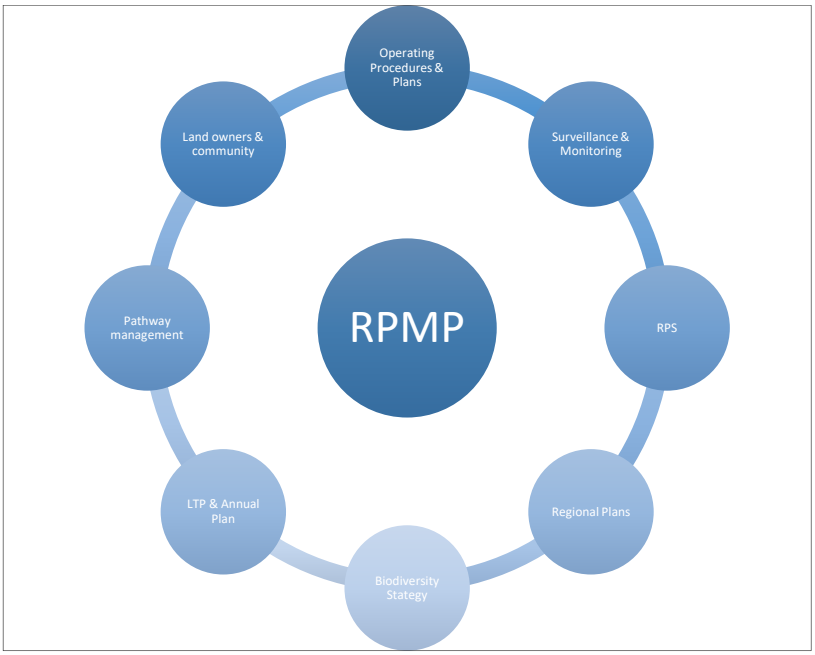
2 Planning and statutory background

2.1 Strategic background

2.1.1 An integrated biosecurity framework for Canterbury

Regional pest management sits within an integrated biosecurity framework for the Canterbury region as shown in Figure 3 below. While the CRPMP forms the centre-piece of the framework, it is complemented by supporting actions and influences. Landowners and/or occupiers and the wider community, either as beneficiaries or exacerbators[1] or both, interact with a number of supporting strategies, policies and plans.

Figure 3 A biosecurity framework for Canterbury



The Act also requires the preparation of an operational plan[2], and annual reporting on the Operational Plan, in accordance with section 100B. These are documents which provide technical information for the implementation of programmes, including monitoring and surveillance projects, which support the outcomes of CRPMP.

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. A pathway management plan might be used to

[1] Refer Appendix 1: Glossary of Terms, for definitions of beneficiary and exacerbator
[2] Refer section 7.2 of this report

establish targeted rules to prevent the introduction to an area or movement of pests within an area. Environment Canterbury intends to explore development of regional pathway plans in the future.

The Long Term Plan and Annual Plans, developed by Environment Canterbury under the Local Government Act 2002 and Local Government (Rating) Act 2002, ensure that rates are set in a transparent and consultative manner, and enable ratepayers to identify and understand their liability for rates.

The Resource Management Act 1991 (RMA) can complement pest management through National Policy Statements, National Environmental Standards and Regional Plans and Policies.

2.1.2 Biosecurity system beyond Canterbury

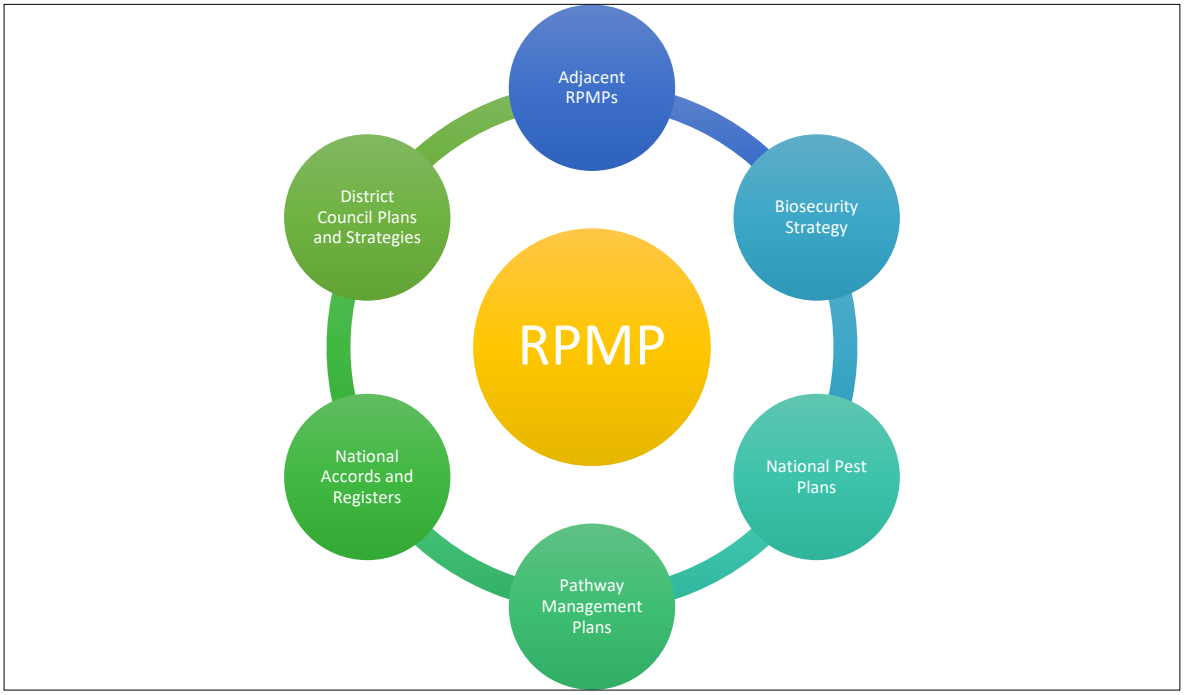
An effective biosecurity system is established within the Canterbury region, between regions and at a national level (refer Figure 4). All neighbouring regional councils, and all regional councils nation-wide, maintain operative regional pest management strategies or plans.

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

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

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

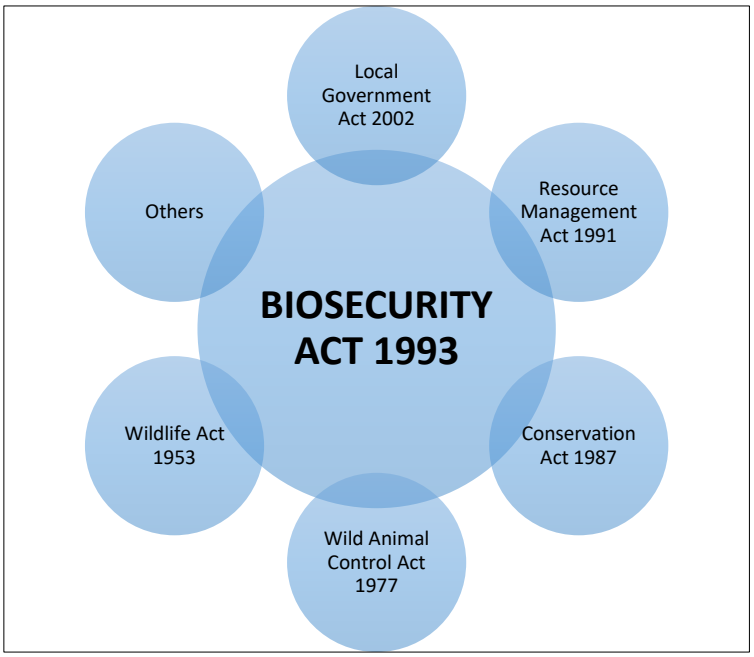
Figure 4 New Zealand's biosecurity system



2.2 Legislative background

Regional councils undertake their local government functions under several legislative statutes. Managing pests is not dependent on one particular statute, however the Biosecurity Act 1993 is central to regional councils' efficient and effective management or eradication of specified harmful organisms (refer Figure 5).

Figure 5 Legislative statutes relevant to biosecurity



2.2.1 Biosecurity Act 1993

This 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 of relevance to regional pest management, and particularly advanced through the Biosecurity Law Reform Act 2012, include:

- Regional pest management strategies are to be redeveloped as 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[3] (GNR) specified in a RPMP. Such rules apply to all occupiers within the area over which the rules apply but they can only address pest spread across a property boundary.
- The Act provided for the National Policy Direction for Pest Management 2015 (NPD). Regional pest management plans must not be inconsistent with the NPD. Further details of the NPD are provided under 2.2.2.
- 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:

[3] Refer Glossary of terms for definition of Good Neighbour Rules

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 organisms that are present in its region.

Section 12B(1) sets out the ways in which regional councils provide leadership. Some of these activities include 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;
- 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, and
- Gather information, keep records and undertake research.

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 organisms. A harmful organism is assigned pest status when it is included in a pest management plan. Sections 69–78 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 each other (when necessary), to contribute to the eradication or effective management of harmful organisms 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 Good Neighbour Rules must address specified criteria.

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 waterbodies and coastal water (section 30(1)(c)(iiia)), the control of actual or potential effects of use, development or protection of land in the CMA (section 30(1)(d)(v)) and the establishment, implementation and review of objectives, policies and methods for maintaining indigenous biological diversity (section 30(1)(ga)).

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

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

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

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

Both of these Acts support Environment Canterbury's biosecurity activities, particularly through Environment Canterbury'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 and 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/fish.

(a) 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.

(b) The Wildlife Act 1953 (WL Act) controls and protects wildlife not subject to the WAC Act. It identifies which wildlife are not protected (eg, mustelids, possums, wallabies, rooks, feral cats), which are to be game (eg, mallard ducks, black swan), and which are partially protected or are injurious.

(c) 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 Relationship with other plans and regulations

2.3.1 Pest management plans

The Plan must not be inconsistent with:

(a) any other pest management plans on the same organism; or

(b) any pathway management plan.

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, West Coast and Marlborough councils' current regional pest management strategies are not included in this Plan, however the test is in relation to any other pest management plan on the same organism. So if the organism is not in the Plan, then there is no inconsistency.

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.

2.3.2 Resource Management Act plans

The Plan must not be inconsistent with the Canterbury Regional Policy Statement (RPS) or any regional plan developed in accordance with the RMA. The RPS and the Canterbury Land and Water Regional Plan (LWRP) both signal that Environment Canterbury will address pest management issues through a regional pest management plan developed under the Act. There is no inconsistency between the Plan and the RPS or the LWRP.

2.3.3 Regulations

There are no known inconsistencies with any regulations.

2.3.4 Other Canterbury Strategies

Other regional strategies relating to biodiversity and water management contain pest management objectives that are complementary to the Plan. These include the Canterbury Biodiversity Strategy[4] and the Canterbury Water Management Strategy.

2.4 Relationship with Māori

Under the Act, regional pest management plans must provide for the protection of the relationship between Māori and their ancestral lands, waters, sites, wāhi tapu, and taonga, and to protect those 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 economic activities and as landowners and/or occupiers.

The LGA requires councils 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

[4] A Biodiversity Strategy for the Canterbury Region 2008

to contribute to decision-making processes, including considering ways to help Māori to contribute. In the case of Canterbury, engagement is with the iwi who has mana whenua – Ngāi Tahu (the 10 Papatipu Rūnanga within Canterbury and Te Rūnanga o Ngāi Tahu). These responsibilities and requirements were met while preparing this plan and will continue after it takes effect. Throughout the process of reviewing the Strategy and developing the Plan, meetings have been held with Te Paiherenga (a technical working group supporting Environment Canterbury and the 10 Papatipu Rūnanga o Ngāi Tahu) and a smaller working party established by Te Paiherenga (refer section 2.5 of this Plan). A number of iwi management plans have been developed by rūnanga, which were reviewed in the development of the Proposal for the Regional Pest Management Plan. The iwi management plans outline particular issues in relation to pest management and biodiversity, and include particular areas or sites of value to rūnanga in relation to mauri and mahinga kai. Using these plans as a basis, ongoing consultation will be maintained during the life of the plan to discuss pest species that are having an impact on sites of value to rūnanga. This may take the form of a joint work programme with both Te Rūnanga and rūnanga.

3. Responsibilities and obligations

3.1 The management agency

Environment Canterbury is the management agency responsible for implementing the Plan.

In addition to implementation methods detailed in the Plan, Environment Canterbury maintains an internal set of operating procedures.

Pest management in Canterbury is a shared responsibility and, while Environment Canterbury 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.

Under section 100B(1) of the Act, Environment Canterbury as the management agency must prepare an operational plan within three months of the commencement date of the Plan; review the operational plan annually, and amend it if needed.

Environment Canterbury will also maintain up-to-date databases and records of complaints, pest levels and densities, and responses from Environment Canterbury and land occupiers.

3.2 Compensation and disposal of receipts

The Plan will not provide for compensation to be paid to any persons meeting their obligations through 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 occupiers (including owners)

Pest management is an individual occupier's responsibility in the first instance because generally 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.

Occupiers must manage pests in accordance with the rules. If they fail to meet the rules' requirements, they may be subject to legal action. For example, some rules specify that a contravention of the rule creates an offence under section 154N(19) of the Act. Occupiers (and other persons) must not sell, propagate, breed or distribute pests.

An authorised person may 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 occupier may choose the methods they will use to control any pests, they must also comply with the requirements under other legislation (for example the RMA and/or the Hazardous Substances and New Organisms Act 1996).

This Plan treats all private land equitably and emphasises the responsibilities and obligations of all occupiers. Environment Canterbury acknowledges the complexity around Māori land which is multiply owned. Where occupiers are unknown, the Māori Land Court or the Registrar of Companies may help to identify and assist in communication with owners.

3.3.2 Crown agencies

Under section 69(5) of the Act, the Crown is liable to meet the obligations or costs that are required to meet 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 where that pest is being controlled.

3.3.3 Territorial Authorities

Ten territorial authorities are wholly or partly contained within the Canterbury region. They are:

Kaikōura District Council;
Hurunui District Council;
Waimakariri District Council;
Christchurch City Council;
Selwyn District Council;
Ashburton District Council;
Timaru District Council;
Mackenzie District Council;
Waimate District Council; and
Waitaki District Council.

Territorial authorities are required to control pests on land that they occupy, in accordance with the rules of the Plan, and to meet the costs of doing so.

3.3.4 Formed road reserves

Formed road reserves include the land on which the formed road lies and the verge area that extends to adjoining property boundaries. Section 6(1) of the Act provides a process for defining land to include roads in order to determine who is responsible for pest management on land adjoining roads under the Plan.

The options for persons responsible for pest management on land adjoining a road include:

(a) the road controlling authority (territorial authorities and, where there is agreement, New Zealand Transport Agency);

(b) the adjacent land occupier;

(c) no obligation on any party (this option is included in the Plan); or

(d) a combination of any of the above.

The management of a plant to prevent it from spreading may not be the same as that required for traffic safety or landscape purposes. The activities of roading authorities and other utility operators may contribute to the establishment or spread of plants. If pest control is undertaken by a roading authority, it is reasonable that this has protection from pests from neighbouring properties. Equally, adjoining occupiers may not see it as their responsibility to address pest problems arising from roading and other utility operations.

In some parts of the region, road controlling authorities are responsible for pest control within road reserves, and in other parts, it is the responsibility of the adjoining land owner. This mixed approach to road reserve pest management is the result of previous reviews of the Strategy and districts seeking local approaches to pest and road reserve management.

Some road controlling authorities have indicated a willingness to take on the responsibility while others prefer existing arrangements to remain that acknowledge the different farming practices as well as general maintenance responsibilities.

The following schedule sets out the arrangement for the responsibility of controlling plant pests on road reserves containing formed roads maintained by the road controlling authorities.

For the purpose of this Plan, where adjoining property owner responsibility is signified in Table 1, land to which the Plan applies includes all or any of the portions of road bounded by—

(a) The boundary of that land abutting that road; and

(b) Lines extended from the end of that portion of boundary to the middle line of the road; and

(c) The middle line of the road connecting those extended lines.

As part of the 10 year review of the CRPMP, Environment Canterbury will consult with Road Controlling Authorities to establish a consistent policy for roadside pest management. Consultation will occur in a timeframe that enables sufficient time to make financial provisions for the changes in policy (should the consistent approach result in all Road Controlling Authorities becoming responsible for road reserve pest management).

Table 1: Responsibility for plant pests on road reserves

Territorial authority area	Adjoining land occupier responsibility	Road controlling authority responsibility
Hurunui District Council	No responsibility	Full responsibility
Christchurch City Council - City wards - Banks Peninsula ward	 No responsibility Full responsibility	 Full responsibility No responsibility
Waitaki District Council	No responsibility	Full responsibility
Timaru District Council	No responsibility	Full responsibility
Waimakariri District Council	Full responsibility	No responsibility
Kaikoura District Council	Full responsibility	No responsibility
Mackenzie District Council	Full responsibility	No responsibility
Selwyn District Council	Full responsibility	No responsibility
Waimate District Council	Full responsibility	No responsibility
Ashburton District Council	Full responsibility	No responsibility
State Highways	No responsibility	Full responsibility

Note: The above table refers to road reserves containing formed roads maintained by the road controlling authorities. Land in road reserves containing unformed roads is the responsibility of the adjoining land occupier.

3.3.5 Rail

For the purposes of the Act, KiwiRail is treated separately to the Crown, and comes within the definition of an 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 occupiers. KiwiRail and Environment Canterbury will work by agreement to manage mutual obligations and expectations.

Part Two Pest management

4 Organism declarations

4.1 Organisms declared as pests

The organisms listed in Table 2 are specified as a pest in the Plan. The table also indicates which primary management programme will apply to the pest (see section 5.2 for a full description of the five programmes) and if a Good Neighbour Rule (GNR) applies. GNRs have been added to control boundary issues on Crown land, see section 5.4 for more information on this type of rule. A page reference is provided to guide readers to the detailed particulars for each pest.

Attention is also drawn to the **statutory obligations** of any person under sections 52 and 53 of the Act. Those sections prevent any person from selling, propagating or distributing any pest, or part of a pest, covered by the Plan. Non-compliance, in whole or part, with those sections is an offence under section 154O(1) of the Act, and may result in the penalties prescribed in section 157(1) of the Act.

Table 2: Organisms classified as pests

Common name	Scientific Name	Primary programme	GNR	Page
African feather grass*	*Pennisetum macrourum*	Progressive Containment		**40**
African love grass*	*Eragrostis curvula*	Progressive Containment		**40**
Australian sedge	*Carex longebrachiata*	Exclusion		**29**
Baccharis*	*Baccharis halimifolia*	Progressive Containment		**40**
Banana passionfruit*	*Passiflora tripartita var mollissima* *P. tripartita var azuayansis* *P. tarminiana* *P. pinnatistipula* *Passiflora x rosea* *P. caerulea*	Site-led		**71**
Bell heather*	*Erica cinerea*	Sustained Control		**43**
Bennett's wallaby*[2]	*Macropus rufogriseus rufogriseus*	Sustained Control	Yes	**44**
Boneseed*	*Chrysanthemoides monilifera*	Sustained Control		**46**
Broom - common - montpellier - Spanish - white	 *Cytisus scoparius* *Teline monspessulana* *Spartium junceum* *Cytisus multiflorus*	Sustained Control[1]	Yes	**47**
Broomsedge	*Andropogon virginicus*	Exclusion		**29**
Bur daisy	*Calotis lappulacea*	Sustained Control		**49**
Cathedral bells*	*Cobaea scandens*	Site-led		**71**
Chilean needle grass*	*Nassella neesiana*	Sustained Control		**50**
Coltsfoot*	*Tussilago farfara*	Sustained Control		**52**
Contorta (lodgepole) pine*	*Pinus contorta*	Progressive Containment	Yes	**40**
Corsican pine	*Pinus nigra*	Progressive Containment	Yes	**40**
Darwin's barberry*	*Berberis darwinii*	Sustained Control		**53**
Egeria*	*Egeria densa*	Eradication		**34**

Common name	Scientific Name	Primary programme	GNR	Page
Entire marshwort*	*Nymphoides geminata*	Eradication		**34**
Feral goat[3]	*Capra aegagrus hircus*	Site-led		**72**
Feral rabbit	*Oryctolagus cuniculus*	Sustained Control	Yes	**54**
Gorse	*Ulex europaeus*	Sustained Control[1]	Yes	**56**
Hornwort*	*Ceratophyllum demersum*	Exclusion		**29**
Kangaroo grass	*Themeda triandra*	Exclusion		**29**
Knotweed* (Asiatic and Giant)	*Fallopia japonica x sachalinensis* *Fallopia sachalinensis*	Eradication		**34**
Koi carp*	*Cyprinus carpio*	Exclusion		**29**
Lagarosiphon*	*Lagarosiphon major*	Site-led		**71**
Larch (excl. sterile hybrids)	*Larix decidua*	Progressive Containment	Yes	**40**
Moth plant*	*Araujia hortorum*	Eradication		**34**
Mountain pine and dwarf mountain pine	*Pinus uncinata* *Pinus mugo*	Progressive Containment	Yes	**40**
Nassella tussock*	*Nassella trichotoma*	Sustained Control	Yes	**58**
Noogoora bur	*Xanthium strumarium*	Exclusion		**29**
Nutgrass (purple nutsedge)	*Cyperus rotundus*	Exclusion		**29**
Old man's beard*	*Clematis vitalba*	Sustained Control[1]	Yes	**59**
Oxylobium	*Oxylobium lanceolatum*	Exclusion		**29**
Palm grass	*Setaria palmifolia*	Exclusion		**29**
Phragmites*	*Phragmites australis*	Eradication		**34**
Possum	*Trichosurus vulpecula*	Site-led		**68**
Puna grass	*Achnatherum caudatum*	Progressive Containment		**40**
Purple loosestrife*	*Lythrum salicaria*	Sustained Control		**61**
Rook*	*Corvus frugilegus*	Eradication		**34**
Saffron thistle	*Carthamus lanatus*	Sustained Control		**61**
Scots pine	*Pinus sylvestris*	Progressive Containment	Yes	**40**
Spartina	*Spartina alterniflora, S. anglica, S. gracilis, S. maritime, S. × townsendii*	Site-led		**71**
Spiny broom	*Calicotome spinosa*	Exclusion		**29**
White-edged nightshade*	*Solanum marginatum*	Site-led		**71**
Wild thyme	*Thymus vulgaris*	Site-led		**71**
Wilding Conifers[4]		Progressive Containment	Yes	**40**
Wild Russell lupin[5]	*Lupinus polyphyllus*	Sustained Control	Yes	**63**
Woolly nightshade*	*Solanum mauritianum*	Exclusion		**29**
Yellow bristle grass	*Setaria pumila*	Eradication		**34**
Yellow water lily*	*Nuphar lutea*	Eradication		**34**

* Classified as Unwanted Organisms

1 Also included in Site-led programmes

2 Unwanted Organism status expires 20/09/2021

3 Feral goat means any goat that is located within the Containment Area shown in Map 14 in Appendix 4 that is not effectively constrained.

4 Wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in Table 4, established by natural means, unless it is located within a forest plantation, and does not create any greater risk of wilding conifer spread to adjacent or nearby land, other than the forest plantation that it is a part of.

[5] Wild Russell lupin are Russell lupins that are established by natural means.

Table 3: Introduced conifer trees

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

4.2 Pest agents

There are some organisms specified as pest agents in the Plan. These are distinct from other organisms which are classified 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 in the Plan pertaining to pest agents. However, these organisms do not are not classified as pests and are not subject to statutory obligations in place under the Act (section 52 and section 53) that prevent the sale, propagation and distribution by any person.

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

Table 4: Pest agents

Common name	Scientific name
Domestic goat	*Capra aegagrus hircus*
Pest Agent Conifer	*Any introduced conifer species that is capable of helping the spread of wilding conifers and is not otherwise specified as a pest in the CRPMP and is not located within a plantation forest[5].*
Russell lupin	*Lupinus polypyllus*

4.3 Other organisms that may be controlled

The organisms specified as pests under the Plan are those that are capable of causing 'adverse effects of harmful organisms on economic wellbeing, the environment, human health, enjoyment of the natural environment, and the relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu, and taonga'[6].

[5] See Appendix 1 Glossary of Terms for definitions of planation forest and forest species.
[6] Section 54(a) of the Act

Section 70(2)(d) of the Act also provides for the specification of '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. 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' **(OoI)** category is considered prudent.

OoIs are not accorded pest status but future control of them could arise, for example through Site-led programmes. A review of the Plan may be necessary to include them as pests.

Appendix 2 lists those organisms included in the category of 'Organisms of Interest'.

4.4 Unwanted Organisms

A number of species have been declared nationally as Unwanted Organisms. Some of those organisms are subject to national action under the National Interest Pest Response (NIPR) programme managed by Ministry for Primary Industries (MPI). With the exception of phragmites, none of the other ten species subject to the NIPR are known to be present in Canterbury. Phragmites is included in the Plan (under the exclusion programme) as part of the collective assistance being provided by Environment Canterbury to the NIPR programme.

For the most up-to-date list of Unwanted Organisms, visit the MPI website at https://www.mpi.govt.nz.

The National Pest Plant Accord (NPPA) currently targets 113 plant species all of which 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. The most up-to-date list of Accord species is also available on the MPI website.

Unwanted Organism status means that such an organism is prohibited from sale, propagation and distribution in accordance with sections 52 and sections 53 of the Act. Where this restriction is considered sufficient for their management they are not included as pests in this Plan. However, in the future these organisms may be reconsidered for inclusion, for example under a Site-led programme.

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 Plan. As required by the NPD, the objective for each pest must state:

- the particular adverse effect/s on the matters listed in section 54(a) of the Act that the Plan will address;
- the pest management intermediate outcome that the Plan is seeking to achieve;
- the geographic area to which the outcome applies;
- a description of a place to which the outcome applies (if applicable);
- the criteria for defining the place to which the outcome applies (if applicable);
- 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 of the Plan 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 Plan. 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 will be in the Plan 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 occupiers or other persons may be required to act where Plan rules dictate that:

(a) pests are to be controlled;

(b) management plans are to be prepared and submitted;

(c) the presence of pests 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 (eg, machinery, gravel, animals).

2. Council inspection

Inspection by Environment Canterbury may include staff:

(a) visiting properties or undertaking 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

Environment Canterbury may deliver the service:

(a) where it is funded to do so by a targeted or general rate;

(b) on a user pays basis;

(c) by providing control tools, including sourcing and distributing biological agents, or provisions (eg, traps, chemicals).

4. Advocacy and education

Environment Canterbury 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 landowners 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 landowners and/or occupiers and other persons to report any pests they find or to control them; or

(g) facilitate or commission research.

5. Collaboration

Environment Canterbury will collaborate with other agencies and land occupier groups, which may include the development of agreements, for the effective management of pests to protect the values of specific sites.

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 occupiers from the effects of the actions or inactions of others where non-regulatory means are inappropriate or do not succeed.

Section 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 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 added to control boundary issues on Crown land where there are also rules controlling the entire property for other land owners (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's 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 GNR's include Bennett's wallaby, feral rabbit, broom, gorse, old man's beard, wild Russell lupin, wilding conifers and nassella tussock.

Some pests do not have specific rules, this is because Environment Canterbury will undertake control operations. These pests are included in the Plan to ensure Environment Canterbury 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 Plan also provides restrictions under sections 52 and 53 of the Biosecurity Act 1993, including, preventing the communication, release, spread, sale and propagation of pests.

5.5 Community engagement

Environment Canterbury works with the community to deliver pest management outcomes. This may include seeking community advice on plan implementation to inform the operational local inspection requirements, information and service delivery needs and identification of new pest issues. Community engagement on site-led initiatives is also another way for the pest objectives to be achieved.

6 Pest descriptions and programmes

Section 6 lists the pests to be managed under the Plan under the programme(s) to which they are assigned, together with the plan's objectives for each pest and the principle measures (including rules) to be used to achieve the objectives (see section 5.3 above)[7].

6.1 Pests to be managed under exclusion programme

The pests listed in Table 5 below are not known to be present in the Canterbury region and preventing their establishment is considered to be of benefit to the region. These pests have the potential to establish in Canterbury 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 warrant the prevention of their establishment in the region.

Where an exclusion pest is found to be present in Canterbury, an incursion response will be undertaken and a management plan will be developed. This includes assessment of response actions and timeframes for the removal/destruction of the pest. Factors determining the feasibility of immediate removal/destruction include the level and distribution of infestation, the ability and options available for control. If a newly detected pest is found to be wide-spread, it may not be feasible to eradicate.

Table 5: Pests included in exclusion programmes

Common name	Scientific name
Australian sedge	*Carex longebrachiata*
Broomsedge	*Andropogon virginicus*
Hornwort	*Ceratophyllum demersum*
Kangaroo grass	*Themeda triandra*
Koi carp	*Cyprinus carpio*
Noogoora bur	*Xanthium strumarium*
Nutgrass (purple nutsedge)	*Cyperus rotundus*
Oxylobium	*Oxylobium lanceolatum*
Palm grass	*Setaria palmifolia*
Spiny broom	*Calicotome spinose*
Woolly nightshade	*Solanum mauritianum*

The characteristics of each of these pests, and adverse effects that they pose, are set out in Table 6 below.

[7] *Where it is stated in the following sections that Environment Canterbury 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 Canterbury's resources to undertake control works on crown or public conservation land when those entities receive funding for control works from other sources.*

Table 6: Characteristics and threats of pests in exclusion programme

Description of pest and adverse effects	
Australian sedge is a large, deep-rooted, robust sedge forming dense clumps up to 90 centimetres high with drooping stems. The leaves are blue-green, y-shaped, sharp and broad (3-5 millimetres wide) and the plant has drooping panicles and long-stalked pendant spikes. The seed is heavy. It forms dense infestations in pastoral habitats reducing productivity, is unpalatable to stock and excludes native grasses. Australian sedge adversely impacts economic wellbeing and the environment.	 nzflora
Broomsedge is an erect perennial clumping grass <1 metre high. Stems are flattened, sheaths have long hairs. It has narrow, green or bluish green leaves, distinct keels and hairs at base. Flower heads are long and thin and bear hairy seeds. It forms dense stands in disturbed or open sites and displaces other more desirable species, therefore this organism adversely affects economic well-being and the environment.	 Environment Canterbury
Hornwort is a submerged, free-floating or lightly anchored perennial that grows in water up to 16 metres deep. Its stems (30-150 centimetres long) are floating or submerged, branched, stiff and brittle. Thin dark green leaves (1-4 centimetres long) in whorls of 7-12 are densely crowded at the stem tip, increasingly spaced down the stem, and equally forked once or twice into stiff tapering segments with teeth on the outer edge. It produces minute green or white flowers, but is not known to fruit in New Zealand. New plants can form from each piece of the easily broken stems. It rapidly invades water of varying clarity, temperature, light and nutrient level. Its dense growth habit crowds out native species, can block waterways, and rotting vegetation stagnates water, killing fauna and flora. This plant threatens most submerged plant communities, adversely affecting the environment and recreational values.	 Environment Canterbury
Kangaroo grass is a large, stiff, reddish haired perennial grass. Its leaf sheath is light greenish brown to reddish tinged and its 2 millimetres blade is folded to flat. The panicle is 15–35 centimetres in length bearing spikelets in 2–4 clusters. It is an invasive species, which will form dense patches and can exclude preferred pasture species as well as other herbaceous species. It matures rapidly and becomes unpalatable to stock. Kangaroo grass adversely impacts production and economic well-being.	 Kerry Ford Landcare Research

Description of pest and adverse effects	
Koi carp superficially resemble goldfish except that they grow to larger sizes (in New Zealand up to 10 kilograms and 75 centimetres long) and have two pairs of whisker-like feelers (barbels) at the corners of their mouth. They are highly variable in colour, often accompanied with irregular blotching of black, red, gold, orange or pearly white. They stir up and muddy the water when feeding and destroy native plant and fish habitat. Koi carp are opportunistic omnivores: they eat a wide range of food, including insects, fish eggs, juvenile fish of other species and a diverse range of plants and other organic matter. Koi carp cause habitat loss for plants, native fish, invertebrates and waterfowl, causing adverse effects to conservation values.	 Department of Conservation
Noogoora bur is an annual herb, either single stemmed and tall (up to 2.5 metres) or very branched and spreading depending on competition. Its leaves are dark green, sometimes mottled purple and similar in shape to grape leaves. The stems have short coarse hairs. Flowers are inconspicuous and the fruit are woody burs covered in hooked spines. Each bur contains two seeds and each plant can produce many hundreds of burs. Burs have air pockets around the spines which allow them to float. This plant is highly competitive, causes significant losses in many crops and displaces pasture species. The seeds are poisonous to stock, particularly pigs and cattle and the burs easily contaminate sheep's wool and reduce fleece quality. Plants carry fungal diseases capable of infecting horticultural plants. Noogoora bur adversely impacts production and economic well-being.	 Waikato Regional Council
Nutgrass (purple nutsedge) is an erect perennial rush less than 50 centimetres tall, extensive root system of rhizomes, tubers and bulbs. It has dark green, grass-like leaves with a prominent vein on underside. Reddish to purple-brown flower head on upright, 3-sided stem. Its rhizomes are highly penetrative and it forms very dense colonies that smother other plants, adversely impacting production and economic well-being.	 Auckland Council
Oxylobium is a tall, silvery, evergreen shrub with oval upright leaves on stems covered with silky hair. It has conspicuous orange-yellow flower spikes with reddish markings. The seed pod is half-moon shaped. It forms dense colonies, often displacing other species and adversely impacting conservation values.	 Auckland Council

Description of pest and adverse effects	
Palm grass is a large, tufted, long-lived grass usually growing up to 1.5 metres tall. Its upright flowering stems are covered in hairs, particularly near their joints. The large elongated leaf blades (40-80 centimetres long and 3-12 centimetres wide) are palm-like with a pleated appearance. Flower spikelets are arranged in large branched clusters (20-50 centimetres long) that may be stiff or slightly drooping in nature. The grass is robust and spreads via rhizome and seed banks, forming monotypic stands. Forming a total ground cover, it prevents growth of other species and impacts economic well-being and the environment.	 Wikipedia
Spiny broom is a much-branched spiny shrub less than 3 metres tall. It has ridged stems with sharp spines. Dark or grey-green leaves, 3 leaflets hairy underneath and may occur in clusters. Bright yellow flowers followed by flattened seedpods. It is an invasive plant that is capable of rapidly colonizing and displacing pasture species or disrupting and adversely impacting indigenous ecosystems.	 Auckland Council
Woolly nightshade is a spreading, capsicum-smelling shrub or small tree up to 10 metres tall with all parts covered in dusty hairs, and whitish, branching, soft-woody stems. Velvety, oval, grey green leaves (10-35 by 3-15 centimetres) are whitish underneath with prominent 'ears' (25 millimetres) at the base which clasp the stem. Dense clusters of mauve to purple flowers (15-20 millimetre diameter) with yellow anthers followed by clusters of round berries (1 centimetre diameter) that ripen from hard green to soft, dull yellow. It forms dense, often pure stands. Inhibits (allopathic) or prevents establishment of native plant seedlings, and slows regeneration rate of native forests.	 Weedbusters.org.nz

The management aims, and methods to be used to accomplish those aims for the pests to be excluded, are set out in Table 7 below.

Table 7: Aims and means of achievement for exclusion programme

Objective, Principal Measures and Rules	
Plan Objective 1 Over the duration of the Plan, preclude the establishment of any pests listed in Table 5 within the Canterbury region to prevent adverse effects on economic well-being and environmental values[8].	**Principal measures to be used** **Council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used by Environment Canterbury to achieve Plan Objective 1

[8] For a definition see glossary

Advice Note

There are no plan rules for pests to be managed under an exclusion programme. However, sections 52 and 53 of the Biosecurity Act 1993, prevent the communication, release, spread, sale and propagation of pests.

6.2 Pests to be managed under eradication programme

There are a number of pests in the Canterbury region where the infestation levels are low enough to make eradication possible within the proposed 20-year duration of the Plan. These pests are listed in Table 8 below.

Table 8: Pests included in eradication programme

Common name	Scientific name
Egeria	*Egeria densa*
Entire marshwort	*Nymphoides geminata*
Knotweed (Asiatic and Giant)	*Fallopia japonica x sachalinensis* *Fallopia sachalinensis*
Moth plant	*Araujia hortorum*
Phragmites	*Phragmites australis*
Rook	*Corvus frugilegus*
Yellow bristle grass	*Setaria pumila*
Yellow water lily	*Nuphar lutea*

The characteristics of each pest to be managed through the eradication programme, and the adverse impacts they cause, are set out in Table 9 below. These pests have adverse effects on both production and environmental values and warrant the removal of these pests from the region.

Table 9: Characteristics and threats of pests in eradication programme

Description of pest and adverse effects	
Egeria is a slender, brittle aquatic plant with much-branched, buoyant stems (3 millimetre diameter). Its linear, dark green leaves (15-30 by 4 millimetres) are in whorls of 4-6 (occasionally 3 near base). From November to January it produces white flowers (20 millimetre diameter) that are 3-petalled with yellow stamens, and that sit on the surface of the water. As only male plants are found in New Zealand, no seed is set. It grows in most still or slow-moving, highly lit submerged sites, and tolerates a wide range of temperatures. The only known site in Canterbury is at Kerrs Reach, a part of the Avon River in Christchurch. It is capable of forming vast underwater 'meadows', shades out smaller native species, and prevents seedlings of native species establishing. Large clumps can dislodge from the underwater meadows, causing flooding. Rotting vegetation stagnates water, killing fauna and flora. Egeria has adverse effects on environmental values. It is included in the Plan because of its impacts on other species and the potential to cause flooding.	 Environment Canterbury

Description of pest and adverse effects	
Entire marshwort is a perennial aquatic plant with floating, bright green, heart-shaped leaves (up to 10 centimetres across, and slightly longer than wide) with often pinkish undersides and stems (stolons) that are long and branched, and float just below the water surface. Leaves, roots and flowers grow in clusters from nodes along the stem. Roots are suspended in deeper water. Flowers (25-35 millimetres wide) with five bright yellow petals with fringed wing margins are produced from November to April, held above the water on long (7 centimetres) stalks, with each stalk bearing about 2-7 flowers. Seeds have not been observed in NZ. It is limited to one active site in Mid Canterbury. It grows rapidly, forming dense floating mats of foliage that fill waterways. Rapidly colonises shallow water, forming dense mats impeding drainage and shading out other aquatic plants, blocking access to water and interfering with recreational activities. It is also able to invade land in an adapted growth form. It causes adverse effects to waterways and impacts conservation and environmental values.	 Environment Canterbury
Knotweed is a multi-stemmed, thicket-forming, rhizomatous perennial shrub. Asiatic knotweed ranges in height from 1-2 metres tall and has ovalish, pointed leaves (8-23 by 5-17 centimetres). Giant knotweed is taller (2-4 metres) with larger heart-shaped leaves (15–40 by 10–28 centimetres). Knotweed has small white flowers (less than 2.5 millimetres long) in densely-hairy, branched hanging clusters (less than 6 centimetres long) which appear from December to April. The extent of knotweed is limited to six sites in the Canterbury region. It is capable of excluding other species and prevents native seedlings establishing. Knotweeds tolerate wet to moderately dry conditions and warm to cold temperatures, but is intolerant of shade. Shrublands and waterways are vulnerable to knotweed invasion. Knotweed adversely impacts amenity and conservation values in riparian margins and other disturbed areas.	 Asiatic Knotweed MPI  Giant Knotweed M von Kippelskirch
Moth plant is a perennial, broad-leaved, herbaceous climber and can grow to over 5 metres tall. It has almost-oblong leaves measuring 3-11 centimetres, flowers profusely but fruit set is low. The choko-like fruits, as big as a fist, contain about 400 parachute-like seeds, and mature fruits normally remains for long periods on the vine. There are eight sites in the region encompassing a total of one hectare. Moth plant climbs over shrubs and small trees, smothering and breaking them down. It also spreads over the ground, smothering native plants of small stature and regenerating seedlings. Both fruits and stems exude a caustic milky sap when broken. This white latex is sticky, causes skin	 Landcare Research

Description of pest and adverse effects	
irritation in susceptible people and is poisonous to humans. Moth plant can adversely impact environmental and conservation values.	
Phragmites is a robust, perennial, rhizomatous grass, with wide leaves borne on a stout, reed-like stem. It is generally an aquatic plant found on the margins of still or slowly flowing waterbodies. It can grow in water depths of 2 metres, but is generally found in shallower water. It may also form floating mats that can completely cover small waterbodies. It reproduces largely by rhizomes or through fragments that break off and relocate. There are 10 sites in the region encompassing an area of 1.1 hectares. The plant has a high degree of adaptability, competitive ability, obstructive qualities, potential to invade native vegetation and is difficult to manage. Phragmites is considered to cause serious adverse effects on environmental and conservation values.	 Landcare Research
Rooks are large, glossy, purplish-black birds and members of the crow family. The rook has a prominent, powerful bill and whitish patches of skin show around the base of its pale beak. Larger than a magpie, it weighs around 400 grams and is 45 centimetres long. Rooks announce their presence with a distinctive 'kaah', and as they fly they 'caw' to keep in contact with each other. The rook is a highly gregarious bird species, foraging daily from either rookeries or communal winter roosts. During breeding (August-January), all birds live in rookeries, often the same sites used in previous breeding seasons. The males who forage for the family group make numerous individual forays, averaging less than 1 kilometre, to communal feeding grounds. At other times of the year, birds spend each night in communal roosts. Feeding forays at such times range up to 20 kilometres. Rooks show a strong preference for foraging in fields of cereals at all stages of the crop, in recently cultivated land, and in stands of walnut trees. Feeding ranges are influenced by the occurrence of highly preferred foods, with extensive flights being made to walnut trees and to recently tilled fields. Large flocks of rooks can severely damage or destroy newly emerging crops or pasture. Rooks can adversely impact production and economic well-being. For this reason they are included in the Plan. There are thought to be only three male birds remaining in Canterbury. Successful control has been achieved through a co-ordinated approach involving the use of restricted poisons such as 3-chloro-p-toluidine hydrochloride (DRC 1339) as well as favourable weather conditions, and limited food sources. These conditions may not occur every year, hence effective control cannot be guaranteed every year. Unsuccessful control can lead to rooks becoming wary and	 Environment Canterbury

Description of pest and adverse effects	
much more difficult to control. Rookeries can fragment and new rookeries establish.	
Yellow bristlegrass is an annual, upright growing grass 25-45 centimetres tall. In open pasture its first leaves often grow parallel to the ground. Leaves are hairless, twisted and slightly rough at the edges, and yellow-green to green in colour. The leaf sheath is flattened and hairless and often turns reddish purple. Its seed head is a cylindrical 'spike', 2.5-10 centimetres long, with many densely packed spikelets. Each spikelet is surrounded by five to ten bristles, 5-8 millimetres long which are green initially but later turn golden-brown. There are two known sites in Canterbury encompassing 0.01 hectares. This plant hardens off in autumn resulting in lower pasture quality, a problem particularly for milk and stock finishing producers. This represents an adverse impact on production and economic well-being.	 AgPest   Dairy NZ
Yellow water lily is an aquatic plant growing from large, long, spongy rhizomes (up to 10 centimetres thick), with large (up to 40 centimetres by 30 centimetres), oval, heart-shaped, waxy, floating leaves and thin, lettuce-like submerged leaves. The golden yellow, alcohol-smelling, 6-petalled, buttercup-like flower (up to 6 centimetres across) held above the water on a stalk, is smaller than flowers of other waterlilies. Its green, flask-shaped fruit (2-3 centimetres long) splits open to release seeds. Seeds and stem fragments are carried by water, boats, fishing gear or machinery. It grows in still or slow-flowing water less than 2 metres deep and rapidly becomes a dense mat. This can lead to flow impediment, shading out of other plants, reduced nutrient availability and habitat loss for other organisms. Yellow water lily extends over one six-hectare site in the region. This plant causes adverse impacts to environmental and recreational values.	 Environment Canterbury  Environment Canterbury

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.

Table 10: Aims and means of achievement for eradication programme

Objective, Principal Measures and Rules	
Plan Objective 2 Within 10 years of the commencement of the Plan, reduce all infestations of pests listed in Table 8 to zero levels within the Canterbury region to prevent adverse effects on economic well-being and the environment.	**Principal measures to be used** Environment Canterbury will take responsibility for undertaking the eradication programmes. The **requirement to act, council inspection, service delivery, advocacy and education**

	described in section 5.3 of the Plan will be used to achieve Plan Objective 2.
Plan Rule 6.2.1 Other than under the instruction or supervision of an authorised person, no person shall: (a) poison, capture or trap any rook; or (b) discharge any firearm at any rook; or (c) discharge any firearm at or within 500 metres of any tree containing a rookery; or (d) damage, disturb or interfere in any way with a rookery. A breach of this rule or any part thereof creates an offence under section 154N(19) of the Act.	**Explanation to rule** The purpose of this rule is to prevent humans hindering the control of rooks. The birds are wary and require a settled environment for sucessful control. They are also easily dispersed.
Advice Note Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Biosecurity Act 1993.	

6.3 Pests to be managed under progressive containment programme

There are a number of pests that are well established in the Canterbury region but their present infestation levels are still low enough for those levels to be reduced region-wide through the progressive containment programme. In some cases it will result in fewer sites infested or in others the overall density of the pest will reduce over the 20-year duration period of the Plan. These pests are listed in Table 11 below.

Table 11 Pests included in progressive containment programme

Common name	Scientific name
African feather grass	*Pennisetum macrourum*
African love grass	*Eragrostis curvula*
Baccharis	*Baccharis halimifolia*
Puna grass	*Achnatherum caudatum*
Wilding conifers, contorta, Corsican, Scots, mountain and dwarf mountain pines and larch	*Wilding conifers+, Pinus contorta, P. nigra, P. sylvestris, P, uncinata, P, mugo and Larix decidua.*

+ see pages 20 and 21 for definition

The characteristics of each pest under the progressive containment programme, and adverse effects that they pose, are set out in Table 12 below.

Wilding conifers and the named pest conifers are readily identified but their current infestations within the Wilding Conifer Containment Area shown on Map 1 in Appendix 4 fall under several categories. There are areas of production forests, erosion control plantings, shelter belts, amenity placings and swathes of naturally occurring wilding establishments. This Plan continues to build on the collaborative approach taken under the previous Strategy and supports the intent of the National Wilding Conifer Management Strategy 2015-2030 (Right tree in the right place at wildingconifer@mpi.govt.nz).

The Plan focusses on priority management areas within the Wilding Conifer Containment Area, with the goal of securing clearance of wilding conifers and the named pest conifers within those areas over the first 10 years of the Plan.

Environment Canterbury will also seek to engage with land occupiers to raise awareness about the wilding conifer spread risk from some conifer species used in shelterbelts and other smaller plantings, and in high spread risk areas and areas subject to wilding conifer control, and support and encourage the removal of small, spread-prone conifer plantings.

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

Description of pest and adverse effects	
African feather grass is a tussock-like grass forming dense clumps up to 2 metres tall. The leaves are whitish green on top, distinctively ribbed, and dark green in colour underneath. The leaf edges feel rough when touched. The leaf sheath (below where the leaf joins onto the main stem of the plant) is covered in hairs. African feather grass produces fibrous roots and also produces rhizomes (thick underground stems that will form new shoots). It flowers from December to April. The flowers form a long narrow spike, straw yellow in colour, and sometimes have a purplish tinge. The seeds have bristles which allow them to become easily attached to clothing, animal hair or wool.	 Envrionement Canterbury

Description of pest and adverse effects	
African feather grass is known to infest 132 hectares across 113 properties in the Canterbury region. It is less frequent south of the Rangitata River. Its extensive root system makes it a difficult to remove. It produces large amount of seeds which are easily dispersed by wind and can be carried on clothing. The plant can spread quickly, crowding out other low growing plant species. It can adversely impact environmental values in wetlands, waterbodies, coastal areas and tussock landscapes. It can also adversely impact production and economic values.	
African love grass is a vigorous, clump-forming, perennial grass up to 1.5 metres tall. It is densely tufted with narrow leaves (harsh to touch) and usually curly at the tips. The leaves are bright green to blue-green (leaves turn bronze-red after a hard frost). Leaf margins rolled inwards and are usually hairless. It has fibrous roots, up to 50 centimetres deep. The flower heads (panicles) are pyramid- shaped with small, white flowers. Its blackish, olive-purple seeds are attached to arching stems over 1 metres long. Infestations are limited to three active sites across 107 hectares in the Canterbury region. The plant is capable of rapidly invading bare and disturbed sites. Once established it forms dense stands and suppresses other herbaceous species. It is a prolific seeder and has low palatability for grazing animals. It can adversely impact both economic well-being and environmental values.	 Environment Canterbury
Baccharis is an evergreen, multi-branched shrub that can grow up to 4 metres tall. The oblong leaves are small and the leaf edges are toothed, predominantly above the middle of the leaf. Small, cream flowers are produced from February to May and cotton-like seed heads follow flowering. It occurs on 3.5 hectares of the Port Hills. This plant readily establishes on open, dry hillsides and rocky crevices from wind-dispersed seed. It has the capability of displacing other plants and forming very dense barriers to stock. Baccharis can cause impacts to both economic values due to reduced pasture quality and environmental values due to displacement of native grasses.	 Environment Canterbury

Description of pest and adverse effects	
Puna grass is tussock-like and has flat or rolled leaves, 50 centimetres long by 3 millimetres wide, with obvious ribs on the top and bottom, and fine prickles on top. The leaf margins have 1.5 millimetres straggling hairs and prickle teeth. Flowers are purplish-brown with 1-2 centimetres long bristles at the tips (similar to nassella tussock) borne on flower spikes up to 1m tall. It has a fibrous root system. It is scattered across 60 hectares at two sites within the region. Puna grass is a pastoral weed and invades riparian and other non-grazed areas. It is not particularly palatable to stock, is spread by seed and is difficult to control once established. Puna grass causes adverse effects to economic well-being due to loss of pastoral agriculture in the hill and high country. It also causes adverse effects on environmental values in tussock landscapes and grasslands.	 Environment Canterbury
Wilding conifers (refer Map 1 in Appendix 4) can have significant impacts on native ecosystems, particularly those with low-stature vegetation[9]. 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 can consequently spread into shrublands, regenerating native forest and mature forest where there are canopy gaps and a relatively sparse understory. Wilding conifers can adversely affect amenity and landscape values, particularly where the valued landscapes are characterised by extensive low-stature vegetation such as high country tussock grasslands. 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 Ngāi Tahu values in some locations through: physical changes to	 Mixed wilding conifers Environment Canterbury  Contorta pine (John Smith-Dodsworth NZPCN)  Corsican pine (Jon Sullivan)

[9] 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 of pest and adverse effects	
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 adversely impact economic well-being by reducing available grazing land and limiting future land use options due to the high costs of control. **Contorta (lodgepole) pine, Corsican pine, Scots pine, dwarf mountain pine, mountain pine and larch** In addition to the adverse effects list above for the wilding offspring of these conifers, wilding conifers often occur as a result of seed spread from planted conifer trees. 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. This set of conifers has very limited commercial value and they are also highly invasive. It is therefore appropriate to specify these organisms as pests in their own right, in addition to being pests under the wilding conifer definition in their naturally regenerated state. It would effectively prevent new plantings of these species, as well as potentially enabling regulatory control requiring removal of these species in situations where they are planted but pose a wilding conifer spread risk. Contorta in particular, is the most invasive introduced conifer species and represents a significant proportion of all wilding conifers and original sources of wilding conifer spread.	 Scots pine (Wikipedia)  Mountain pine (enciclopedia.cat)  Dwarf mountain pine (conifersaroundtheworld.com)  Larch (Wikipedia)

The management aims and the range of methods to be used to accomplish those aims for the pests to be progressively controlled are set out in Table 13 below.

Table 13: Aims and means of achievement for progressive containment programmes

Objective, Principal Measures and Rules	
Plan Objective 3 Over the duration of the Plan, progressively contain and reduce the geographic distribution or extent of African feather grass, African love grass, Baccharis and Puna grass within the Canterbury region to prevent adverse effects on economic well-being and the environment. Within the Canterbury region, the extent of African feather grass, African love grass, baccharis and puna grass will each be reduced by 10% within 10 years of the commencement of the Plan. **Plan Objective 4** Over the duration of the Plan, progressively contain by reducing the geographic distribution and extent of wilding conifers[10], contorta, Corsican, Scots, mountain and dwarf mountain pines and larch within the Canterbury region to reduce adverse effects on economic well-being and the environment. Within the Wilding Conifer Containment Area shown on Map 1 in Appendix 4, 900,000 hectares of land will be cleared of wilding conifers within 10 years of the commencement of the Plan. This may involve the destruction of contorta, Corsican, Scots, mountain and dwarf mountain pines and larch.	**Principal measures to be used** Environment Canterbury will take responsibility for undertaking the progressive containment programmes. **Requirement to act, Council inspection, service delivery, advocacy and education, and collaboration** described in section 5.3 of the Plan will be used to achieve Plan Objective 3 and 4. Objective 4 is also achieved by The National Wilding Conifer Control Programme – a collaborative funding model for wilding conifer control. Significant funding from Ministry of Primary Industries, Department of Conservation, Land Information New Zealand, Environment Canterbury and private land holders was committed in 2016 to progressively contain and reduce wilding conifers in Canterbury.
Plan Rule 6.3.1 Within the Wilding Conifer Containment Area shown on Map 1 in Appendix 4, occupiers shall destroy all wilding conifers, contorta, Corsican, Scots, mountain and dwarf mountain pines and/or larch present on land they occupy prior to cone bearing, if – (a) The wilding conifers, contorta, Corsican, Scots, mountain and dwarf mountain pines and/or larch are located within an area which has had control operations carried out to destroy wilding conifers, contorta, Corsican, Scots, mountain and dwarf mountain pines, larch and/or other planted conifer species; and (b) The control operations were publicly funded (either in full or in part).	**Explanation of rule** Over the duration of the Plan, to ensure that new infestations of wilding conifers are prevented at sites where wilding conifers contorta, Corsican, Scots, mountain and dwarf mountain pines, larch and/or any other planted conifer species have previously been destroyed through publicly funded control operations.

[10] Wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in Table 4, established by natural means, unless it is located within a forest plantation, and does not create any greater risk of wilding conifer spread to adjacent or nearby land, other than the forest plantation that it is a part of.

Objective, Principal Measures and Rules	
A breach of this rule creates an offence under section 154N(19) of the Act.	
Plan Rule 6.3.2 Within the Wilding Conifer Containment Area shown on Map 1 in Appendix 4, occupiers shall, on receipt of written direction from an Authorised Person, destroy all wilding conifers, contorta, Corsican, Scots, mountain and dwarf mountain pines and larch present on land they occupy within 200 metres of an adjoining property boundary prior to cone bearing, if wilding conifers, contorta, Corsican, Scots, mountain or dwarf mountain pines and/or larch have previously been destroyed through control operations on the adjoining property, within 200 metres of the boundary, since 1 July 2016. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** Over the duration of the Plan, to ensure that the spread of wilding conifers does not cause unreasonable costs to the occupiers of adjoining properties, where wilding conifers, contorta, Corsican, Scots, mountain and dwarf mountain pines and/or larch have previously been destroyed through control operations on the adjoining property.
Plan Rule 6.3.3 **Note: This is designated as a Good Neighbour Rule** Within the Wilding Conifer Containment Area shown on Map 1 in Appendix 4, occupiers shall, on receipt of written direction from an Authorised Person, destroy all wilding conifers, contorta, Corsican, Scots, mountain and dwarf mountain pines and larch present on land they occupy within 200 metres of an adjoining property boundary prior to cone bearing where they have previously been cleared through control operations and that occupier is taking reasonable steps to manage wilding conifers on their land, within 200 metres of the boundary, since 1 July 2016. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** Over the duration of the Plan, to ensure that the spread of wilding conifers does not cause unreasonable costs to the occupiers of adjoining properties, where wilding conifers, contorta, Corsican, Scots, mountain and dwarf mountain pines and/or larch have previously been destroyed through control operations on the adjoining property and the adjoining occupier is undertaking active wilding conifer management. The rule is required in addition to Plan Rule 6.3.2 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 occupier is taking reasonable measures to manage the pest or its impacts.
Plan Rule 6.3.4 **Note: This is a pest agent rule** Within the Wilding Conifer Containment Area shown on Map 1 in Appendix 4, 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 metres of an adjoining property boundary, if: (a) wilding conifers, contorta, Corsican, Scots, mountain or dwarf mountain pines, larch and/or other planted conifer species have been destroyed through control operations on the adjoining property, within 200	**Explanation of rule** Introduced conifer trees that are capable of helping the spread of wilding conifers present a risk for wilding conifer management. This rule is to ensure that over the duration of the Plan, new infestations, or reinfestation of wilding conifers are prevented at sites where wilding conifers, contorta, Corsican, Scots, mountain and dwarf mountain pines, larch and or other planted conifer species have previously been destroyed through publicly funded control operations.

Objective, Principal Measures and Rules	
metres of the boundary, since 1 July 2016; and (b) the control operations were publicly funded (either in full or in part). A breach of this rule creates an offence under section 154N(19) of the Act. **Pest Agent Conifer** means as any introduced conifer species that is capable of helping the spread of wilding conifers and is not otherwise specified as a pest in the CRPMP and is not located within a plantation forest. **Plantation forest** means a forest deliberately established for commercial purposes, being at least 1 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 metres in height at maturity where it is located.	
Advice Note Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Act. 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. Refer also to section 8.3 of this Plan.	

6.4 Pests to be managed under sustained control programme

A number of pests that are well established in the Canterbury 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 proposed 20-year duration of the Plan. The identified pests are listed in Table 14 below.

Table 14: Pests included in sustained control programme

Common name	Scientific name
Bell heather	*Erica cinerea*
Bennett's wallaby	*Macropus rufogriseus rufogriseus*
Boneseed	*Chrysanthemoides monilifera*
Broom: common, Montpellier, Spanish, white	*Cytisus scoparius, Teline monspessulana, C. multiflorus*
Bur daisy	*Calotis lappulacea*
Chilean needle grass	*Nassella neesiana*
Coltsfoot	*Tussilago farfara*
Darwin's barberry	*Berberis darwinii*
Feral rabbit	*Oryctolagus cuniculus*
Gorse	*Ulex europaeus*
Nassella tussock	*Nassella trichotoma*
Old man's beard	*Clematis vitalba*
Purple loosestrife	*Lythrum salicaria*
Saffron thistle	*Carthamus lanatus*
Wild Russell lupin	*Lupinus polyphyllus*

Including the above pests in this Plan 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 in the sustained control programme, the adverse effect that it poses, the management aims and the methods to achieve those aims are set out in Tables 15 to 29. These pests have adverse impacts on economic well-being, as well as impacts to the environment.

Bell heather

Table 15

Description of pest and adverse effects	
Bell heather is a low growing (up to 30 centimetres), bushy shrub with small needle-like leaves arranged in whorls (groups) of three. It has bell-shaped, mostly purple (sometimes pink or white) flowers (6 millimetres long) growing near the end of the stems. It is confined to one site in the Hunter Hills in South Canterbury and is spread over 375 hectares. This is the only recorded site in the South Island. The plant occupies bare rocky sites and competes successfully with native species such as flax, dracrophylum and snow tussock. The seeds are known to last at least five years in the soil and are dispersed by wind. It has the ability to cause adverse effects to economic well-being due to loss of production from pastoral agriculture in the hill and high country. It can also adversely impact environmental values.	 Environment Canterbury

Objective, Principal Measures and Rules	
Plan Objective 5 Over the duration of the Plan, sustainably control bell heather in the Canterbury Region to ensure its extent does not increase and environmental values are not adversely affected.	**Principal measures to be used** **Council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 5.
Advice Note There are no proposed plan rules in relation to bell heather. However 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.	

Bennett's wallaby

Table 16

Description of pest and adverse effects	
Bennett's wallaby, often called red-necked wallaby, are marsupials that stand up to 80 centimetres with a tail length around 62 centimetres. Males can reach over 20 kilograms in weight with females reaching 14 kilograms. They have a greyish-brown upper body, pale grey chest and belly and reddish-brown (rufous) colour on the shoulders. Their hind feet and tail are black tipped. Solitary in nature, they commence breeding at about 24 months. Wallabies occupy approximately 450,000 hectares of land in South Canterbury, centred in the Hunter Hills, but including the Two Thumb Range, the Kirkleston and the Grampian mountains. Populations also occur in Kakahu Forest near Geraldine and Pioneer Park south-east of Fairlie. 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 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.	 Environment Canterbury
Objective, Principal Measures and Rules	
Plan Objective 6 Over the duration of the Plan:	**Principal measures to be used** **Requirement to act, council inspection, service delivery, advocacy and education**

(i) sustainably control Bennett's wallaby to ensure population densities remain at or below Level 3 on the Guilford Scale[11] within the Wallaby Containment Area (refer Map 2 in Appendix 4) and (ii) preclude the establishment of Bennett's wallaby populations in the Canterbury region outside of the Wallaby Containment Area to minimise or prevent adverse effects to environmental and production values.	described in section 5.3 of the Plan will be used to achieve Plan Objective 6 Generally occupiers will carry out the necessary control work to maintain population levels but Environment Canterbury may facilitate inter-property co-ordinated control approaches under site-led initiatives. Environment Canterbury will carry out all necessary actions to ensure wallaby populations do not establish outside of the Containment Area. This may involve activities to secure a buffer both inside and adjacent to the Containment Area boundaries. Establishment means the confirmed presence in the wild, with a breeding population.
Plan Rule 6.4.1 An occupier within the Wallaby Containment Area shown on Map 2 in Appendix 4 shall control Bennett's wallaby densities on land they occupy to at or below Level 3 on the Guilford Scale. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The reason for this rule is to ensure wallaby population levels remain below the threshold at which economic well-being and biodiversity values are threatened.
Plan Rule 6.4.2 **Note: This is designated a Good Neighbour Rule** An occupier within the Wallaby Containment Area shown on Map 2 in Appendix 4 shall, on receipt of a written direction from an Authorised Person, control Bennett's wallaby densities on land they occupy to at or below Level 3 on the Guilford Scale, within 1 kilometre of the boundary where the occupier of adjacent land is maintaining wallaby densities on land they occupy to at or below Level 3 on the Guilford Scale. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The reason for this rule is to ensure population levels remain below the threshold at which economic well-being and biodiversity values are threatened. The rule is required in addition to Plan Rule 6.4.1 to manage the spread of Bennett's wallaby causing unreasonable costs to an adjacent occupier where active Bennett's wallaby management is being undertaken by that land occupier.
Plan Rule 6.4.3 No person shall keep, hold, enclose or otherwise harbour any Bennett's wallaby in or on any place in the Canterbury region. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The purpose of this rule is to prevent humans actively attempting to establish feral populations outside of the Containment Area and to ensure that efforts to control Bennett's wallaby densities within the Containment Area are not undermined by persons keeping wallabies. Exemptions to the rule will cater for case by case applications to keep wallabies for public benefit, e.g. research, zoos or any other use. It is in the long term interests of the region's inhabitants outside of the Wallaby Containment

[11] Refer Appendix 3 for Guilford Scale

	Area that biodiversity and economic well-being values are protected from the adverse effects brought about by the presence of wallabies.
Plan Rule 6.4.4 Other than under the instruction or supervision of an Authorised Person, no person shall discharge a firearm within or across a property where a control operation involving bait is being planned or undertaken on the property to manage Bennett's wallaby. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The purpose of this rule is to prevent human disturbance of wallaby populations prior to any necessary control operations by Environment Canterbury.
Advice Note Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Biosecurity Act 1993.	

Boneseed

Table 17

Description of pest and adverse effects	
Boneseed is an evergreen shrub reaching up to 3 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. Boneseed gets its name from its hard, bone-coloured seed. This seed has a thin, fleshy cover - initially green but changing to black upon ripening. Up to 50,000 seeds per plant can be produced in one year and can remain viable for up to 10 years. Seed dispersal occurs locally by birds and by water. A tolerance of dry, infertile soils allows boneseed to colonise and establish easily in coastal areas. While thought to be restricted to frost free areas, that may not be the case. Absence of grazing animals also aids its establishment. The majority of infestations occur on the Port Hills of Banks Peninsula, along with other isolated coastal sites between Kaikōura and the Waitaki River. 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.	 Environment Canterbury
Objective, Principal Measures and Rules	
Plan Objective 7 Over the duration of the Plan: (i) ensure the current population levels of boneseed do not increase within the Port	**Principal measures to be used** The **requirement to act, council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 7.

Description of pest and adverse effects	
Hills/Lyttelton Harbour Zone as shown on Map 3 in Appendix 4; and (ii) progressively reduce the densities of boneseed by 10% outside of the Port Hills/Lyttelton Harbour Zone to reduce adverse effects on biodiversity values.	
Advice Notes Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, musts be complied with. These sections should be referred to in full in the Biosecurity Act 1993.	

Broom (common, white, Montpellier and Spanish)

Table 18

Description of pest and adverse effects	
Common broom is a leguminous, branched perennial shrub up to 2.5 metres tall with bright yellow flowers. Stems are green and woody, five ribbed and hairless. New growth has silky hairs on stem margins. Montpellier broom and white broom while somewhat smaller in stature are, except for slightly smaller yellow flowers or red flecked white flowers respectively, very difficult to distinguish from common broom. They are therefore treated as one in association with common broom. Dark ripened seed pods explode during summer propelling hard seed up to five metres from the parent plant. The seed may also land on stock, particularly sheep, or in water and be transported much further. Seed can remain viable for many years in soil and gravel. Transport of such infested material can contribute to spread over longer distances. Broom is a widespread plant scattered across land throughout the region. Density varies from light to heavy depending upon the intensity of grazing management. It is most prevalent on lightly grazed or non-grazed areas. Broom seedlings are unable to compete with productive pasture. Where insufficient grazing pressure is exerted, the plants can establish dense stands that can shade out most other herbaceous species and adversely impact economic well-being by destroying pasture. For this reason it is included in the Plan. Provided taller tree species can become established within broom colonies they will eventually displace broom. Broom adversely impacts wetlands, rocky outcrops and other habitats for animals. There are also site led programmes to control Broom, refer maps 7.1 to 7.4 in Appendix 4.	 Environment Canterbury
Objective, Principal Measures and Rules	
Plan Objective 8	**Principal measures to be used**

Over the duration of the Plan, sustainably control broom to preclude land that is free of, or being cleared of, broom becoming infested, to prevent adverse effects on production values and economic well-being.	The **requirement to act, council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 8. Generally occupiers will carry out the necessary control work to remove broom plants. In addition, Environment Canterbury may facilitate or assist additional community initiative approaches under site-led programmes.
Plan Rule 6.4.5 **Note: This is designated a Good Neighbour Rule** All occupiers within the Canterbury 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 occupier of the adjoining property is eliminating broom infestations within 10 metres of that boundary with the intention of protecting their economic well-being. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed. The provisions of this rule do not apply when broom is present as a hedge on a property boundary provided that the top and sides are trimmed each year after flowering but before seed set to minimise seeding. A hedge is any single row extending horizontally for a minimum continuous length of 50 metres. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The reason for this rule is to manage the spread of broom causing unreasonable costs to an adjacent occupier where active broom management is being undertaken by that land occupier.
Plan Rule 6.4.6 All occupiers within the Hill and High Country Zone as shown on Map 4 in Appendix 4 shall eliminate broom infestations that cover up to 50 square metres in area on the land that they occupy. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed. The provisions of this rule do not apply when broom is present as a hedge on a property boundary provided that the top and sides are trimmed each year after flowering but before seed set to minimise seeding. A hedge is any single row extending horizontally for a minimum continuous length of 50 metres. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The reason for this rule is to maintain the past investment by occupiers in establishing areas clear of broom within properties.

Plan Rule 6.4.7	Explanation of rule
All occupiers within the Hill and High Country Zone as shown on Map 4 in Appendix 4 shall eliminate broom infestations on their land within 10 metres of an adjoining property boundary. The provisions of this rule do not apply when broom is present as a hedge on a property boundary provided that the top and sides are trimmed each year after flowering but before seed set to minimise seeding. A hedge is any single row extending horizontally for a minimum continuous length of 50 metres. A breach of this rule creates an offence under section 154N(19) of the Act.	The reason for this rule is to manage the spread of broom to adjacent occupiers.
Advice Note 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. Refer also to section 8.3 of this Plan.	

Bur daisy

Table 19

Description of pest and adverse effects	
Bur daisy is a small, perennial herb (up to 40 centimetres tall and 1 metre in diameter) with many fine, green branches. Its green, thin (almost linear) leaves are fairly insignificant. The plant produces small, pom pom-like clusters of bright yellow flowers for most of the year, but are most prolific over the summer. Flowers develop into very hard, brown burs, covered in tiny hooks. It is found on 34 active sites scattered across 235 hectares largely in mid and north Canterbury. Bur daisy is a serious threat to pastoral farming, particularly because of wool contamination. Left uncontrolled, bur daisy replaces other plant species. It produces many seeds that are quickly spread by stock movement and remain viable for many years. For these reasons it can cause adverse effects to both economic well-being and environmental values.	 S Brown  K McCoombs
Objective, Principal Measures and Rules	
Plan Objective 9 Over the duration of the Plan, sustainably control bur daisy within the Canterbury region to ensure its extent does not increase and production values on adjacent land are not adversely affected.	**Principal measures to be used** **Council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 9.
Advice Note	

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

Chilean needle grass

Table 20

Description of pest and adverse effects	
Chilean needle grass (CNG) is a tufted perennial plant growing to one metre in the absence of grazing. Its leaves are bright green and harsh to the touch. Identification within grazed pasture is difficult prior to flower emergence in October. The flowers have a purple tinge and ripen into hard, sharp seeds with long twisting tails. These aid the seed in the penetration of the animal's skin and the soil. It also produces viable seeds in its mid and basal stem regions (cleistogenes). Plants will grow into dense stands and exclude other indigenous and exotic grassland species. CNG 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.	 Environment Canterbury
Objective, Principal Measures and Rules	
Plan Objective 10 Over the duration of the Plan, sustainably control Chilean needle grass within the Canterbury region to ensure: (i) that current infestation levels do not increase; and (ii) any spread to other properties is prevented to minimise its adverse impacts on pastoral production values.	**Principal measures to be used** The **requirement to act, council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 10. Generally occupiers will carry out the control work, and manage the likely vector pathways, necessary to prevent Chilean needle grass spreading to other properties. In addition, Environment Canterbury may undertake operational programmes and facilitate or assist community initiative approaches.
Plan Rule 6.4.8 All occupiers within the Canterbury region, with Chilean needle grass (CNG) present on their property shall:	**Explanation of rule** The reason for this rule is to prevent the spread of Chilean needle grass to properties that are free of infestations of Chilean needle grass.

(a) eliminate all CNG plants within 5 metres of an adjoining property boundary; and (b) hold and operate in accordance with a CNG Management Plan For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed. A breach of this rule creates an offence under section 154N(19) of the Act. <u>Definitions</u> 1. CNG Management Plan means a written management plan that is certified by the Chief Executive or authorised person of Environment Canterbury as addressing the following containment matters (where relevant): • the sale of sheep grazed in known CNG areas; • the inspection of cattle, horses and deer from known CNG areas prior to movement or sale; • the inspection of dogs prior to movement outside of the property boundary; • vehicle hygiene protocols for vehicles/machinery/equipment (including clothing and personal equipment); • the sale and distribution of any crops; • visitor entry and exits points, signage, access; • notification to Environment Canterbury of stock movement and location beyond the property; • to address specifically, the use of CNG infested land for recreational use.	
Plan Rule 6.4.9 All occupiers within the Canterbury region with Chilean Needle Grass (CNG) on their property shall either: (a) prevent CNG from releasing panicle seed on land they occupy; or (b) be party to a Written Management Agreement that has not been terminated. For the purpose of this rule, prevent means the preclusion of the plant's ability to release panicle seed. A breach of this rule creates an offence under section 154N(19) of the Act. <u>Definitions</u>	**Explanation of rule** The reason for this rule is to ensure that the current infestation levels of Chilean needle grass do not increase.

For the purpose of this rule, Written Management Agreement means an agreement signed between the land occupier and the Council. It must address the following matters: 1. Map the physical attributes of the property, including the known areas of CNG and control mechanisms that are in place. 2. Either: i. identify the areas for the occupier to undertake control works on their land and specify the control works to be undertaken (including physical and/or chemical control methods); or ii. where areas for control have not been identified, identify an area/s within which the Council will undertake a search and undertake any necessary control works; or 3. The review of the Written Management Agreement on an annual basis, or earlier, if there is a change in land use that would result in the Written Management Agreement being unfit for purpose.	
Plan Rule 6.4.10 No person shall move any goods contaminated with Chilean needle grass (CNG) seed beyond their property boundary. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The reason for this rule is to prevent the transport of seed from infested properties to land free of the presence of Chilean needle grass (CNG).

Coltsfoot

Table 21

Description and adverse effects	
Coltsfoot is a perennial, mat-forming herb growing up to 20 centimetres tall. Its single daisy-like flowers appear at the top of the flower-stalk before the leaves emerge in spring. The large, leathery leaves occasionally have a spider web appearance and they have finely-toothed leaf edges. The upper leaf surface is green and smooth while the lower leaf surface is greyish-white with woolly hairs. Small brown fruit are produced, attached to a dandelion-like parachute of hairs. It has stout roots and deep creeping rhizomes. It is present on 27 sites scattered across 1,118 hectares in the Waimakariri River catchment. Coltsfoot is invasive and it is capable of entering and clogging small waterways as well as infesting irrigated pasture. It therefore adversely impacts environmental values.	 Environment Canterbury
Objective, Principal Measures and Rules	

Plan Objective 11	Principal measures to be used
Over the duration of the Plan, sustainably control coltsfoot within the Canterbury region, to ensure its extent does not increase and biodiversity values on adjacent land are not adversely affected.	**Council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 11.
Advice Note	
Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Biosecurity Act 1993.	

Darwin's barberry

Table 22

Description and adverse effects	
Darwin's barberry is an evergreen, spiny, yellow-wooded shrub (less than 4 metres tall) with woody and densely hairy stems that have tough, 5-pronged, needle-sharp spines. Hairless, glossy, dark green leaves (10-30 by 5-15 millimetres) are usually spiny-serrated along edges. Hanging clusters (7 centimetres long) of deep orange-yellow flowers (5-7 millimetre diameter) appear from July to February followed by oval purplish-black berries (5-7 millimetre 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. Darwin's barberry is known to infest 254 sites scattered across 2,500 hectares of the region. It is capable of threatening the purity of indigenous forest by invading intact and undisturbed stands. Older plants can flower and produce seeds in the shade and so perpetrate the production of fresh seed.	 Environment Canterbury
Objective, Principal Measures and Rules	
Plan Objective 12	**Principal measures to be used**
Over the duration of the Plan, sustainably control Darwin's barberry to ensure that the extent of its infestations does not increase at the known 254 sites in the Canterbury Region and that biodiversity and environmental values on adjacent land are not adversely affected.	**Council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 12.
Advice Note	

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

Feral rabbit

Table 23

Description and adverse effects	
The wild European rabbit (**feral rabbit)** is 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. It has four sharp incisors (two on top, two on bottom) that grow continuously throughout its life, 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, its 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. Feral rabbits' preferred habitat is grassland below about 1000 metres altitude, with free draining soils, sunny aspect, and less than 1000 millimetres annual rainfall. Their distribution and population density is reflected by a propensity of land to harbour populations of rabbits and the potential rate of population increase. While much of Canterbury lies in the low and negligible proneness classes, areas of the Upper Waitaki Valley, the Mackenzie Basin and inland Kaikōura are high to extreme in their proneness. The North Canterbury hill country is moderately prone to rabbits. The introduction of Rabbit Haemorrhagic Disease (RHD) has had a dramatic effect on rabbit populations, particularly in the highly prone areas of the Waitaki and Mackenzie. Rabbits can cause a number of adverse effects on economic well-being and environmental values particularly in the more rabbit-prone lands. At high numbers the control costs can be prohibitively expensive. Their impact reduces available grazing for domestic stock and subsequently decreases the financial returns to landowners and their ability to fund control. High rabbit numbers also assist in maintaining high predator (mustelids) numbers. This can lead to significant costs being incurred in situations where predators carry bovine tuberculosis.	 Environment Canterbury

On highly rabbit-prone land, and to a lesser extent on moderately prone land, rabbits, often in conjunction with other grazing animals, cause a number of environmental effects, including: (i) the depletion of many plant communities and species diversity; (ii) an increase in areas of bare ground as well as physical disturbance of the soil, both of which increase the risk of erosion; (iii) a reduction in soil organic matter through overgrazing, which, in turn, results in deterioration in the physical and nutrient properties of the soil; (iv) adverse effects on indigenous and other fauna, when rabbit predators target alternative prey.	
Objective, Principal Measures and Rules	
Plan Objective 13 Over the duration of the Plan, sustainably control feral rabbits to ensure population levels do not exceed Level 3 on the Modified McLean Scale[12] in order to minimise adverse effects on production and environmental values within the Canterbury region.	**Principal measures to be used** The **requirement to act, council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 13. Generally occupiers will carry out the necessary control work to maintain population levels but Environment Canterbury may undertake the work where it is funded to do so. Environment Canterbury may also facilitate inter-property, co-ordinated control approaches under site-led initiatives.
Plan Rule 6.4.11 An occupier within the Canterbury region shall control feral rabbit densities on the land they occupy to at or below Level 3 on the Modified McLean Scale. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** 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 occupiers, and in so doing, prevent the possible adverse effects on wider environmental values.
Plan Rule 6.4.12 **Note: This is designated a Good Neighbour Rule** An occupier within the Canterbury region shall, upon receipt of a written direction from an Authorised Person, control feral rabbit densities on their land to at or below Level 3 on the Modified McLean Scale within 500 metres of the adjoining property boundary where the occupier of the adjoining property is also controlling feral rabbit densities at or below Level 3 on the Modified McLean Scale within 500 metres of the boundary. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The reason for this rule is to manage the spread of feral rabbits causing unreasonable costs to the adjacent occupier where active feral rabbit management is being undertaken by that occupier. Any action pertaining to non-compliance will only be initiated upon a complaint in writing from the adjoining affected occupier.

[12] Refer Appendix 3 for Modified McLean Scale

Plan Rule 6.4.13	Explanation of rule
Other than under the instruction or supervision of an Authorised Person, no person shall discharge a firearm within or across a property where a control operation involving bait is being planned or undertaken on the property to manage feral rabbits. A breach of this rule creates an offence under section 154N(19) of the Act.	The purpose of this rule is to prevent human interference prior to any necessary control operations by Environment Canterbury.

Gorse

Table 24

Description and adverse effects	
Gorse is a sharply spinous, woody, deeply rooted, leguminous perennial shrub able to grow almost anywhere. It grows up to 4 metres tall with thick stems. It is a widespread plant scattered across land throughout the region. Density varies from light to heavy depending upon the intensity of grazing management. It is most prevalent on lightly grazed and non-grazed areas. Gorse forms dense thickets that prevent stock from grazing infested areas. Seeds can be ejected up to 5 metres from pods. Seed may be spread by water, birds, road-making, gravel extractions, animals and machinery. The plant may seed twice a year. Seed may survive in the soil for more than 50 years. Gorse adversely affects production and economic well-being by infesting productive land. Gorse also adversely impacts wetlands, rocky outcrops and other habitats for animals. There are also site led programmes to control gorse, refer maps 7.1 to 7.4	 Environment Canterbury
Objective, Principal Measures and Rules	
Plan Objective 14 Over the duration of the Plan, sustainably control gorse within the Canterbury region to preclude land presently free of, or being cleared of, gorse becoming infested and production values adversely affected.	**Principal measures to be used** The **requirement to act, council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 14. Generally occupiers will carry out the necessary control work to remove gorse plants. In addition, Environment Canterbury may facilitate or assist additional community initiative approaches under site-led programmes.
Plan Rule 6.4.14	**Explanation of rule** The reason for this rule is to manage the spread of gorse causing unreasonable costs to an

Note: This is designated a Good Neighbour Rule All occupiers within the Canterbury 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 occupier of the adjoining property is eliminating gorse infestations within 10 metres of that boundary with the intention of protecting their economic well-being. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed. The provisions of this rule do not apply when gorse is present as a hedge on a property boundary provided that the top and sides are trimmed each year after flowering but before seed set to minimise seeding. A hedge is any single row extending horizontally for a minimum continuous length of 50 metres. A breach of this rule creates an offence under section 154N(19) of the Act.	adjacent occupier where active gorse management is being undertaken by that land occupier.
Plan Rule 6.4.15 All occupiers within the Hill and High Country Zone as shown on Map 4 in Appendix 4 shall eliminate gorse infestations that cover up to 50 square metres in area on the land that they occupy. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set viable seed. The provisions of this rule do not apply when gorse is present as a hedge on a property boundary provided that the top and sides are trimmed each year after flowering but before seed set to minimise seeding. A hedge is any single row extending horizontally for a minimum continuous length of 50 metres. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The reason for this rule is to maintain the past investment by occupiers in establishing areas clear of gorse within properties.
Plan Rule 6.4.16 All occupiers within the Hill and High Country Zone as shown on Map 4 in Appendix 4 shall eliminate gorse infestations on their land within 10 metres of an adjoining property boundary. 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.	**Explanation of rule** The reason for this rule is to manage the spread of gorse to adjacent occupiers.

A breach of this rule creates an offence under section 154N(19) of the Act.	
Advice Note 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. Refer also to section 8.3 of this Plan.	

Nassella tussock

Table 25

Description and adverse effects	
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 3 centimetres 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.	 Environment Canterbury
Objective, Principal Measures and Rules	
Plan Objective 15 Over the duration of the Plan, sustainably control nassella tussock within the Canterbury region to ensure current population levels do not increase in order to minimise adverse effects on production values.	**Principal measures to be used** The **requirement to act, council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 15 Generally occupiers will carry out the necessary control work to remove nassella tussock prior to seeding.
Plan Rule 6.4.17 **Note: This is designated a Good Neighbour Rule** All occupiers shall, on receipt of a written direction from an Authorised Person, remove nassella tussock plants on land they occupy:	**Explanation of rule**

(i) within the Nassella Tussock Control Zone delineated on Map 5 in Appendix 4 by 31 October every year; or (ii) in all other parts of the Canterbury Region by 30 September each year; within 100 metres of the adjoining property boundary where the occupier of the adjoining property is taking reasonable steps to remove nassella tussock plants. A breach of this rule creates an offence under section 154N(19) of the Act.	The reason for this rule is to prevent nassella plants spreading to neighbouring properties. Without a prescribed date for completing control work, some occupiers would not complete control operations prior to seed set. The two dates set out for completing the control programmes enable compliance inspections to be appropriately targeted. This rule is required in addition to Plan Rule 6.4.18 to manage the spread of nassella causing unreasonable costs to an adjacent occupier where active nassella management is being undertaken by that land occupier.
Plan Rule 6.4.18 All occupiers shall remove all nassella tussock plants on land they occupy: (i) within the Nassella Tussock Control Zone delineated on Map 5 in Appendix 4 by 31 October every year; or (ii) in all other parts of the Canterbury region by 30 September each year. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The reason for this rule is to prevent nassella tussock plants from seeding and re-infesting land within or between properties. Without a prescribed date for completing control work, some occupiers would not complete control operations prior to seed set. The two dates set out for completing the control programmes enable compliance inspections to be appropriately targeted.

Old man's beard

Table 26

Description of pest and adverse effects	
Old man's beard is a deciduous, perennial, climbing, layering vine to 20 metres tall with very long, woody stems with six prominent ribs (appear as furrows in older vines) and pale, easily rubbed-off bark. Leaves are arranged in opposite pairs on the stems, and are made up of five (sometimes three) widely spaced leaflets that fall in autumn. Thin, papery leaftlets are sparsely hairy and have bluntly toothed or smooth edges. Creamy white, fragrant flowers (2-3 centimetre diameter) are produced from December to May, followed by grey, hairy seeds (2-3 millimetres long) with distinctive white plumes (3-4 centimetres long) in dense, fluffy clusters persisting over winter (hence the name 'old man's beard'). In comparison, native clematis usually has 3 leaflets per stem, smooth stems, and is evergreen. It is found in exotic forest, native forest remnants, shelterbelts, hedgerows, waste ground, on riverbanks and in gardens. The plant is thought to occupy approximately 20,000 hectares in the region. Old man's beard is capable of smothering and killing all plants to the highest canopy and preventing the establishment of native plant seedlings. It moves readily into established forest and river protection plantings,	 Environment Canterbury  Environment Canterbury

extending over the canopy and by layering. Its seeds are both wind and water borne. Old man's beard adversely affects environmental and amenity values. There are also site led programmes to control old man's beard, refer maps 9.1 – 9.12.	

Objective, Principal Measures and Rules	
Plan Objective 16 Over the duration of the Plan, sustainably control old man's beard within the Canterbury region, to ensure current plant numbers or density levels do not increase in order to minimise adverse impacts on environmental values.	**Principal measures to be used** The **requirement to act, council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 16. Generally occupiers will carry out the necessary control work to remove old man's beard.
Plan Rule 6.4.19 All occupiers shall destroy old man's beard infestations that cover up to 100 metres^2 in area on the land that they occupy. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The purpose of these rules is to provide a defined level at which landowners must carry out control of old man's beard infestations.
Plan Rule 6.4.20 **Note: This is a designated Good Neighbour Rule** All occupiers shall, on receipt of a written direction from an Authorised Person, destroy all old man's beard infestations on the land that they occupy within 20 metres of the adjoining property boundary where the occupier of the adjoining property has cleared, or is clearing, old man's beard infestations within 20 metres of the boundary between the properties. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The purpose of this rule is to manage the spread of old man's beard causing unreasonable costs to an adjacent occupier where active old man's beard management is being undertaken by that land occupier.
Plan Rule 6.4.21 All occupiers shall destroy all old man's beard infestations on the land they occupy within 20 metres of an adjoining property boundary. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The purpose of this rule is to manage the spread of old man's beard to an adjacent property.

Purple loosestrife

Table 27

Description of pest and adverse effects	
Purple loosestrife is an erect, hairy, summer-green perennial herb, 1-3 metres tall. With a taproot and fibrous roots it forms dense surface mats and produces up to 50 stems per rootstock. The much-branched stems are 4-8	

sided, pink at base and die off in winter. Narrow leaves (20-100 by 5-25 millimetres) are usually paired.

From December to February a showy, densely hairy flowerhead spike (20-25 centimetres long) is produced, made up of purple-magenta flowers with 5-6 petals, which are followed by blackish seed capsules (3-5 millimetres long). Seed is spread by the movement of water and contaminated machinery, soil, livestock and hay.

It is found scattered across 177 sites in Canterbury but occupying less than one hectare in area overall.

Purple loosestrife rapidly invades damp ground and shallow water. It overtops native species with dense bushy growth, is long-lived and produces millions of long-lived, highly viable seeds from an early age. Tolerates hot or cold conditions and low to high nutrient levels in the water, but is intolerant of salt water. It causes adverse effects on environmental values because of its ability to exclude all other species and destroy wetland and marginal habitats.

Purple Loosestrife is rated in the top 100 alien invasive species worldwide (Global Invasive Species Database, International Union for Conservation of Nature), and it impacts on environmental and agricultural values, as well as impacting on kai and taonga species important to Ngāi Tahu.

Environment Canterbury

Environment Canterbury

Objective, Principal Measures and Rules

Plan Objective 17	**Principal measures to be used**
Over the duration of the Plan, sustainably control purple loosestrife to ensure its extent does not increase and biodiversity values on adjacent land are not adversely affected.	Appropriate measures drawn from the suite of activities listed under **council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 17.

Advice Note

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

Saffron thistle

Table 28

Description of pest and adverse effects	
Saffron thistle is an upright thistle that can grow up to 1 metre tall. It germinates in autumn and the leaves grow out from the centre to form a rosette. In late spring/early summer, a single stem emerges from the rosette and over time, the rosette leaves disappear and the stem divides into many branches. Its glossy, dark green leaves have sharp-tipped spines. Yellow flowers with purplish veins appear from December to April. Infestations are limited to 13 active sites scattered across approximately 378 hectares, mainly north of the Rakaia River. Once established, saffron thistle can form dense stands, preventing stock movement and competing with pasture species. The sharp spines can cause injuries to the eyes and mouths of stock and get stuck in wool. Due to this, saffron thistle can cause adverse effects on economic well-being. The large seeds spread easily by stock, water, vehicles and in dirt to other locations. The whole plant can also break off at the base and be blown for long distances, further spreading seed. Seed can remain viable in the soil for up to 8 years. For these reasons, it is included in the Plan.	 NZ Plant Protection Society
Objective, Principal Measures and Rules	
Plan Objective 18 Over the duration of the Plan, sustainably control saffron thistle within the Canterbury region to ensure current plant numbers or density levels do not increase in order to minimise adverse effects on production values.	**Principal measures to be used** Appropriate measures drawn from the suite of activities listed under **requirement to act, council inspection, service delivery, advocacy and education** described in section 5.3 of the Plan will be used to achieve Plan Objective 18.
Advice Note Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Biosecurity Act 1993.	

Wild Russell lupin

Table 29

Description of pest and adverse effects	
Russell lupin is a perennial herb, up to one metre tall, with erect, hairy stems that branch from the base. Clusters of 8-15 leaflets (3-13 x 1-3 centimetres) that are usually hairless above and silky below. Produces an erect flowerhead spike (15-60 centimetres long) bearing many slightly scented, pea-like blue, purple, orange, yellow, pink or white flowers (12-20 millimetres) from September to February. Straight seed pods	

(3-5 centimetres) containing mottled dark brown seeds are covered in dense, soft hairs.

It grows and matures quickly, produces many, well dispersed, long-lived seed. Tolerates wind, warm to cold, flooding and drought, low fertility (fixes nitrogen) and fire. Intolerant of moderate shade. It produces large amounts of seed that are spread mainly by water, and also by humans distributing them along roadsides.

Russell lupin rapidly invades shingly braided river systems and the dense, self-replacing stands provide hiding places for predators of the (often endangered) birds that would usually nest safely on these bare islands. The dense infestations also interfere with waterflow along these rivers, changing the ecosystem for the birds that live there. Increased soil nitrogen may induce change in species composition in plant communities from low fertility species to weed species. Causes sand and gravel to build up, altering shape of rivers and contributing to flooding and erosion. Increased cover may prevent some birds (eg. dotterels, wrybills) nesting, and may increase predation by cats, mustelids, etc. on birds.

Disturbed lowland and subalpine shrubland, short tussock-land and, wetlands are susceptible to invasion.

Department of Conservation

Department of Conservation

Objective, Principal Measures and Rules

Plan Objective 19 Over the duration of the Plan, sustainably control the extent of Russell lupin within specified distances from waterways to preclude establishment of wild Russell lupin and to prevent adverse effects on environmental values.	**Principal measures to be used** Appropriate measures drawn from the suite of activities listed under **requirement to act, council inspection, service delivery, advocacy and education, and collaboration** described in section 5.3 of the Plan will be used to achieve Plan Objective 19.
Plan Rule 6.4.22 **Note: This is a pest agent rule** On rural zoned land within the Canterbury region, no Russell Lupin shall be planted within: (a) 200 metres of the outer gravel margin of a braided river as measured at the time of planting or if there is no outer gravel margin beyond the active channel, 200 metres from the edge of the active channel of a braided river; (b) 50 metres from any non-braided river; (c) 10 metres from any artificial watercourse; or (d) 10 metres from an adjoining property boundary. A breach of this rule creates an offence under section 154N(19) of the Act. **Artificial watercourse** means a watercourse that is created by human action. It includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal channel. It does not	**Explanation of rule** The reason for this rule is to prevent Russell lupin establishing within the specified distances from waterways and adjoining property boundaries.

include artificial swales, kerb and channelling or other watercourses designed to convey stormwater. **Braided river** means any river with multiple successively divergent and rejoining channels separated by gravel islands. **Non-braided river** means a continually or intermittently flowing body of fresh water that is not a braided river; and includes a stream and modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity generation, and farm drainage canal). **River** means a continually or intermittently flowing body of fresh water; and includes a stream and modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity generation, and farm drainage canal).	
Plan Rule 6.4.23 All occupiers on rural zoned land within the Canterbury Region shall eliminate all wild Russell lupin within: (a) 200 metres of the outer gravel margin of a braided river as measured at the time of planting or if there is no outer gravel margin beyond the active channel, 200 metres from the edge of the active channel of a braided river; (b) 50 metres from any non-braided river; (c) 10 metres from any artificial watercourse; or (d) 10 metres from an adjoining property boundary. For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set seed. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule** The reason for this rule is to prevent Wild Russell lupin establishing and seeding within the specified distances from waterways and adjoining property boundaries.
Plan Rule 6.4.24 **Note: This is designated a Good Neighbour Rule** All occupiers on rural zoned land and crown owned and public conservation estate land within the Canterbury Region shall, on receipt of a written notice of direction from an Authorised Person, eliminate all wild Russell lupin within 10 metres of the adjoining property boundary where the occupier of the adjoining property is taking reasonable steps to eliminate wild Russell lupin within 10 metres of that boundary.	**Explanation of rule** The purpose of this rule is to manage the spread of wild Russell lupin causing unreasonable costs to an adjacent occupier where active wild Russell lupin management is being undertaken by that land occupier.

For the purpose of this rule, eliminate means the permanent preclusion of the plant's ability to set seed. A breach of this rule creates an offence under section 154N(19) of the Act.	
Advice Note Sections 52 and 53 of the Biosecurity Act 1993, which prevent the communication, release, spread, sale and propagation of pests, must be complied with. These sections should be referred to in full in the Biosecurity Act 1993.	

6.5 Pests to be managed under site-led programmes

Site-led programmes cater for sites that are determined in two main ways. In the first instance, there are sites within the Canterbury region that have been identified through a variety of ways at a district, local or individual scale as having particular values that are special to those sites. Secondly, site-led programmes provide an opportunity for individuals or community groups to promote and create sites that they consider hold values of importance.

It is not the role of this Plan to specify criteria for, or to identify sites of value. Instead, that role falls to other legislative mechanisms (for example the RMA, the Conservation Act) or to individual and community group initiatives.

Sites to be managed under the site-led programmes may range in extent from small areas within a property to larger areas covering multiple properties. Their values can be threatened by individual or multiple organisms. Therefore, pest management regimes specifically tailored to each site will be necessary. It is anticipated that further sites will be identified in the future, which can be added to the Plan.

Environment Canterbury seeks to actively provide opportunities for Ngāi Tahu to engage on pest management matters that can result in adverse effects for Ngāi Tahu values. Site-led programmes provide a mechanism and opportunity to support sites of value to Ngāi Tahu where a regulatory backstop is required.

Environment Canterbury may provide assistance to Ngāi Tahu, individuals or community groups to help with establishing additional sites. Assistance may include advice on which pests should be targeted, defining the outcomes and management regimes, delineating land occupier responsibilities and formulating funding arrangements. In most instances the programmes will target pests already specified in the Plan or those organisms listed in Appendix 2 (Organisms of Interest).

Maps for the sites identified for site-led programmes are included in Appendix 4 to this Plan. The sites incorporate specified pests that threaten one or more areas where it may be necessary to fund initial control and in some cases secure that input by way of ongoing land occupier control responsibilities.

Additional site-led programmes may be developed beyond the commencement of the Plan. These may be non-regulatory and managed outside of the Plan, or they may require regulation to ensure the objective is met. If regulation is required, a review of the Plan may be required. The scope of the site-led programme will determine the extent of the review process. In particular, the scale of the impacts on persons who are likely to be affected by the programme will be a key consideration in the extent of consultation that is required.

Pests to be included in site-led programmes are listed in Table 30 below.

Table 30: Pests included in site-led programmes

Common name	Scientific name	Map Number (refer Appendix 4)
Banana passionfruit*	*Passiflora tripartita var mollissima* *P. tripartita var azuayansis* *P. tarminiana* *P. pinnatistipula* *Passiflora x rosea* *P. caerulea*	Maps 6.1 and 6.2
Broom - common - montpellier - Spanish - white	 *Cytisus scoparius* *Teline monspessulana* *Spartium junceum* *Cytisus multiflorus*	Maps 7.1 to 7.4
Cathedral bells	*Cobaea scandens*	Map 8
Feral goat[2]	*Capra aegagrus hircus*	Map 14
Gorse	*Ulex europaeus*	Maps 7.1 to 7.4
Lagarosiphon*	*Lagarosiphon major*	Appendix 4A and 4B

Old man's beard*	*Clematis vitalba*	Maps 9.1 to 9.12
Possum	*Trichosurus vulpecula*	Map 10
Spartina	*Spartina alterniflora, S. anglica, S. gracilis,* *S. maritime, S. × townsendii*	Maps 11.1 to 11.3
White-edged nightshade*	*Solanum marginatum*	Map 12
Wild Thyme	*Thymus vulgaris*	Maps 13.1 to 13.3
Any other pest listed in Table 3[1]		

*Plants already declared Unwanted Organisms and subject to the NPPA

[1] Other organisms declared as pests in Table 2 may deemed necessary to control in conjunction with site-led programme pests.

[2] Feral goat means a goat that is located within the Containment Area shown on Map 14 in Appendix 4 that is not effectively constrained.

The characteristics of each pest, and threats that they pose, are set out in Table 31 below.

Table 31: Characteristics and threats of pests in site-led programmes

Description of pest and adverse effects	
Banana passionfruit species are virtually all identical in their characteristics and appearance. They are tall, climbing vines that grow in forest and shrubland margins, stream-sides, coastline cliffs, consolidated sand dunes and in domestic gardens. The plants produce large pink tubular flowers throughout the year. These develop into oval fruit that turn yellow to orange-yellow when ripe. This plant produces fruit that is eaten and spread by animals, birds and humans. It is capable of smothering other plants and dominating the canopy. It grows rapidly and its stems will layer. Due to this it poses adverse effects to environmental and biodiversity values of the region.	 Environment Canterbury
Broom See pest description in section 6.4 of the Plan, sustained control programme.	
Cathedral bells are evergreen, climbing vines to 6 metres tall, with angled stems with hook-like tips. Leaves are arranged alternately on stems, and are made up of 3 pairs of oval leaflets (including small basal pair) that are dark green above, whitish below, with branched tendrils that are purplish when young and woody at the base. Midrib has twining tendrils. Bell-shaped flowers (6-7 centimetres long) are produced from December to May that are green and smelly when young and become deep purple. These develop into green seed capsules (55-85 millimetres long) containing winged seeds (10-15 millimetres). Seed is carried a short distance by wind, but most spread is through dumped vegetation, soil movement or scrambling habit. Gardens are a common source. It is found in open and intact forest, forest margins and shrublands, especially in low-frost areas. Cathedral bells smothers all plants up to medium to high canopy, preventing the establishment of native plant seedlings, causing adverse effects to environmental values.	 Weedbusters.org.nz  Weedbusters.org.nz

Feral goats are sheep-sized animals with short hair, pointed horns and a beard. Colour can be white, black, brown or a combination of these. Males average 39 kilograms, are about 680 millimetres tall and about 1.3 metres long. Females average 30 kilograms, are about 620 millimetres tall with a body length of 1.2 metres. Feral goats have cleaved hooves with pointed, slightly in-curved tips and greenish blue eyes. Currently there are small feral populations scattered throughout the Canterbury Region. Goats are social animals, they disperse slowly, and do not voluntarily cross large rivers. This results in patchy distribution and allows land managers to consider local eradication. They do however have high birth rates, when in good condition, and goat populations colonising new areas or recovering from control may roughly double in size every two years. The major cause of mortality is hunting, although feral pigs may prey on young goats. Goats are browsing generalists and feed on woody species in forests. Feral goats impact on indigenous ecosystems through their concentrated browsing and trampling. Even in low numbers their impacts on forest and scrublands can be serious – they destabilise forest ecosystems, and defoliate and eat the stems of palatable under-storey species, bark saplings, and prevent regeneration of seedlings. Unpalatable shrubs increase, and on some islands forest ecosystems have been converted to grassland. In Canterbury, plant species most likely to be eaten include mahoe, broadleaf, supplejack, pate, small leafed coprosma species, *Asplenium bulbiferum*, blackberry, and gorse. Vegetation has been seriously depleted on many of the sites occupied by goats on Banks Peninsula, on the foothills of the Seaward Kaikoura range, and in South Canterbury Department of Conservation reserves. Goats may also affect native vertebrate and invertebrate populations by competition for food and by modifying forest habitats. Feral goats have few economic impacts, although they may occasionally compete with sheep for feed, and they have a wide range of parasites and diseases in common with sheep. Their range is limited however, and they are controlled relatively easily, so it is not considered that they have any significant economic impact.	 Environment Canterbury
Gorse See pest description in section 6.4 of the Plan, Sustained control programme.	

Lagarosiphon is a submerged, bottom-rooted perennial, which can form monospecific growths up to five metres tall upon reaching the water surface. It propagates through stem fragments being carried on water currents, boats, aquarium and pond escapes and deliberate planting. This plant is a potential threat to the aquatic environment because it forms dense, monospecific colonies. These, by definition, exclude other parts of the aquatic ecosystem, and it further slows water and wave movement and causes local deoxygenetion. While most slow moving water ecosystems are already heavily modified in New Zealand, it still represents a threat to the remaining biodiversity in these ecosystems.	 Environment Canterbury
Old man's beard See pest description in section 6.4 of the Plan, Sustained control programme.	
Possums are marsupials and the males and females are similar in size; between 650 and 930 millimetres, including a tail of 250 to 405 millimetres. They are about the size of a cat. Adults weigh between 1.4 and 6.4 kilograms. Possums have a furry body, with a long prehensile (can hold on to things) bushy tail for climbing. They have a pointed snout with 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 rather hand-like, and rear paws rather longer with a pair of fused digits. Possums begin breeding at one to two years of age, and populations are capable of increasing at a rate of 22-30 percent per year, indicating that a population at 20 percent of its carrying capacity is capable of recovering to its full carrying capacity within ten 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. Possums are primarily herbivores, and 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 one location consists of only a few species. The species most common in a habitat are not necessarily those most frequently eaten. Therefore, they cause extensive defoliation of favoured plant species and progressive change in forest composition to less favoured species occurs.	 Environment Canterbury

Possum 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, although within Canterbury insects are most likely to be at risk. Possums cause economic effects by damaging exotic forests, eating pasture, and through the spread of bovine Tb. Clover and pasture grasses were a major component of possum diet in a study of possum feeding on Banks Peninsula, apart from summer dry periods. However, the possum browsing on pasture is likely to be a minor problem apart from pasture/bush margins, and is likely to be accommodated within the normal biological response rates of those systems. It may be more significant in areas such as parts of Banks Peninsula where the bush/pasture interface is a major feature. The damage to exotic forests also tends to be limited. Bovine Tb is the major economic impact associated with possums. 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.	
Spartina is a perennial, clump-forming grass to 1 metre tall with rhizomes and fibrous roots and erect stems (4-9 millimetre diameter) with many brownish leaf sheaths. Alternate leaves (5-45 by 4-15 millimetres) are deeply wide-ribbed on upper surface and have ligules (1-3 millimetres long). Seed heads are occasionally seen, and seed is occasionally produced at some sites. It colonises the bare inter-tidal zone where it forms dense clumps and traps sediment. Spartina tolerates all weathers and temperatures, fire, grazing, and other damage. Rhizomes spread slowly and broken fragments re-sprout easily. Livestock, propellers, nets and similar can dislodge rhizome fragments, which are then spread by tidal and current movement. They also spread through intentional planting. Spartina can survive long-term at sea, which means that it can travel long distances with the currents. Spartina traps sediment, raising the level of the ground above the high tide mark and destroying the inter-tidal zone and habitat. Other weedy grasses succeed spartina,	 K McCombs

creating dry 'meadows'. It can reduce large estuaries and shallow harbours to thin drains surrounded by rough pasture, adversely affecting environmental values, resulting in an immense loss of biodiversity. Spartina is rated in the top 100 alien invasive species worldwide (Global Invasive Species Database, International Union for Conservation of Nature), and it impacts on environmental values, recreational usage, impacts on kai and taonga species important to Ngāi Tahu, and, commercial fisheries. Estuaries are recognised as important habitats for some juvenile fish species harvested by commercial fisheries.	 K McCombs
White-edged nightshade is a quick growing perennial shrub that can grow up to 5 metres tall. The large woody stems and green oak-shaped leaves are covered in nasty sharp spines. Its leaves have white veins on the upper surface and dense chalky-white hairs on the underside. In summer white or pale mauve flowers bloom in clusters at the end of branches. Green-yellow tomato-shaped berries grow on the ends of prickly stalks. It is confined to five sites on Banks Peninsula scattered across 259 hectares. The shrub is well adapted to dry areas. Once established, it forms dense thickets that are impenetrable to stock. It also prevents the establishment of native understory on margins of native bush. White edged nightshade adversely affects economic well-being and environmental values.	 NZ Plant Protection Society
Wild Thyme was first introduced into New Zealand as a culinary herb. It has become widespread in the Otago Region, and occurs in the wild at two sites in Canterbury – in the upper Rangitata River and near Loburn in North Canterbury. Wild thyme has, in the past, spread to the Lindis Pass area, but is no longer known to be present in this area. The plant prefers dry stony soils, slopes, screes and terraces, and in Otago favours rabbit-disturbed sites. It is unpalatable and therefore has a competitive advantage in heavily grazed situations. Wild thyme could be considered a pest for agriculture because it dominates dry lowland terraces suitable for grazing, however it has not exhibited this behaviour to any great extent in Canterbury. At the only significant current location in the Rangitata Gorge it infests the very stony and dry lowland sites of little or no agricultural value, and drier parts of lower hill slopes such as spur brows, scree and north facing lower slopes. While it has been at this site for a number of years, it has not spread into adjacent areas where there is any significant depth of soil, but has spread down dry stony watercourses toward the main river. There are no obvious impediments to it infesting the majority of the Tasman soils (dry, stony river terrace soils) in the Rangitata, and parts of the hill soils where the environment is particularly suitable and of a similar nature to its current range (dry and stony areas of the Mesopotamia soils).	 Environment Canterbury

Wild thyme may infest some areas of agricultural land, but it does not appear to be capable of serious economic damage because it competes only on the drier and least productive of the pasture areas in Canterbury. There may be potential benefits from commercial harvest of wild crops. Additionally, there is some potential for "wild thyme" honey if bees can be made to feed exclusively on the crop. These benefits are considered likely to be relatively minor given that in Otago these have not proven to be major benefits associated with what is a very prevalent weed in that region. Wild thyme's ability to grow in dry conditions on shallow soils bordering rivers is likely to affect biodiversity values in these locations. Because it is little studied in Canterbury the extent of these effects is difficult to assess, but it is likely that alteration of the riparian habitat will have adverse effects on environmental and biodiversity values. Riparian areas in Canterbury are regarded as important biodiversity areas nationally, particularly in terms of avian habitat.	

The management aims and the range of methods to be used to accomplish those aims for the pests that are to be managed under site-led programmes are set out in Table 32 below.

Table 32: Aims and means of achievement for site-led programmes

Objective, Principal Measures and Rules	
Plan Objective 20 For each site in the Canterbury region listed in Appendix 4, progressively control, where present: (i) Cathedral bells (ii) Banana passionfruit; (iii) Old man's beard; (iv) White-edged nightshade; and (v) Wild Thyme; to avoid, mitigate or prevent damage to the specific values particular to each site. For each site, the first 10 years of the Plan's operation will result in the: (i) Extent of Cathedral bells being reduced by 30%; (ii) Extent of banana passionfruit being reduced by 50%; (iii) Extent of old man's beard being reduced by 75%; (iv) Extent of white-edged nightshade being reduced by 10%; (v) Extent of wild thyme being reduced by 50%	**Principal measures to be used** Environment Canterbury will take a lead role in bringing about the desired levels of environmental protection to the site-led programme sites listed in Appendix 4. The **requirement to act, service delivery, advocacy, education, and collaboration** described in section 5.3 of the Plan, will be used primarily to achieve Plan Objective 20. In many instances, triggering subsequent **requirement to act,** responsibility by occupiers follows initial acheivement by supportive control funding, in whole or part.
Plan Objective 21 For each site in the Canterbury region listed in Appendix 4, sustainably control, where present: (i) Spartina; (ii) Broom; (iii) Gorse;	**Principal measures to be used** Environment Canterbury will take a lead role in bringing about the desired levels of environmental protection to the sites listed in Appendix 4 with the exception that the

(iv) Possum; (v) Lagarosiphon (sites 1 and 2 of Appendix 4A) to avoid, mitigate or prevent damage to the specific values particular to each site. For each site, the first 10 years of the Plan's operation will result in the: (i) The area of spartina being reduced by 75%; (ii) The extent of broom being reduced by 10%; (iii) The extent of gorse being reduced by 10%; (iv) The number of possums being reduced to 5% Residual Trap Catch (RTC); (v) Prevention of the spread of Lagarosiphon from locations 1 and 2 of Appendix 4A.	Department of Conservation will undertake the lead role for spartina control. The **requirement to act, service delivery, advocacy, education, and collaboration** described in section 5.3 of the Plan, will be used primarily to achieve Plan Objective 21. In many instances, triggering subsequent **requirement to act** responsibility by occupiers follows initial acheivement by supportive control funding, in whole or part.
Plan Objective 22 Over the duration of the Plan, for sites 3 - 15 of Appendix 4B, preclude the establishment of lagarosiphon, to prevent damage and adverse effects to biodiversity and environmental values at these sites.	**Principal measures to be used** Environment Canterbury will take a lead role in preventing the establishment of lagarosiphon in sites 3 – 15 of Appendix 4B. Council inspection, advocacy and education described in section 5.3 of the Plan will be used by Environment Canterbury to achieve Plan Objective 22.
Plan Objective 23 Manage domestic and farmed goats, and remove the population of feral goats within the Containment Area shown on Map 14 in Appendix 4 to prevent adverse effects on environmental values. Within the Containment Area shown on Map 14 in Appendix 4, the population of feral goats will reduced by at least 50% in the first 10 years of the Plan.	**Principal measures to be used** Environment Canterbury will take a lead role in bringing about the desired levels of environmental protection to the sites listed in Appendix 4. Environment Canterbury will work in partnership with the Banks Peninsula Goat Working Group (consisting of but not limited to the Banks Peninsula Conservation Trust, the Department of Conservation, and Christchurch City Council) to address feral goats. The **requirement to act, service delivery, advocacy, education, requirement to act and collaboration** described in section 5.3 of the Plan, will be used primarily to achieve Plan Objective 23
Plan Rule 6.5.1 **Note: this is a pest agent rule** Within the Containment Area shown on Map 14 in Appendix 4, all goats shall have an animal identification device. For the purposes of this rule, animal identification device means an ear tag, apparatus, or other mechanism that is attached to or applied to, or implanted or located within, an animal and contains an animal identifier and other information. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule:** This is to enable the requirement to act principal measure to be used to manage feral goats.

Plan Rule 6.5.2 **Note: this is a pest agent rule** Within the Containment Area shown on Map 14 in Appendix 4, occupiers shall ensure that all goats on the property are effectively constrained. For the purposes of this rule, effectively constrained means held behind effective fences or otherwise constrained. A goat is not effectively constrained if it leaves a property and enters another property without the approval of the occupier of that property. A breach of this rule creates an offence under section 154N(19) of the Act.	**Explanation of rule:** This rule prevents goats spreading beyond their properties and adversley effecting environmental values.

7 Monitoring

7.1 Measuring achievement of objectives

Table 33 outlines how Environment Canterbury will undertake monitoring to measure the extent to which the objectives of the Plan are met.

Table 33: Monitoring objectives

Anticipated results	Indicator	Method of monitoring	Frequency of monitoring	Reporting to Council
Exclusion programmes				
Absence of **Australian sedge, broomsedge, hornwort, kangaroo grass, koi carp, noogoora bur, nutgrass, oxylobium, palm grass, spiny broom; and woolly nightshade** from the Canterbury Region	Absence in the Canterbury region	Surveillance and pathway management programmes coordinated by Environment Canterbury	Per programme	Annual
		As reported from occupiers or other persons	As reported	Annual
Eradication programmes				
All **rooks** destroyed	Absence of rooks in the Canterbury region	Rookery inspections	Annual inspection programme	Annual
		As reported from occupiers or other persons	As reported	Annual
All **egeria, entire marshwort, knotweed, moth plant, phragmites, yellow water lily and yellow bristle grass** removed	Absence of these plants in the Canterbury region	Population assessment as a result of inspection activities	Per inspection programme	Annual
		As reported from occupiers or other persons	As reported	Annual
Progressive containment programmes				
African feather grass reduced by 10%, African love grass reduced by 10%, baccharis reduced by 10%, and puna grass reduced by 10%	Annual decrease in plant population in high risk land	Population assessment as a result of inspection activities	Per inspection programme	Annual

Anticipated results	Indicator	Method of monitoring	Frequency of monitoring	Reporting to Council
900,000 hectares of land cleared of **wilding conifers, contorta, Corsican, Scots, mountain and dwarf mountain pines and larch**	Control and maintenance is undertaken as part of the National Wilding Conifer Control Programme	Population assessment as a result of inspection of the National Wilding Conifer Control Programme	Per inspection programme	Annual
Sustained control programmes – for duration of the Plan				
Bennett's wallaby densities within the containment area controlled to Guilford Scale Level 3 or below (see Appendix 3 for details)	Wallaby densities remain at or below Level 3	Guilford Scale assessments where required	Annual	Annual
		Faecal pellet counts	As reported	As reported
No established populations of **Bennett's wallaby** outside of the containment area	Absence outside of area	Population assessment	Annual	Annual
Feral rabbit densities controlled to Modified McLean Scale Level 3 or below (see Appendix 3 for details)	Rabbit densities remain at or below Level 3	Modified McLean Scale assessments where required	Annual	Annual
		Night counts	Annual	Annual
Nassella tussock populations do not increase	Nassella tussock remains within current areas.	Population assessment	As reported	Annual
		As reported by occupiers or any other persons	As reported	Annual
Chilean needle grass does not spread	Chilean needle grass remains within current areas.	Population assessment	As reported	Annual
		As reported by occupiers or any other persons	As reported	Annual

Anticipated results	Indicator	Method of monitoring	Frequency of monitoring	Reporting to Council
Sustained control programmes cont.				
Broom, gorse and old man's beard are restricted to their current spatial extent	Absence adjacent to boundary fences	Property monitoring	Annual	Annual
	Extent remains at current levels	Population assessment	Annual	Annual
		Aerial transect photography	Every 5 years	Every 5 years
Bell heather, boneseed, coltsfoot, Darwin's barberry and purple loosestrife are destroyed in areas where they threaten biodiversity values on adjacent areas	No spread to adjoining areas	Presence/absence	Pre and post control operations	As appropriate
Bur daisy and saffron thistle are destroyed in areas where they threaten production values on adjacent areas	No spread to adjoining areas	Presence/absence	Pre and post control operations	As appropriate
Wild Russell lupin	No spread within specified setbacks from waterways and adjoining property boundaries	Presence/absence	As reported	Annual
Site-led programmes				
Destroy all pests occupying sites identified for control	No spread to adjoining areas	Presence / absence	Pre and post control operations	As appropriate

7.2 Monitoring the management agency's performance

As the management agency responsible for implementing the CRPMP, Environment Canterbury will report on the operational plan each year, within five months after the end of each financial year.

7.3 Monitoring plan effectiveness and review of the Plan

Monitoring the effectiveness of the Plan will ensure that it continues to achieve its purpose. It will also provide for checking that relevant circumstances have not changed to such an extent that the Plan requires review.

Factors Environment Canterbury may assess when considering whether to review the CRPMP under section 100D(2) include:

(a) whether relevant legislation has changed, for example the Act or the NPD, and a review is needed to ensure that the Plan is not inconsistent;

(b) whether other harmful organisms create, or have the potential to create, problems that can be resolved by including those organisms in the Plan;

(c) whether monitoring shows that problems from pests or other organisms to be controlled (as covered by the Plan) have changed significantly; or

(d) whether relevant circumstances have changed to such an extent that Environment Canterbury believes a review is appropriate.

If the Plan does not need to be reviewed under such circumstances, it will be reviewed in accordance with section 100D of the Act. Such a review may amend, revoke, revoke and replace, or leave unchanged the Plan or part of it.

Procedures to review the Plan include Environment Canterbury:

(i) assessing the efficiency and effectiveness of the principal measures (specified for each pest or pest group) used to achieve the objectives of the Plan;

(ii) assessing the impact the pest or organism (covered by the Plan) is having on the region and any other organisms of interest that should be considered for inclusion in the Plan; and

(iii) liaising with public authorities, Ngāi Tahu, and key stakeholder groups on the effectiveness of the Plan.

Part Three Procedures

8 Powers conferred

8.1 Powers under Part 6 and Part 8 of the Act

The Principal Officer (Chief Executive) of Environment Canterbury or Chief Technical Officer (appointed by the Director-General 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 Canterbury will use those statutory powers of Part 6 and Part 8 of the Act as shown in Table 34, where necessary, to help implement the Plan.

Table 34: Powers from Part 6 and 8 to be used

Administrative provisions	Biosecurity Act Reference
Small scale management	Section 100V
The appointment of authorised and accredited persons	Section 103(3) & (7)
Authorised persons to comply	Section 104
Delegation to authorised persons	Section 105
Power to require assistance	Section 106
Power of inspections and duties	Section 109, 110 & 112
Entry in respect of offences	Section 111
Power to record information	Section 113
General powers	Section 114 & 114A
Use of dogs and devices	Section 115
Power to seize evidence	Section 118
Power to seize abandoned goods	Section 119
Power to intercept risk goods	Section 120
Power to examine organisms	Section 121
Power to apply article or substance to place	Section 121A
Power to give directions	Section 122
Power to act on default	Section 128
Liens	Section 129

Declaration of restricted areas	Section 130
Declaration of controlled areas	Section 131
Duration of place and area declarations	Section 133
Options for cost recovery	Section 135
Failure to pay	Section 136
Offences	Section 154M, 154N & 154O

Note: Environment Canterbury's Biosecurity Procedures sets out the procedures it will follow when land 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 (appointed by the Director-General and employed under the State Sector Act 1988) may implement other biosecurity law considered necessary. One example is where restrictions on selling, propagating and distributing pests (under sections 52 and 53 of the Act) must be enforced.

8.3 Power to issue exemptions to plan rules

Any person may be exempt from a requirement in a rule set out in Part Two of the Plan.

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 Canterbury will keep and maintain a register of exemptions granted that records the description, reasons and period of each exemption. This register will be available online at www.ecan.govt.nz. Environment Canterbury may also grant an extension of the period of an exemption.

9. Funding Analysis

9.1 Cost allocation and funding rationale

The Act and the NPD require an analysis of the costs of implementing the Plan. Environment Canterbury's decision on cost allocation is also subject to the funding analysis required under the Local Government (Rating) Act 2002. When determining the appropriate cost allocation for the Plan, Environment Canterbury must consider how the costs will be shared amongst:

- Those people who have an interest in the plan;
- Those who benefit from the plan (beneficiaries);
- Those who contribute to the pest problem and who pose a risk of spreading a pest through their activities (exacerbators); and
- in a way which reflects economic efficiency, equity, the ability to target those funding the Plan and the costs of collecting the funding.

These factors have been considered as part of the development of the Plan and will continue to be considered during development of Environment Canterbury's Annual and Long Term Plans.

The Plan will be funded by rates (both targeted and general), user charges and direct expenditure by land occupiers. Rates have been allocated based on the beneficiaries and exacerbators, divided between production and biodiversity pests. Most pests have some proportion of both production and biodiversity benefits and this is reflected in the allocation of costs for Council activities other than control. Control of some pests benefits both production and biodiversity relatively evenly and this is reflected in the cost allocation.

The funding of costs allocated to rural occupiers will be through targeted rates applied to occupiers of rateable rural land. Annual Plan and Long Term Plan processes will give specific regard to matters outlined in Section 100T of the Biosecurity Act.

Environment Canterbury will continue to negotiate with Crown agencies to secure agreements to assist with the costs of implementing meeting the objectives of the Plan. For example, the partnership approach to wilding conifer control.

The funding formulae for this Plan are set out in the following table. Also refer to the note below the table regarding wilding conifers.

Table 37: Funding formulae under the Plan

Funding formula for Council functions
Control of production pests – 100% targeted rate or user charges
Australian sedge Broom* Chilean needle grass* Egeria Feral rabbit*[13] Gorse* Kangaroo grass Nassella tussock* Noogoora bur Rook Saffron thistle Yellow bristle grass Yellow water lily

[13] Feral rabbit control is delivered by Council within the Banks Peninsula area based on 100% Targeted Rated for Banks Peninsula rateable rural land.

Control of biodiversity pests – 100% general rate
Banana passionfruit Boneseed Broom (site-led programme control) Cathedral bells Coltsfoot Darwin's barberry Entire marshwort Feral goats* Gorse (site-led programme control) Hornwort Knotweed Koi carp Lagarosiphon Moth plant Nut grass Old man's beard* Oxylobium Palm grass Phragmites Possum Spartina Spiny broom White-edged nightshade Wild Russell lupin* Wild thyme Woolly nightshade
Control of pests with both biodiversity and production benefits – 50% targeted rate, 50% general rate
African feather grass African love grass Baccharis Bell heather Bennett's wallaby* Broom sedge Bur daisy Puna grass Purple loosestrife
All other Council operational activity – 50% targeted rate, 50% general rate
Inspection Monitoring Advocacy Investigation (Applies to all pests)

* Where Plan Rules require action to be undertaken by land occupiers, the cost of this action will be met directly by those land occupiers. The Council may provide additional control beyond that required by the Plan Rules to ensure the Plan Objectives are met. Where this occurs, the control will be funded as specified for each pest in Table 37.

Wilding Conifers
Initial control of wilding conifers as part of the National Wilding Conifer Control Programme is funded outside of the Plan. Any regional contribution to maintenance control (as required by Plan Rule 6.3.1) will be determined through Long Term and Annual Plan processes, in conjunction with contributions from the Crown and landowners. The remainder of the wilding conifer Plan Rules which require action from land occupiers will be funded directly by those land occupiers.

9.2 Funding limitations

There are no unusual administrative problems or costs expected in relation to recovering costs from any of the persons who are required to pay. It is recognised that there may be a need to recover enforcement costs for some exacerbators through the courts. In some cases, for example where not all exacerbators can be identified, full cost recovery will not be realised and a rating contribution will be required.

APPENDICES

Appendix 1 Glossary of Terms

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

Act	means the Biosecurity Act 1993
Adjacent	means, for the purpose of this Plan, a property that is next to, or adjoining, another property.
Animal	means any mammal, insect, bird or fish, including invertebrates, and any other living organism except a plant or a human.
Artificial watercourse	means a watercourse that is created by human action. It includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal channel. It does not include artificial swales, kerb and channelling or other watercourses designed to convey stormwater.
Authorised Person	has the same meaning as in the Biosecurity Act 1993: "*a person for the time being appointed an authorised person under section 103*."
Beneficiaries	means the receivers of benefits accruing from the implementation of a pest management measure or plan.
Biological Control	means the introduction and establishment of natural enemies that will prey on or adversely affect a pest or other organisms to be controlled.
Braided River	means any river with multiple successively divergent and rejoining channels separated by gravel islands.
Capital Value	has the same meaning as in the Rating Valuations Act 1998: "capital value of land means, subject to sections 20 and 21, the sum that the owner's estate or interest in the land, if unencumbered by any mortgage or other charge, might be expected to realise at the time of valuation if offered for sale on such reasonable terms and conditions as a bona fide seller might be expected to require."
Destroy	means pull, breakdown, demolish, make useless, kill, cause to cease to exist.
Direction	In relation to Part 6 powers under the Act means a notice issued in accordance with section 122 of the Biosecurity Act 1993 requesting a person, owner or occupier to carry out certain work or measures.
Distribute	means to transport or spread a pest in any way.
Ecosystem	means a dynamic complex of plant, animal and micro-organism communities and their non-living environment, interacting as a functioning unit.

Effect	has the same meaning as in the Biosecurity Act 1993: *(a) includes the following, regardless of scale, intensity, duration, or frequency:* *(i) a positive or adverse effect; and* *(ii) a temporary or permanent effect; and* *(iii) a past, present, or future effect; and* *(iv) a cumulative effect that arises over time or in combination with other effects; and* *(b) also includes the following:* *(i) a potential effect of high probability; and* *(ii) a potential effect of low probability that has a high potential impact*
Environment	has the same meaning as in the Biosecurity Act 1993: "*includes—* *(a) ecosystems and their constituent parts, including people and their communities; and* *(b) all natural and physical resources; and* *(c) amenity values; and* *(d) the aesthetic, cultural, economic, and social conditions that affect or are affected by any matter referred to in paragraphs (a) to (c)*."
Environment Canterbury	means the Canterbury Regional Council *Kaunihera Taiao ki Waitaha.*
Environmental values	means the environment, human health, enjoyment of the natural environment, and the relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu, and taonga.
Exacerbator	means the person creating, aggravating or contributing to a particular pest management problem that the Plan proposes to resolve, by action or inaction.
Feral	means wild or otherwise unmanaged.
Forest species	means a tree species capable of reaching at least 5m in height at maturity where it is located.
Good Neighbour Rule	has the same meaning as in the Biosecurity Act 1993: "*means a rule to which the following apply:* *(a) it applies to an occupier of land and to a pest or pest agent that is present on the land; and* *(b) it seeks to manage the spread of a pest that would cause costs to occupiers of land that is adjacent or nearby; and* *(c) it is identified in a regional pest management plan as a good neighbour rule; and* *(d) it complies with the directions in the national policy direction relating to the setting of good neighbour rules."*
Good	is defined under the Act as any personal property
Habitat	means the place or type of site where an organism or population normally exists.
Indigenous	means produced by, or naturally belonging to, a particular region or area.

Management agency	has the same meaning as in the Biosecurity Act 1993: "*the body specified as the management agency in a pest management plan or a pathway management plan."* For the purposes of this Plan, Environment Canterbury is the management agency.
Monitoring	in relation to a pest or other organisms to be controlled means to observe and measure the presence or distribution of a pest or other organism to be controlled.
National Policy Direction	in respect of this Plan, means the National Policy Direction for Pest Management 2015 made under sections 56 – 58 of the Act.
Non-braided river	means a continually or intermittently flowing body of fresh water that is not a braided river; and includes a stream and modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity generation, and farm drainage canal).
Occupier	has the same meaning as in the Biosecurity Act 1993: *"(a) In relation to any place physically occupied by any person, means that person; and* *(b) In relation to any other place, means the owner of the place; and* *(c) In relation to any place, includes any agent, employee, or other person, acting or apparently acting in the general management or control of the place."*
Organism	has the same meaning as in the Biosecurity Act 1993: *"(a) does not include a human being or a genetic structure derived from a human being:* *(b) Includes a micro-organism:* *(c) subject to paragraph (a) of this definition, includes a genetic structure that is capable of replicating itself (whether that structure comprises all or only part of an entity, and whether it comprises all or only part of the total genetic structure of an entity):* *(d) includes an entity (other than a human being) declared by the Governor-General by Order in Council to be an organism for the purposes of this Act:* *(e) includes a reproductive cell or developmental stage of an organism:* *(f) includes any particle that is a prion.*"
Person	has the same meaning as in the Biosecurity Act 1993: *"includes the Crown, a corporation sole, and a body of persons (whether corporate or unincorporate)."*
Pest	has the same meaning as in the Biosecurity Act 1993: *"an organism specified as a pest in a pest management strategy."*
Pest agent	has the same meaning as in the Biosecurity Act 1993: *"in relation to any pest, means any organism capable of—* *(a) helping the pest replicate, spread, or survive; or* *(b) interfering with the management of the pest"*

Pest Agent Conifer	means as any introduced conifer species that is capable of helping the spread of wilding conifers and is not otherwise specified as a pest in the CRPMP and is not located within a plantation forest.
Pest Management Plan	has the same meaning as in the Biosecurity Act 1993: *"a plan, made under Part 5 of this Act, for the management or eradication of a particular pest or pests."*
Plant	means any plant, tree, shrub, herb, flower, nursery stock, culture, vegetable, or other vegetation; and also includes fruit, seed, spore and portion or product of any plant; and also includes all aquatic plants.
Plantation forest	means a forest deliberately established for commercial purposes, being at least 1 hectare of continuous forest cover of forest species that has been planted and has or will be harvested or replanted.
Propagation	means to multiply or reproduce by sowing, grafting, breeding or any other way.
River	means a continually or intermittently flowing body of fresh water; and includes a stream and modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity generation, and farm drainage canal).
Sale	includes bartering; attempting to sell; having in possession for sale; sending or delivery for sale; causing or allowing to be sold, offered, or exposed for sale. "Sell" has a corresponding meaning.
Subject	in relation to a Plan 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
Wild	in relation to thyme means any plant not subject to husbandry management.
Wilding conifer	Wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in Table 4, established by natural means, unless it is located within a forest plantation, and does not create any greater risk of wilding conifer spread to adjacent or nearby land, other than the forest plantation that it is a part of.
Wild Russell lupin	Wild Rusell lupins are Russell lupins that are established by natural means.

Appendix 2 Organisms of Interest (OoI)

Common Name	Scientific Name
Argentine ant	*Linepithema humile*
Ash	*Fraxinus excelsior*
Barberry	*Berberis glaucocarpa*
Bathurst bur	*Xanthium spinosum*
Beggars tick	*Bidens frondosa*
Bermuda buttercup	*Oxalis pes-caprae*
Blackberry (wild aggregates)	*Rubus fruticosus* agg.
Boxthorn	*Lycium ferocissimum*
Brown Bull Headed Catfish	*Ameiurus nebulosus*
Buddleja	*Buddleja davidii* (excluding hybrids)
Burdock	*Arctium minus*
Canada goose	*Branta canadensis*
Canary reed grass	Phalaris *arundinacea*
Cape honey flower	*Melianthus major*
Cape ivy	*Senecio angulatus*
Carex*	*Carex pendula*
Chilean flame creeper*	*Tropaeolum speciosum*
Chilean glory vine*	*Eccremocarpus scaber*
Chilean mayten*	*Maytenus boaria*
Common polypody*	*Polypodium vulgare*
European hedgehog	*Erinaceus europaeus*
False tamarisk*	*Myricaria germanica*
Feral cats	*Felis catus*
Feral deer: red (including hybrids), fallow	*Cervus elaphus, Dama dama*
Feral pigs	*Sus scrofa*
Feral goat (excluding feral goats within the Containment Area shown in Map 14 in Appendix 3)	*Capra aegagras hircus*
German ivy	*Senecio mikanioides*
Goat's rue	*Galega officinalis*
Hawthorn	*Crataegus monogyna*
Hemlock	*Conium maculatum*
Hieracium* (Hawkweed)	*Hieracium* spp.
Himalayan balsam	*Impatiens glandulifera*

Himalayan honeysuckle	*Leycesteria formosa*
Holly	*Ilex aquifolium*
Horsetail (rough)*	*Equisetum hyemale*
Horehound	*Marrubium vulgare*
Magpie	*Gymnorhina tibicen*
Mistflower	*Ageratina riparia*
Mustelids: ferret, stoat and weasel	*Mustela furo, M. ermine, M. nivalis*
Nardoo	*Marsilea mutica*
Parrots feather*	*Myriophyllum demersum*
Perrenial nettle	*Urtica dioica*
Pig's ear	*Cotyledon orbiculata*
Plectranthus*	*Plectranthus ecklonii Plectranthus grandis*
Plumeless thistle	*Carduus acanthoides*
Privet – Chinese	*Ligustrum sinense*
Ragwort	*Senecio jacobaea*
Rats: Norway, ship	*Rattus norvegicus, Rattus rattus*
Red-flowering currant	*Ribes sanguineum*
Rowan	*Sorbus aucuparia*
Rum cherry*	*Prunus serotine*
Sagittaria platyphylla*	*Sagittaria platyphylla*
Senegal tea*	*Gymnocoronis spilanthoides*
Sheeps bur	*Acaena agnipila*
Silver birch	*Betula pendula*
Spanish heath (excl. double flowered cultivars)	*Erica lusitanica*
Spur valerian	*Centranthus ruber*
Spurge laurel	*Daphne laureola*
St Johns wort	*Hypericum perforatum*
Sulphur-crested cockatoo	*Cactua galerita*
Sweet briar	*Rosa rubiginosa*
Sweet reed grass	*Glyceria maxima*
Sycamore	*Acer pseudoplatanus*
Tree Lucerne	*Chamaecytisus palmensis / Cytisus proliferus*
Tree lupin	*Lupinus arboreus*
Variegated thistle	*Silybum marianum*
Vipers bugloss	*Echium vulgare*
Wasp German and European	*Vespula germanica Vespula vulgaris*
Wild cotoneaster*	*Cotoneaster glaucophyllus, C. franchetii*
Wild elaeagnus	*Elaeagnus x reflexa*

* Unwanted organism

Note 1: The above organisms are not declared pests under this Plan and occupiers or other persons will not be subject to any obligations under the Plan or under the Act. However, those above that have unwanted organism status are subject to statutory obligations already in place under the Act (section 52 and section 53) that prevent the sale, propagation and distribution of unwanted organisms by any person.

Note 2: All organisms with 'unwanted organism' status, including those not listed above but contained in the Unwanted Organism Register administered by Ministry for Primary Industries (see www.mpi.govt.nz) may be considered as OoI and could be candidates for control under future site-led programmes.

Appendix 3 Modified McLean and Guilford Scales

Guilford Wallaby Infestation Scale

This scale assesses wallaby population levels.

1. No faecal or track sign seen but area known to be within feral range of wallabies.
2. Infrequent faecal sign seen. Track sign absent. One or two pellet groups seen when traversing 100 metres. Unlikely to see any wallabies.
3. Frequent faecal and track sign seen, but only in isolated pockets. Likely to see some wallabies.
4. Faecal and track sign very obvious and consistent. Tracks well used. High probability of seeing wallabies.
5. High densities of faecal and track sign distributed almost uniformly. Tracks well used. High probability of seeing wallabies.

Modified McLean Rabbit Infestation Scale

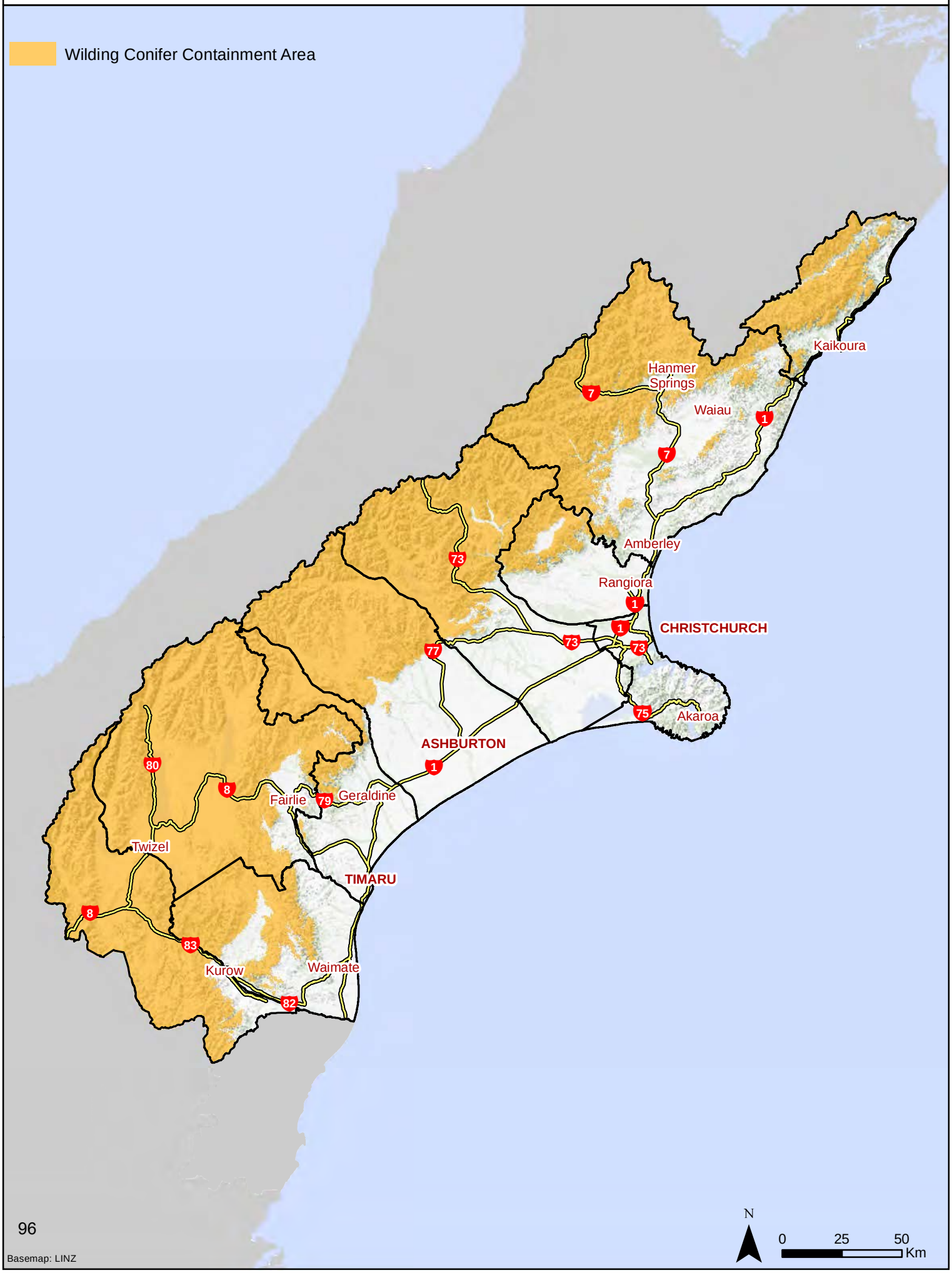
This scale assesses rabbit population levels.

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

Appendix 4 Maps

Table of Contents – Pest Area & Progression

Map 1 Wilding Conifer: Progressive Containment Programme



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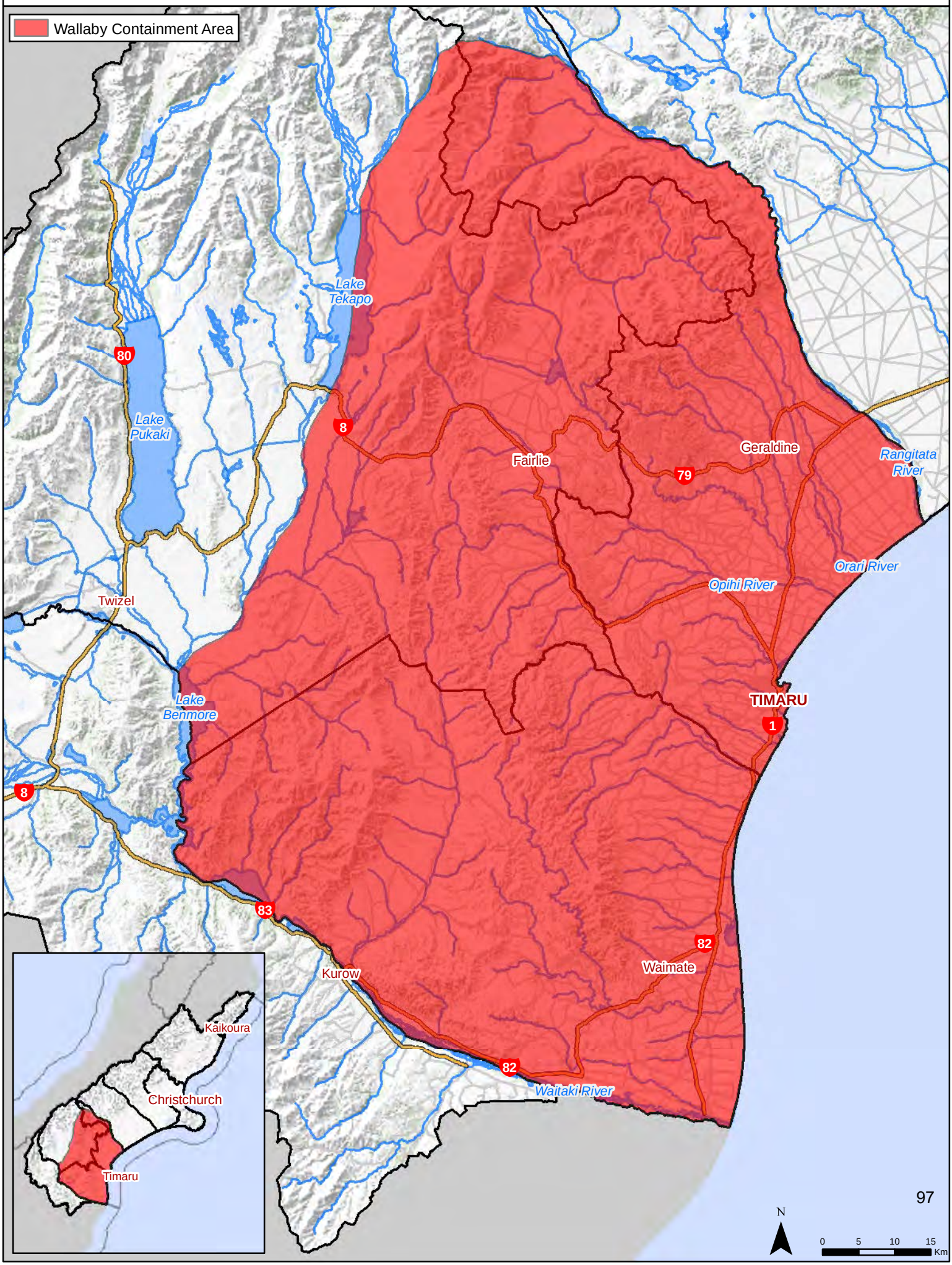
Basemap: LINZ

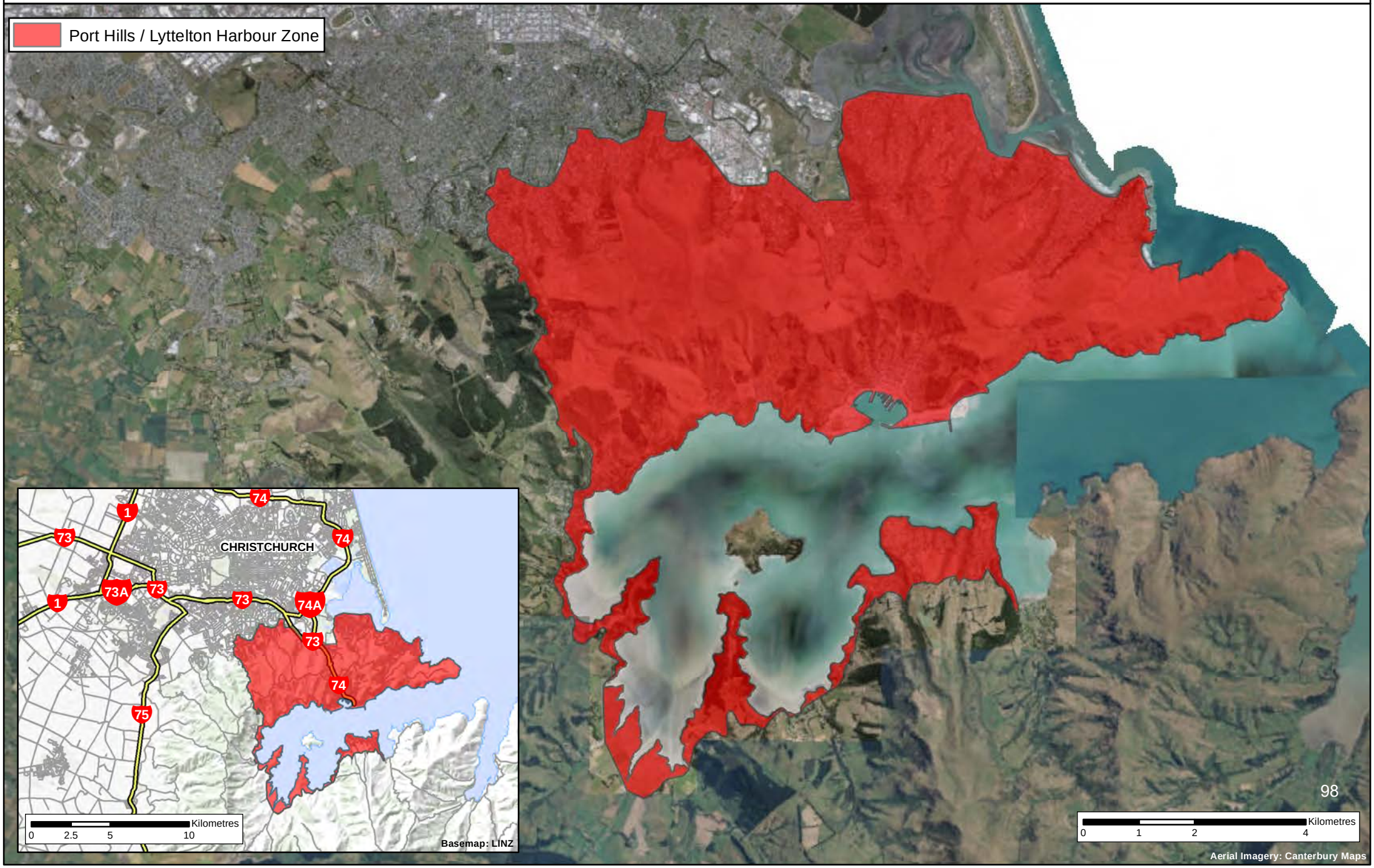
Map 2 Wallaby:
Sustained Control Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

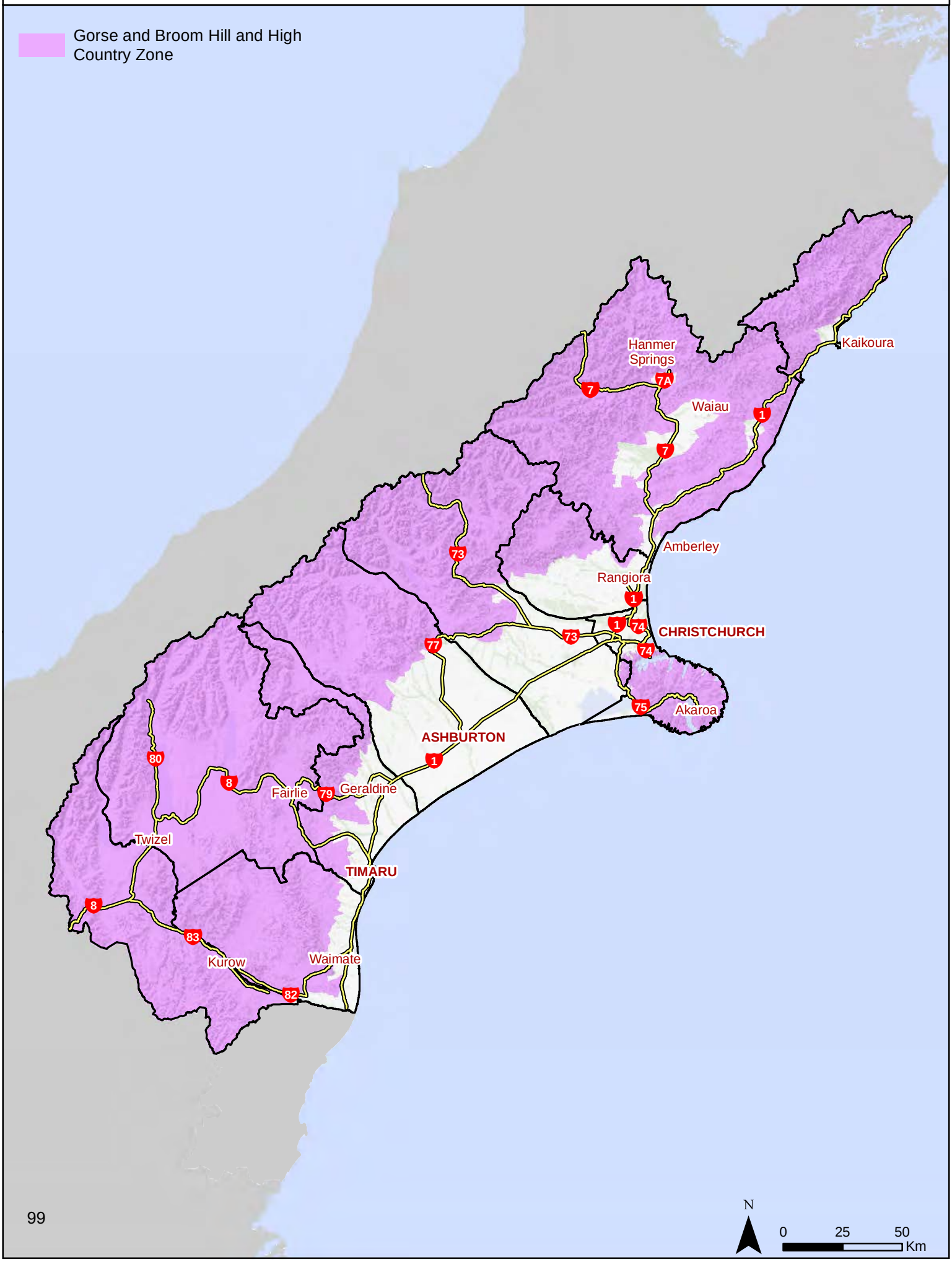


Map 3 Boneseed: Sustained Control Programme

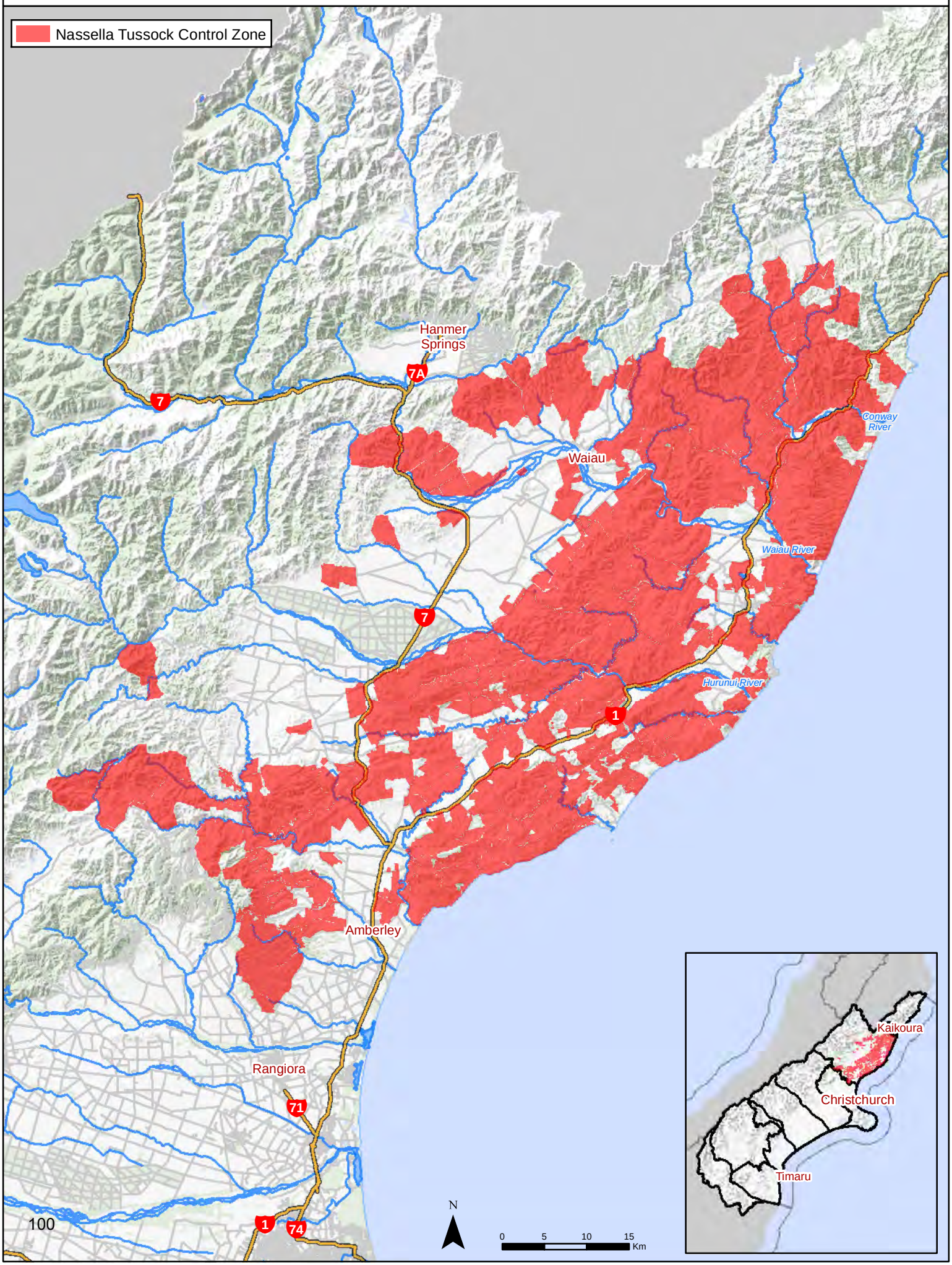
Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha



Map 4 Gorse and Broom: Sustained Control Programme



Map 5 Nassella Tussock: Sustained Control Programme



Map 6.1 Banana Passionfruit
Gore Bay: Site-led Programme

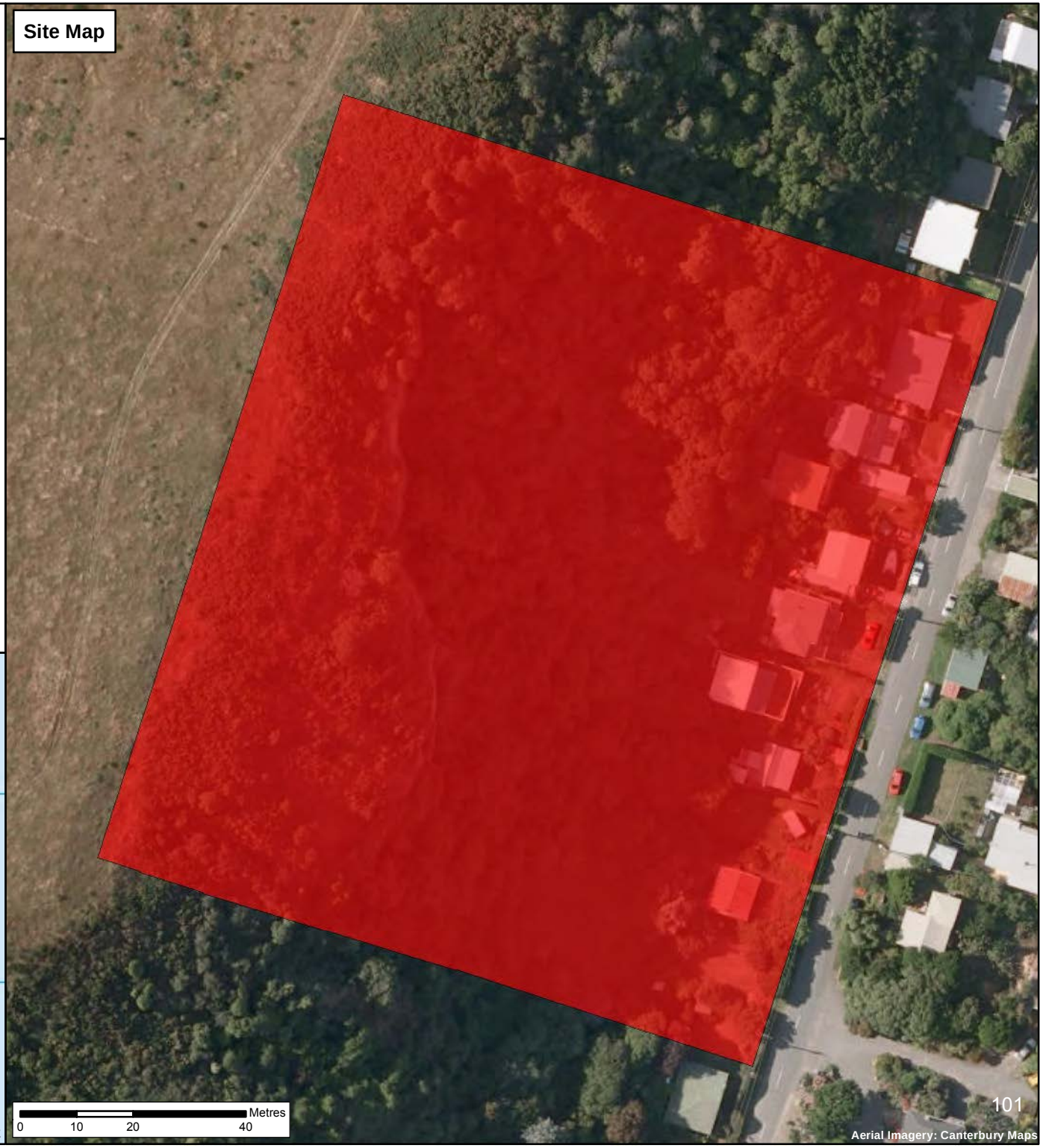
Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Moody Street, Gore Bay, Cheviot.
Grid Reference (NZTM): Easting: 1625193 / Northing: 5254879
Site boundary: The site covers several properties along Moody Street and part of the DOC reserve located behind the township.
Site description: The site is covered in native bush and extends between the roadside and the top of the cliffs along Moody Street.
Legal description: Various
Values being protected: Biodiversity at the site and nearby
Amount of reduction over 10 years: 50%
Reason for site-led programme: The banana passionfruit at this location is a seed source to an area that has biodiversity value and borders a large area of DOC reserve.
Site status: Active – ongoing programme of control work.

Overview Map

Site Map

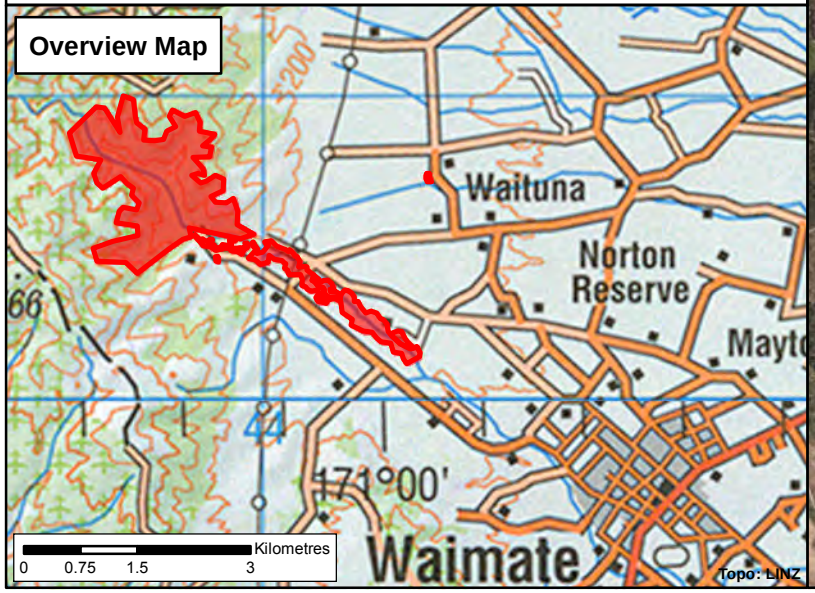


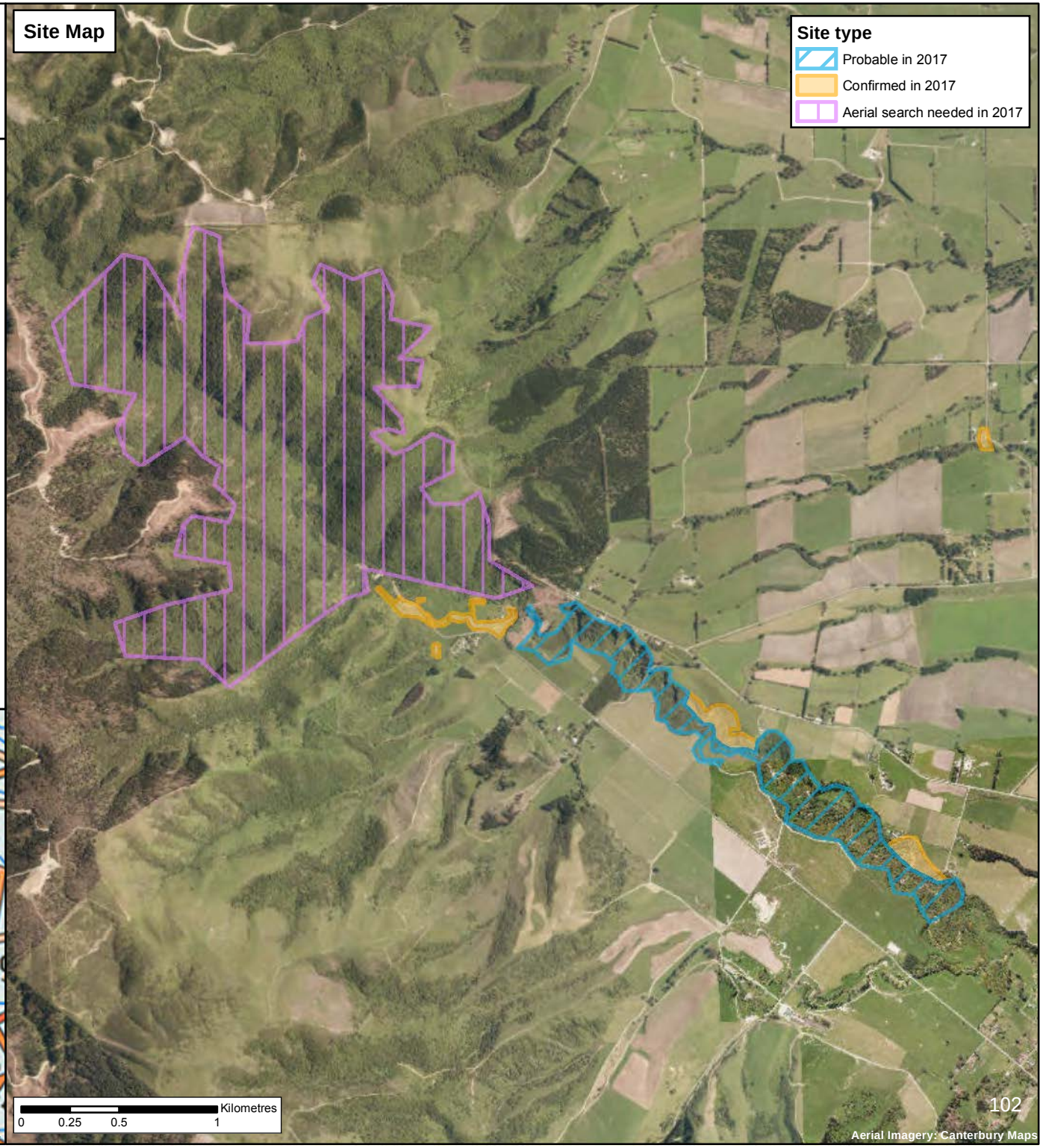
Map 6.2 Banana Passionfruit Kelsey's Bush: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Kelsey's Bush and surrounding properties, Waimate
Grid Reference (NZTM): Easting: 1439143.44 / Northing: 5048211.54
Site description: A gully of native trees and bushes with a stream running through it. Surrounded by a lot of private land with pockets of native bush. The stream runs eastward and is surrounded by native bush for about 3 km past Kelsey's Bush. One side is a Blakely Pacific block. The banana passionfruit is spreading downstream and there are a few outlying pockets a small distance from the stream running from Kelsey's Bush.
Legal description: Valuation Numbers: 2515034301, 2515031400, 2514015901, 2515034300, 2515031501, 2515031100, 2515034600, 2515034204, 2515031800, 2515031601, 2515034203, 2515030800
Values being protected: Biodiversity
Amount of reduction over 10 years: 50%
Reason for site-led programme: The bush is an important part of the community with an abundance of native bird life and native tree species. The community and key stakeholders have indicated an interest in helping to protect the native bush.



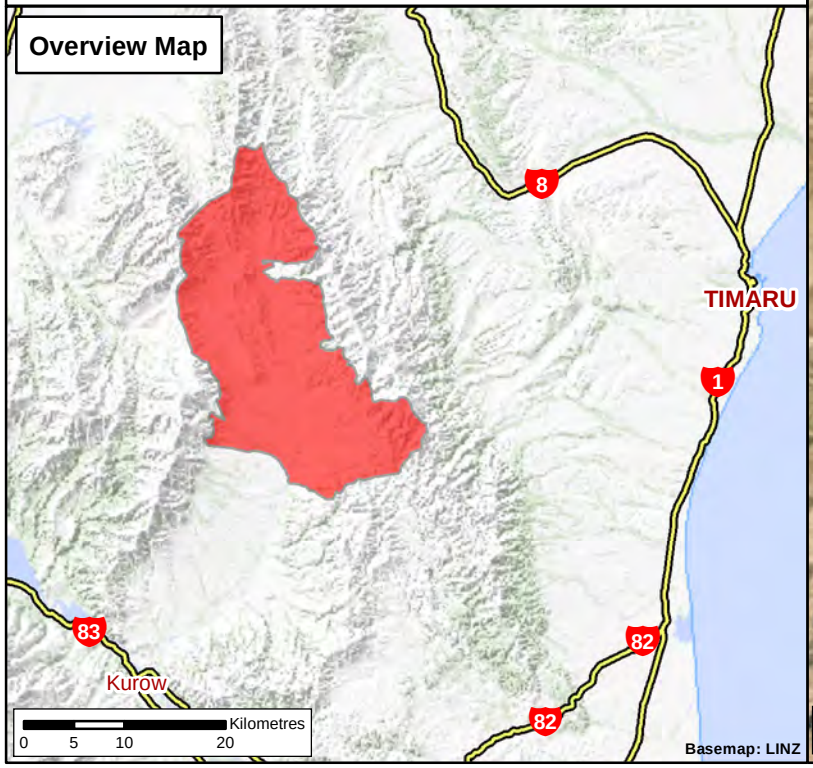


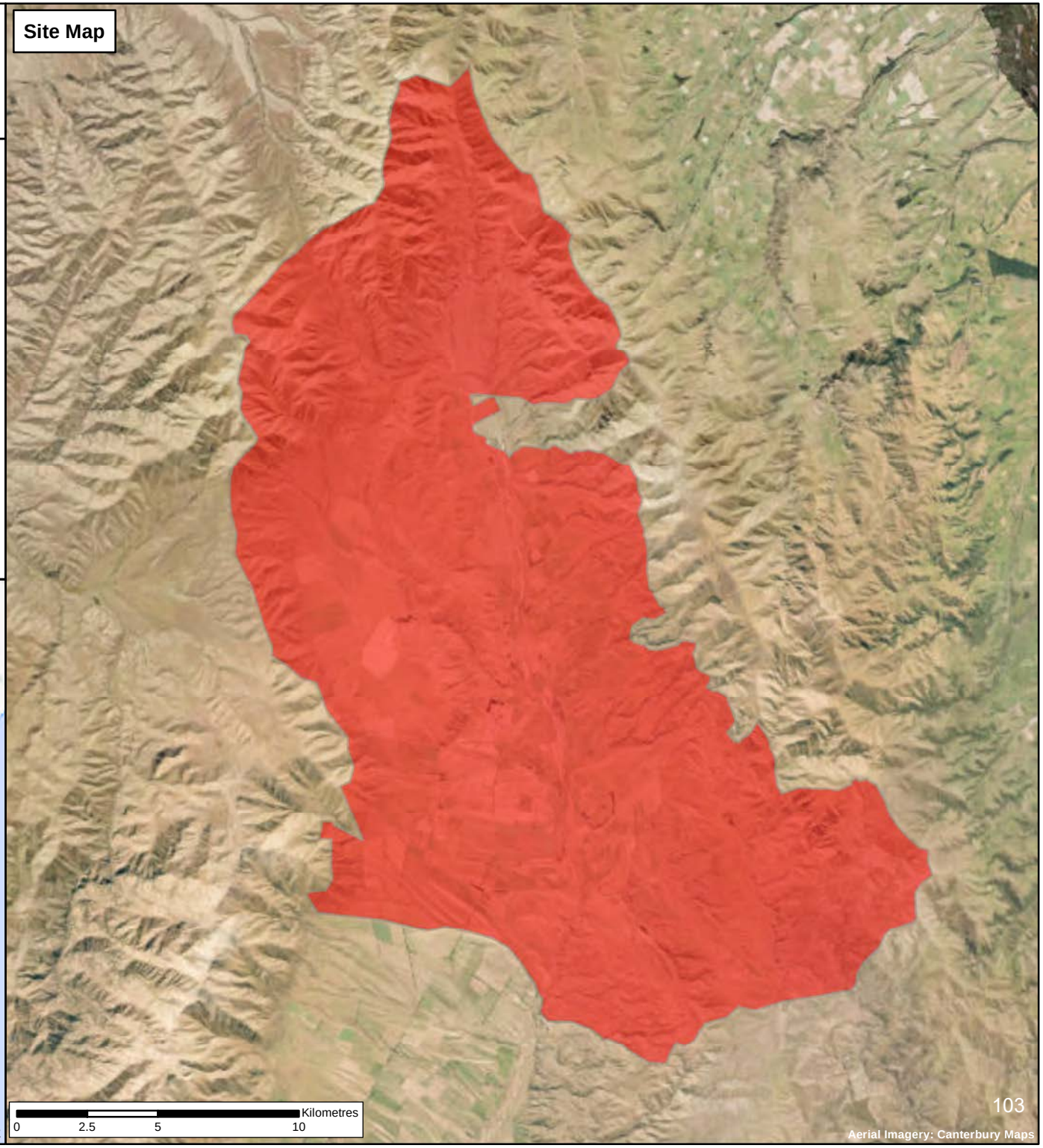
Map 7.1 Gorse and Broom
Hakataramea: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Upper Hakataramea catchment
Grid Reference (NZTM): Easting: 1413086 / Northing: 5077194
Site boundary: Various
Site description: Upper catchment excluding Crown land
Legal description: Various
Values being protected: Biodiversity and production
Amount of reduction over 10 years: 10%
Reason for site-led programme: To manage discreet isolated infestations greater than 50m^2.





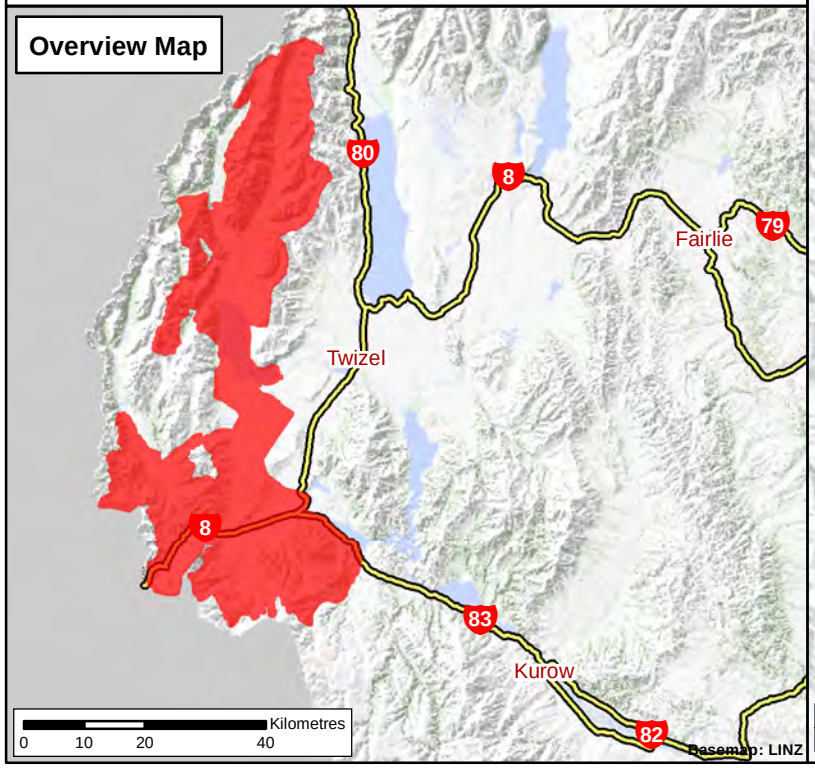
Map 7.2 Gorse and Broom Ohau: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

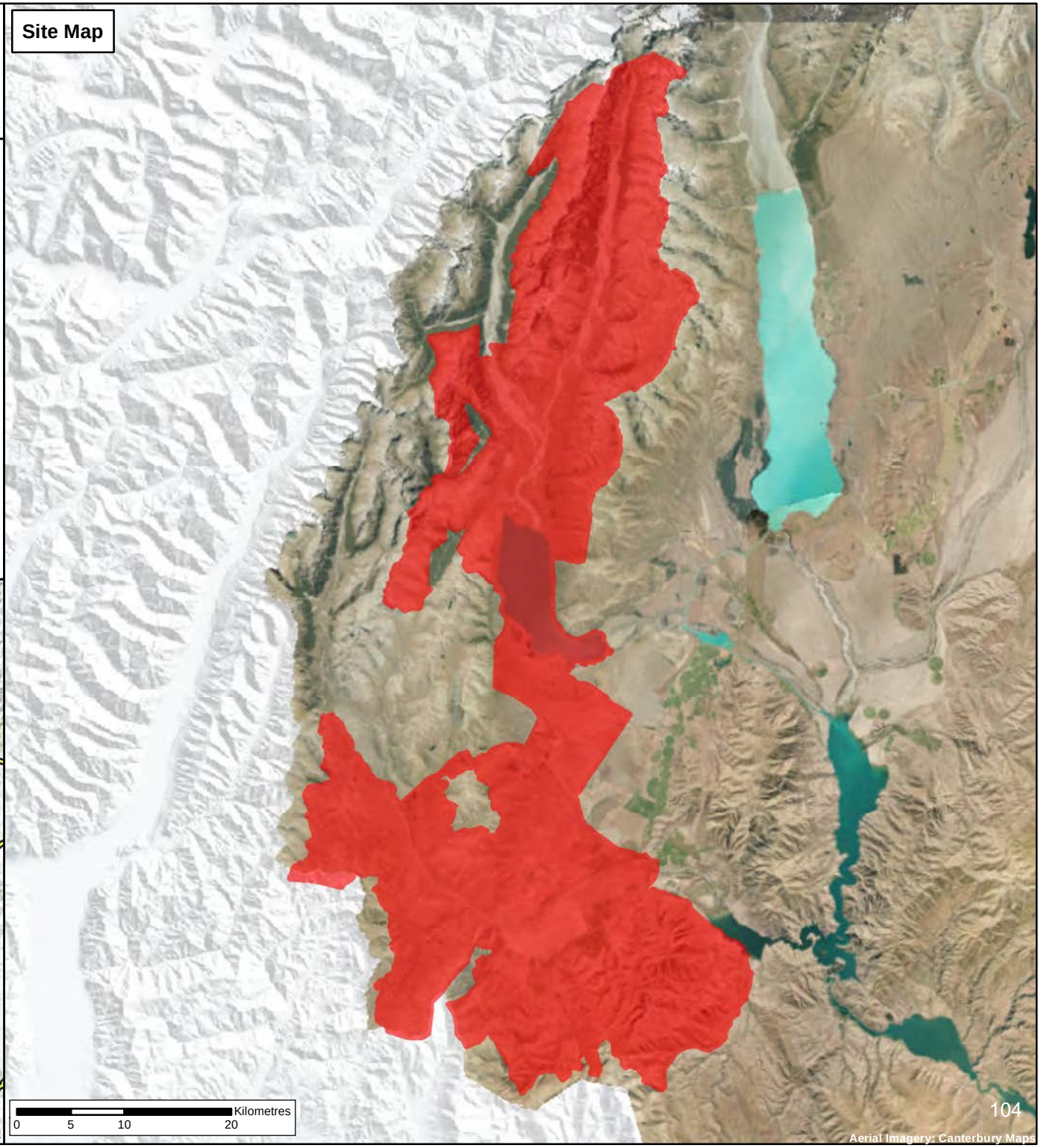
Site Description

Location of site: Upper Ohau catchment
Grid Reference (NZTM): Easting: 1348812 / Northing: 5096813
Site boundary: Various
Site description: Upper catchment excluding Crown land
Legal description: Various
Values being protected: Biodiversity and production
Amount of reduction over 10 years: 10%
Reason for site-led programme: To manage discreet isolated infestations greater than $50m^2$.

Overview Map



Site Map

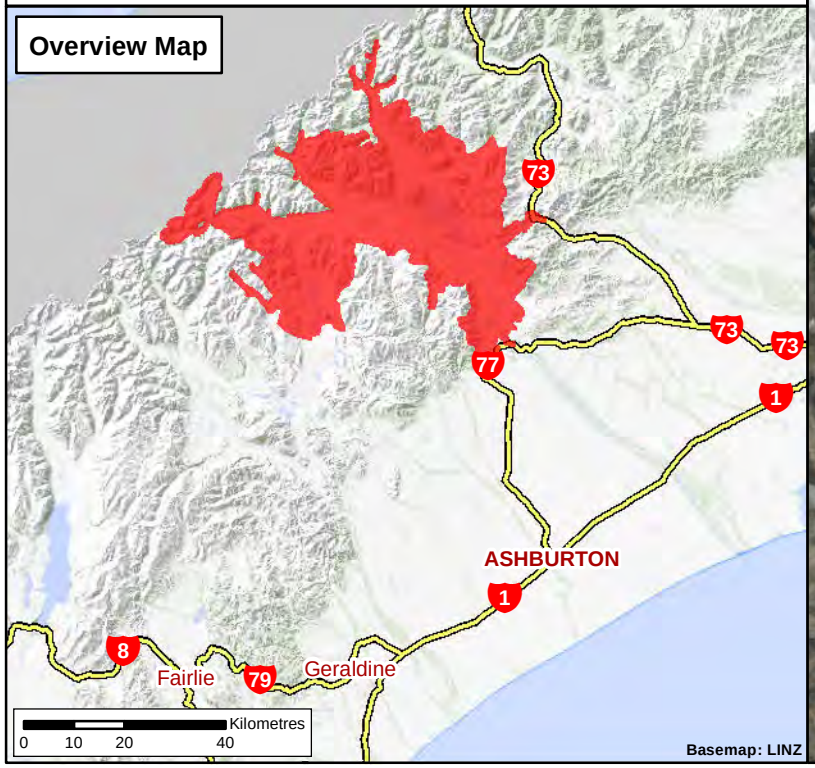


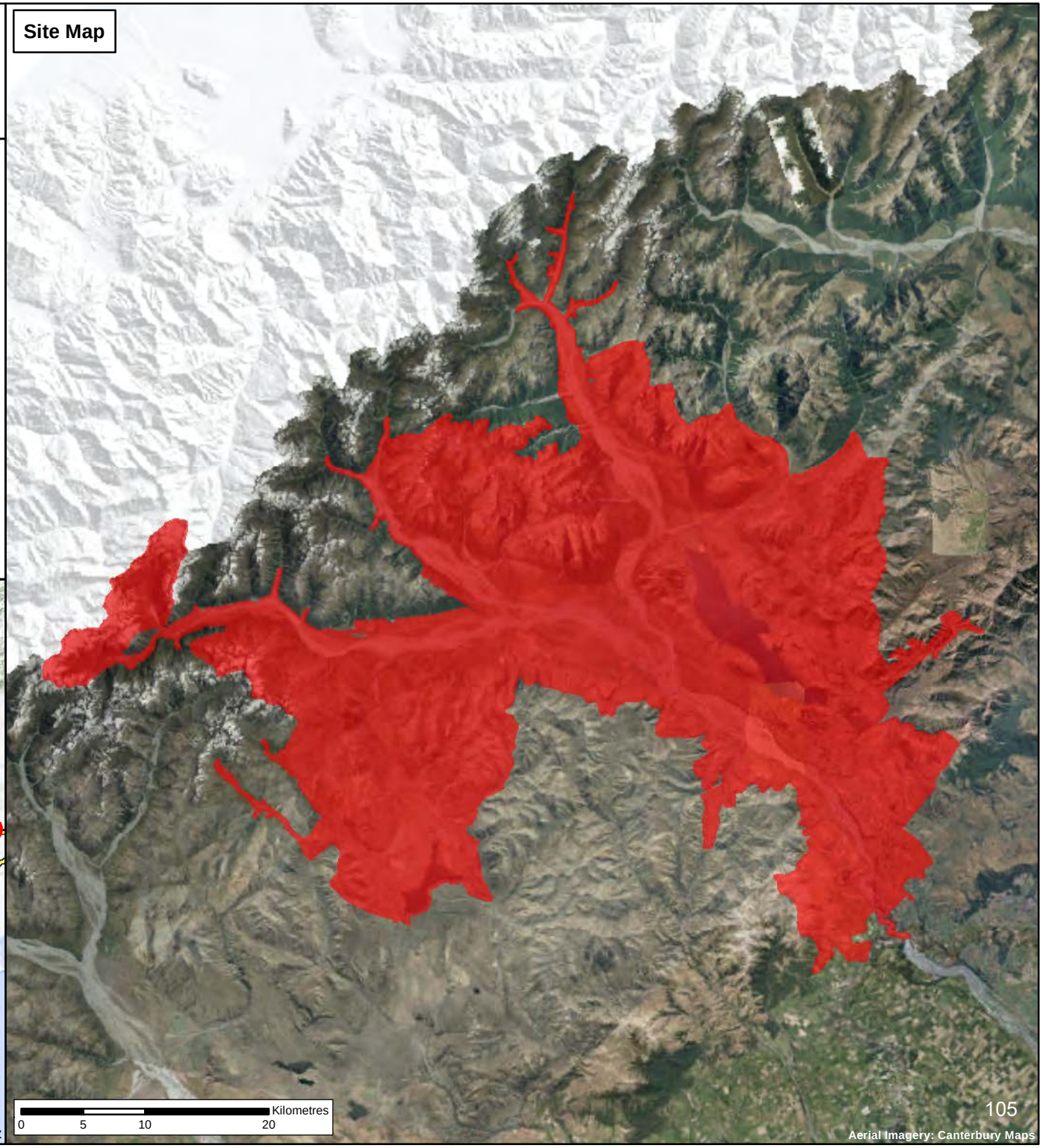
Map 7.3 Gorse and Broom
Rakaia: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Rakaia upper catchment
Grid Reference (NZTM): Easting: 1470090 / Northing: 5208752
Site boundary: Various
Site description: Upper catchment excluding Crown land
Legal description: Various
Values being protected: Biodiversity and production
Amount of reduction over 10 years: 10%
Reason for site-led programme: To manage discreet isolated infestations greater than 50m^2.





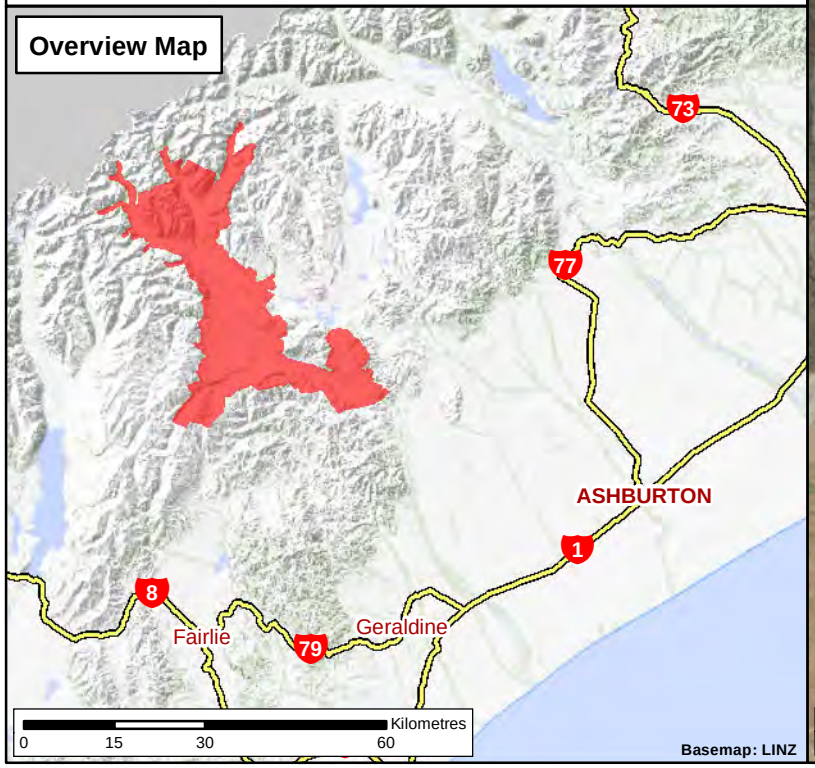
Map 7.4 Gorse and Broom
Rangitata: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

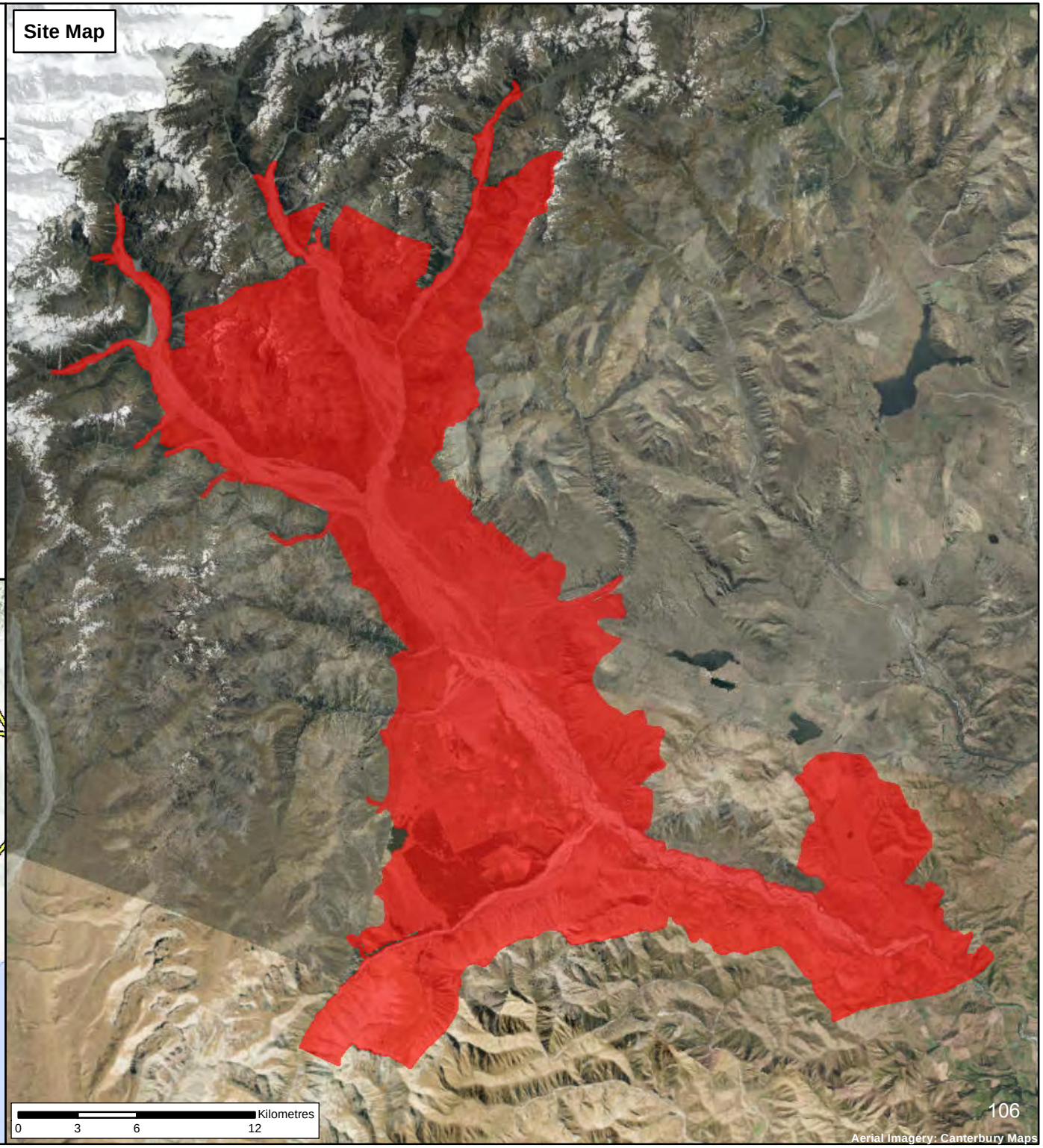
Site Description

Location of site: Rangitata Upper Catchment
Grid Reference (NZTM): Easting: 1430846 / Northing: 5169171
Site boundary: Various
Site description: Upper catchment excluding Crown land
Legal description: Various
Values being protected: Biodiversity and production
Amount of reduction over 10 years: 10%
Reason for site-led programme: To manage discreet isolated infestations greater than 50m^2

Overview Map



Site Map



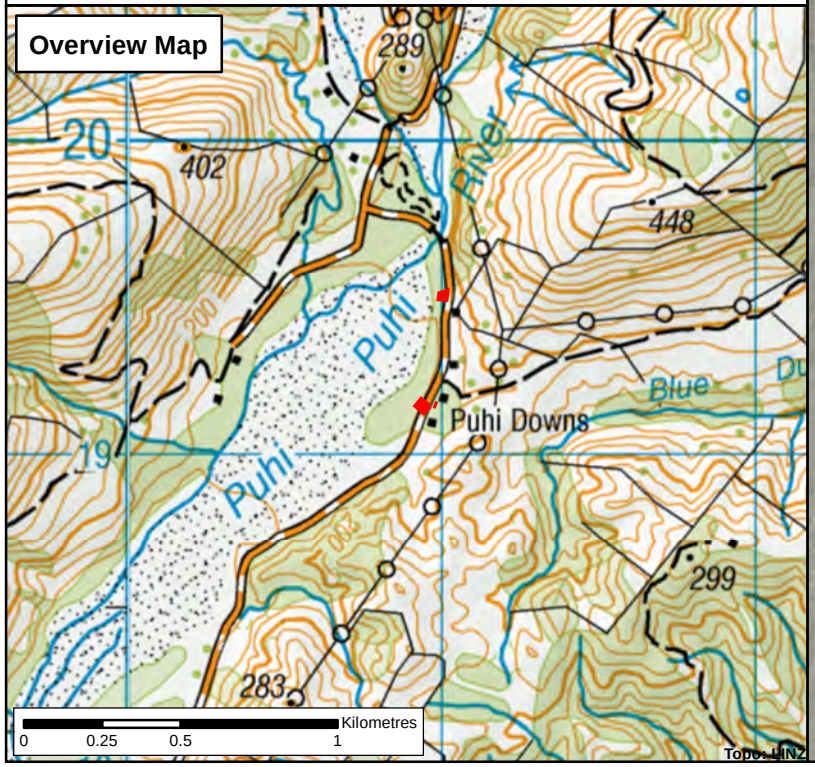
Map 8 Cathedral Bells: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Puhi Puhi Valley
Grid Reference (NZTM): Easting: 1660941 / Northing: 5319156
Site description: Puhi Puhi River
Values being protected: Biodiversity
Amount of reduction over 10 years: 30%
Reason for site-led programme: Cathedral bells is of very limited distribution in Canterbury and poses an immediate threat to biodiversity values in the site vicinity. It is a future threat to Canterbury if left to spread.

Overview Map



Site Map

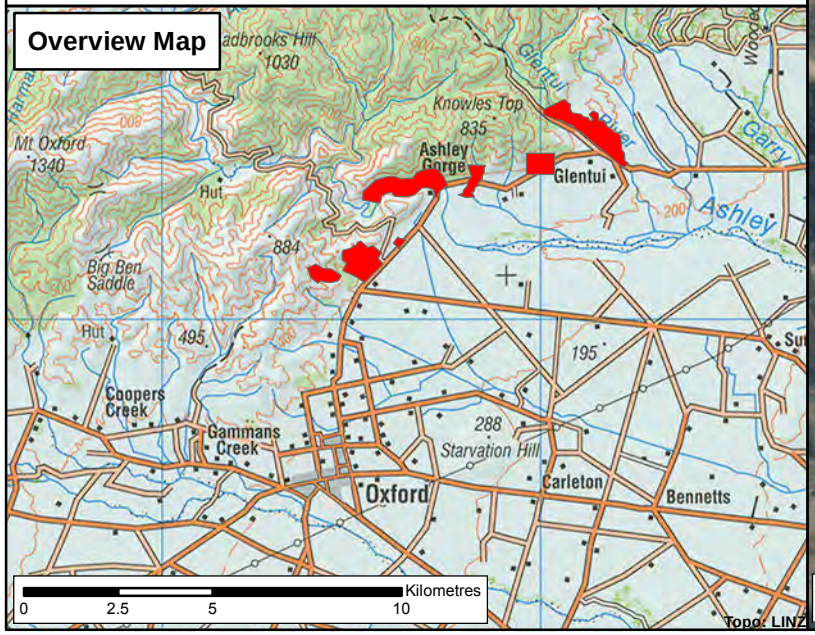
Map 9.1 Old Man's Beard Ashley River Catchment: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

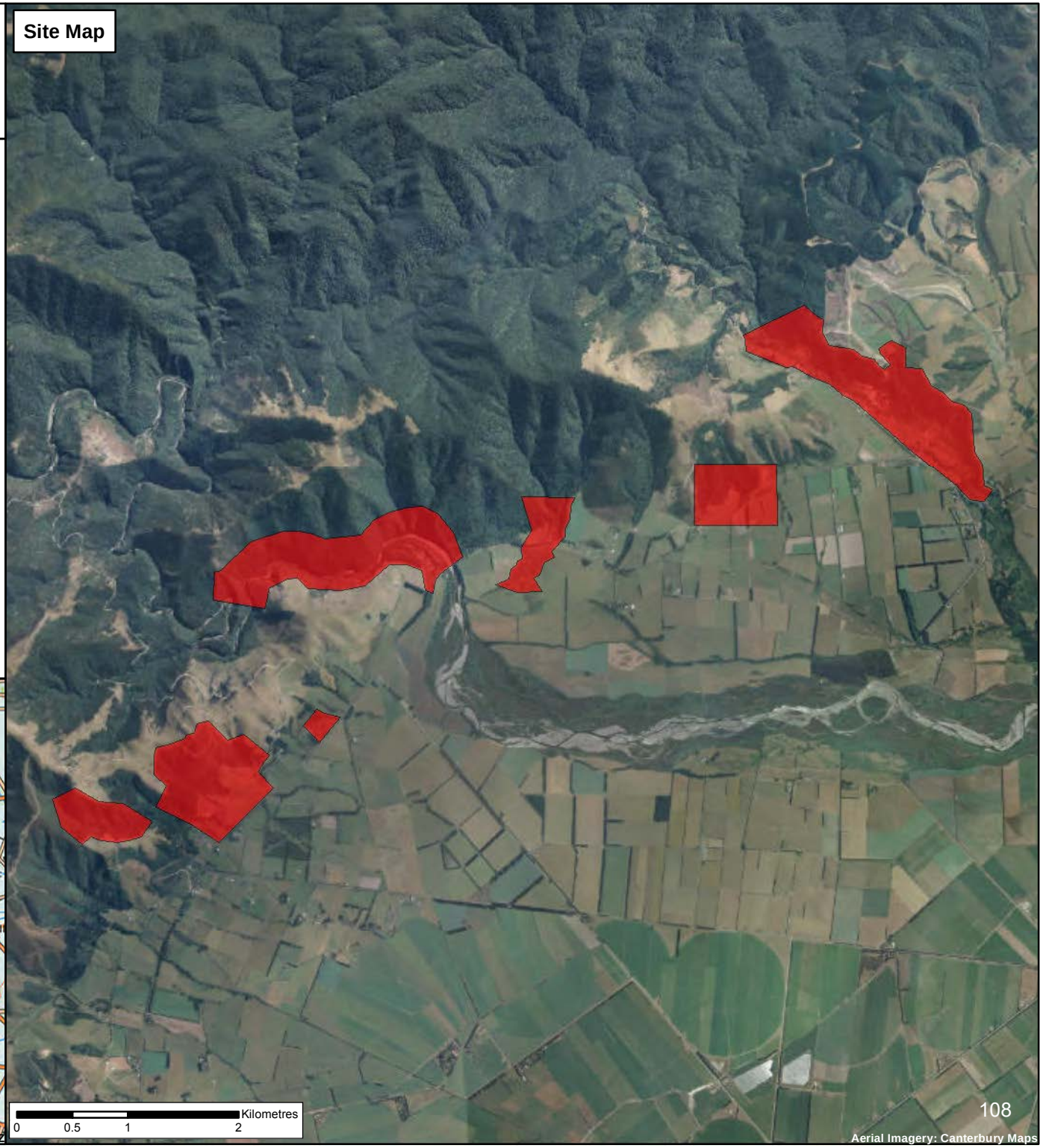
Site Description

Location of site: Several sites around the Ashley River catchment
Grid Reference (NZTM): Easting: 1639379 / Northing: 5292029
Site boundary: The site boundary crosses through several properties located around the Te Moto Moto Stream bed and adjacent to Birches Road.
Site description: The site covers the stream bed of the Te Moto Moto stream. This site has two residential properties on the eastern edge, however the majority is covered in native bush.
Legal description: Various
Values being protected: Biodiversity
Amount of reduction over 10 years: 75%
Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring areas by either wind-borne means or transport downstream. This catchment contains large areas of biodiversity that have significant value.

Overview Map



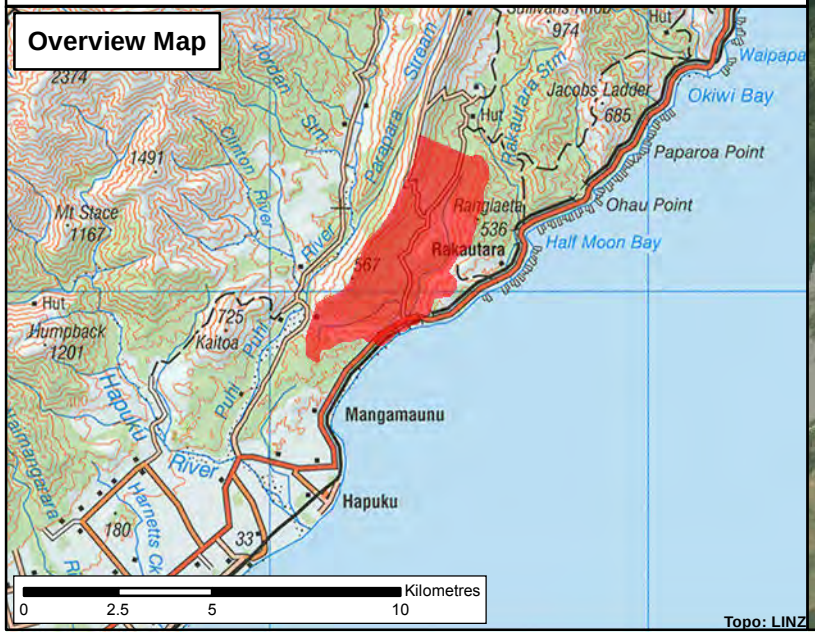
Site Map

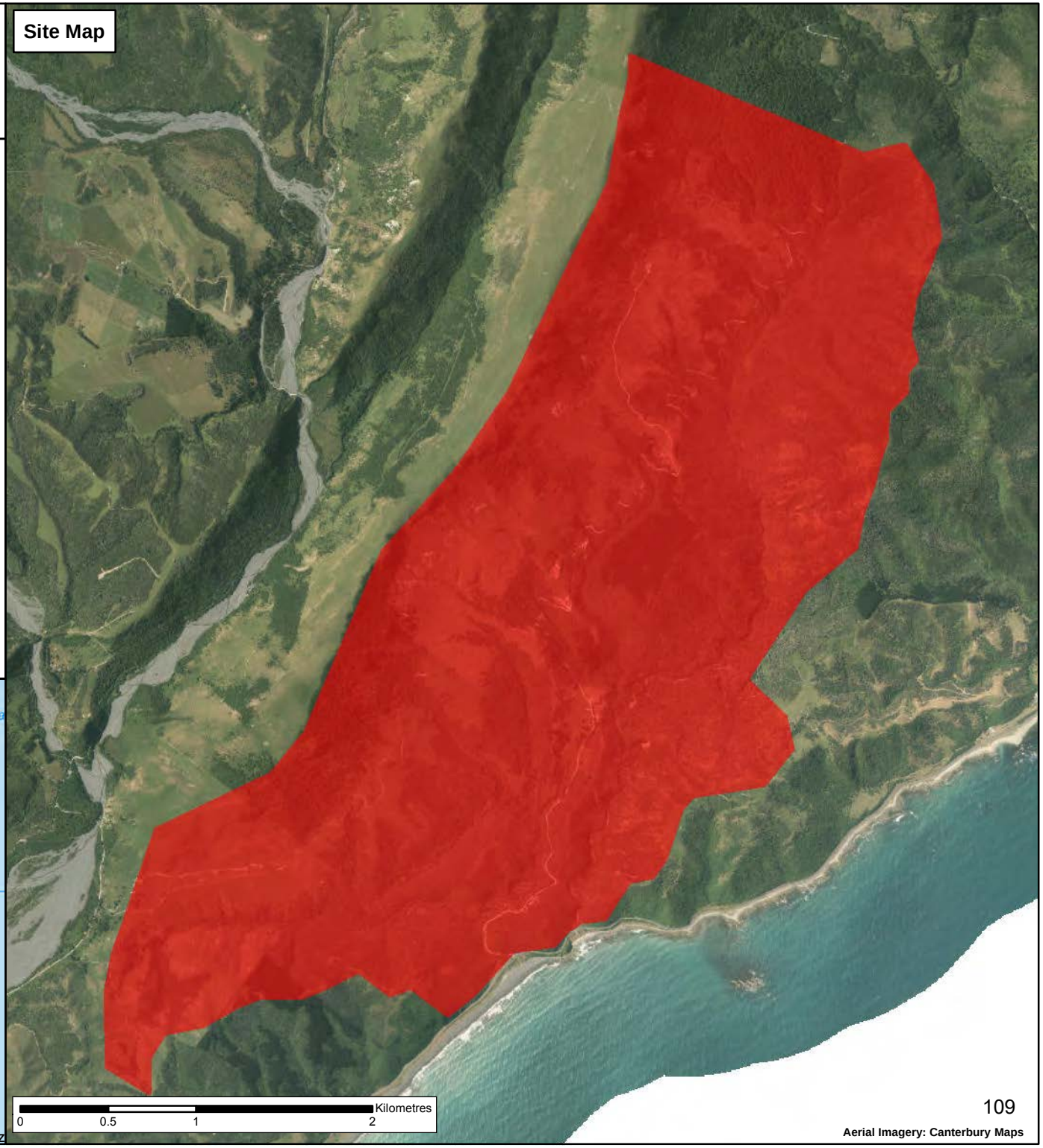


Map 9.2 Old Man's Beard
Blue Duck Valley: Site-led Programme

Site Description

Location of site: Blue Duck Valley Road
Grid Reference (NZTM): Easting: 1663921 / Northing: 5321376
Site boundary: The site boundary encompasses all land within the Blue Duck River catchment.
Site description: The site covers a river catchment covered in a mixture of farmland and native bush. The majority of the catchment is covered in native bush that extends up the valley into the ranges.
Values being protected: Biodiversity
Amount of reduction over 10 years: 75%
Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring areas by either wind-borne means or transport down streams. This catchment contains large areas of biodiversity that have significant value.
Site status: Active – programme of control proposed

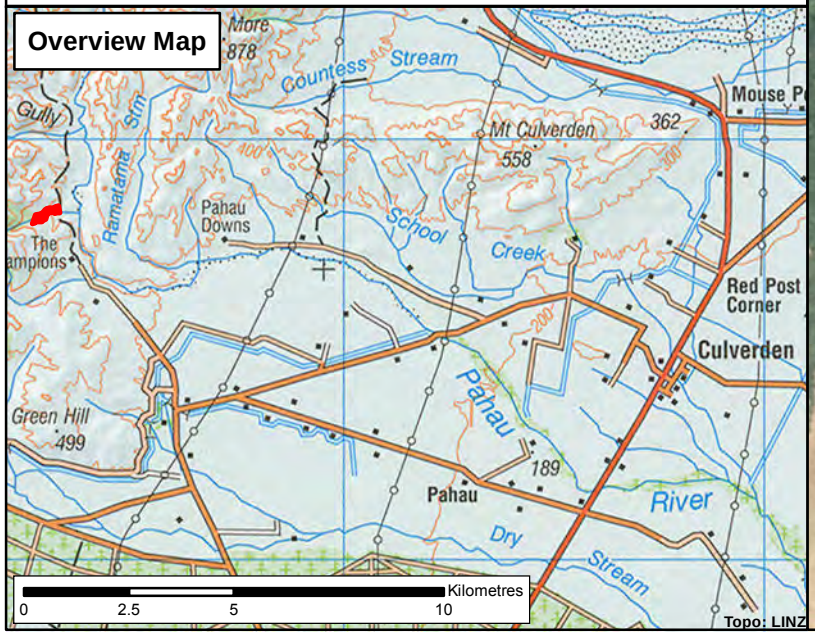


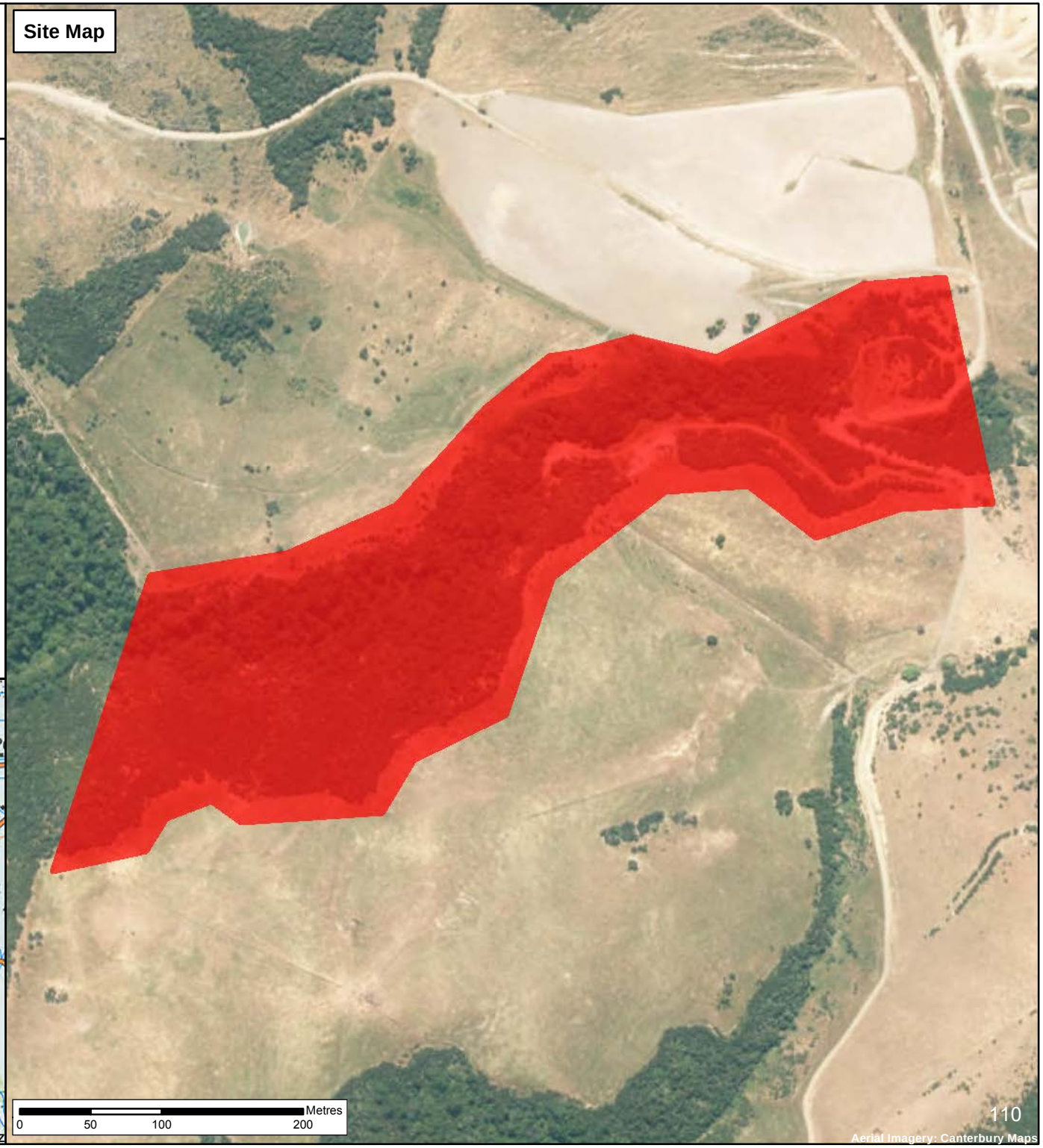


Map 9.3 Old Man's Beard
Cascade Road: Site-Led Programme

Site Description

Location of site: 409 Cascade Road (VNZ# 2129016801).
Grid Reference (NZTM): Easting: 1572902 / Northing: 5268213
Site boundary: The site covers a small portion of the property at 409 Cascade Road
Site description: The site covers both banks of lower Awatui Stream where there is an area of regenerating native bush. The site stretches from the Pahau River to the beginning of a large area of regenerating native bush.
Legal description: PT LOT 2 DP 3550 II III MANDAMUS SD
Values being protected: Biodiversity
Amount of reduction over 10 years: 75%
Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring areas by either wind-borne means or transport downstream. This site has biodiversity value and borders a large area of native forest.
Site status: Active – programme of control ongoing.

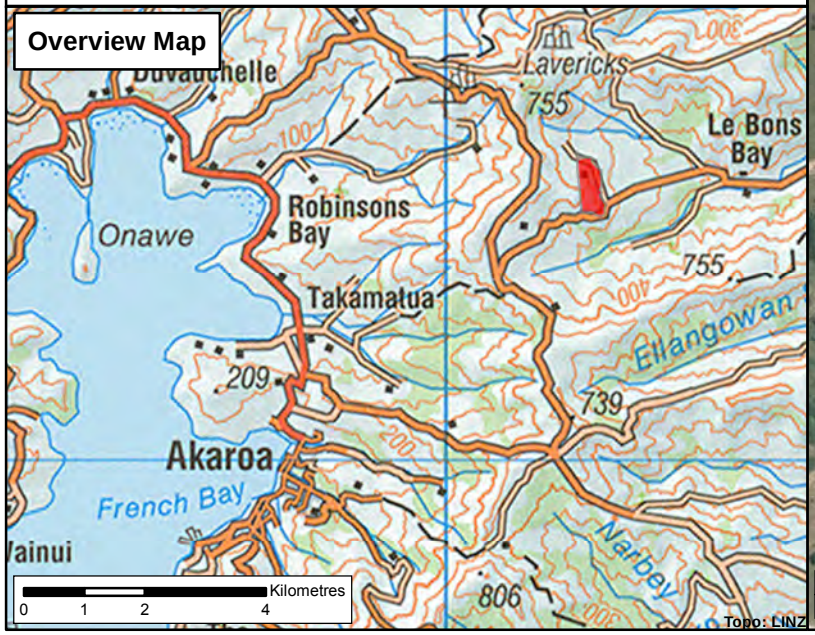




Map 9.4 Old Man's Beard
Dawbers Road: Site-led Programme

Site Description

Location of site: 63 Dawbers Road, Le Bons Bay, Akaroa (VNZ# 2391002300) .
Grid Reference (NZTM): Easting: 1602452 / Northing: 5154357
Site boundary: The site boundary is the property boundary at 63 Dawbers Road – Le Bons Bay
Site description: The site covers an area of farmland that is predominantly covered in pasture. It is bordered by the Dawbers Road and Le Bons Bay Road.
Legal description: Pt RSs 14163, 14163, 14163X, 19234 Canterbury Dist, RSs 19234X, 19235, 19235 Canterbury District
Values being protected: Biodiversity
Amount of reduction over 10 years: 75%
Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring properties and surrounding areas that have biodiversity value.
Site status: Active – programme of control ongoing



Map 9.5 Old Man's Beard
Governors Bay: Site-led Programme

Site Description

Location of site: The site is based around the communities in Governors Bay extending from north of the Governors Bay township to south of Allendale.

Grid Reference (NZTM): Easting: 1571336 / Northing: 5169841

Site boundary: The eastern boundary follows the foreshore and the western boundary follows the summit. At its northern extent the boundary follows the ridge line from 399 Governors Bay Road to the summit. At the southern extent it follows Bamford's Road. The site boundary covers several hundred properties.

Site description: The site is based around the townships and properties located in Governors Bay. It is covered in a mixture of residential properties, grazed farmland, Christchurch City Council reserves, DOC reserves and covenanted land. The area contains some large areas of mature and regenerating native forest.

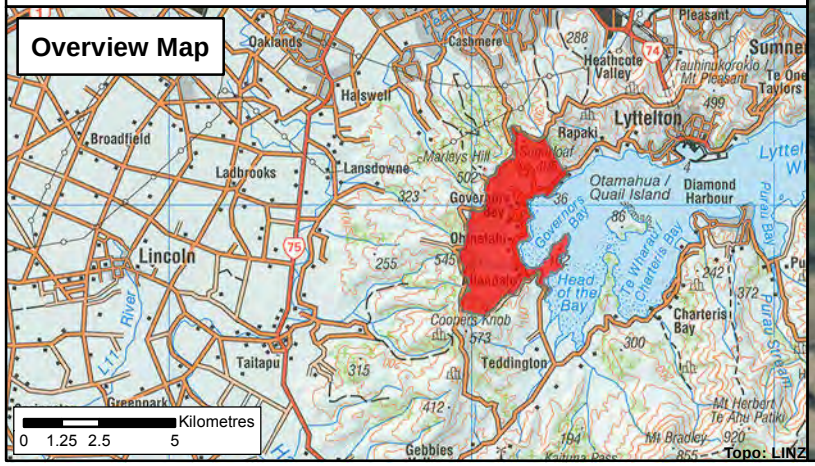
Legal description: Various

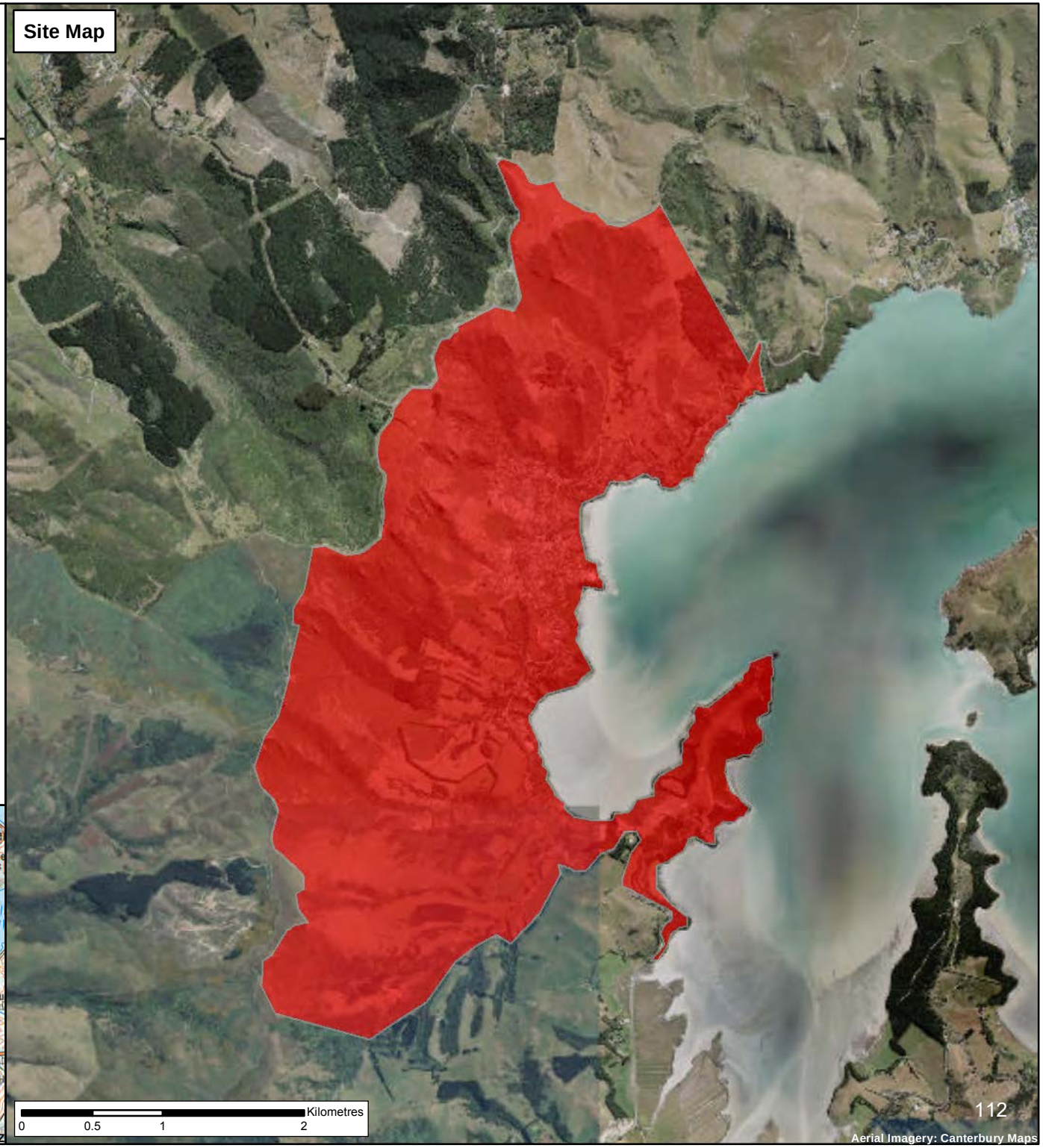
Values being protected: Biodiversity

Amount of reduction over 10 years: 75%

Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring properties and surrounding areas that have biodiversity value. In the past significant resources have been invested in this area in an effort to reduce the impact of old man's beard.

Site status: Active – programme of control ongoing through the Christchurch City Council, Summit Road Society, Environment Canterbury and local pest control groups.

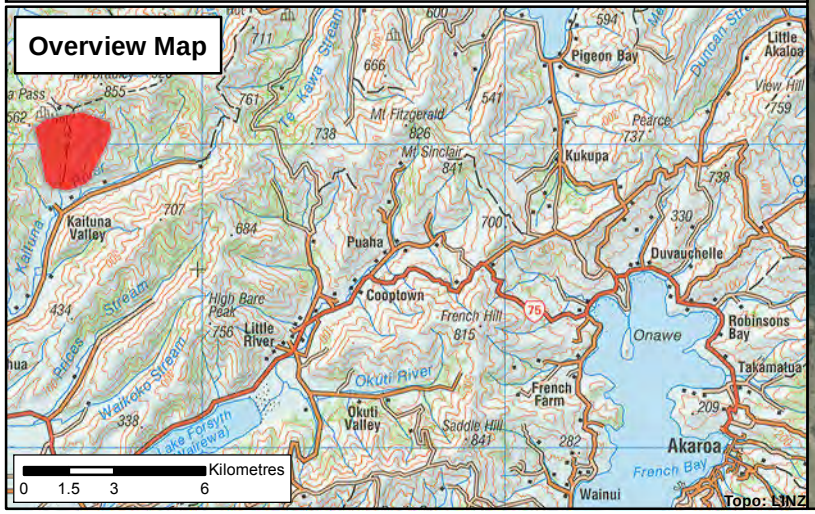


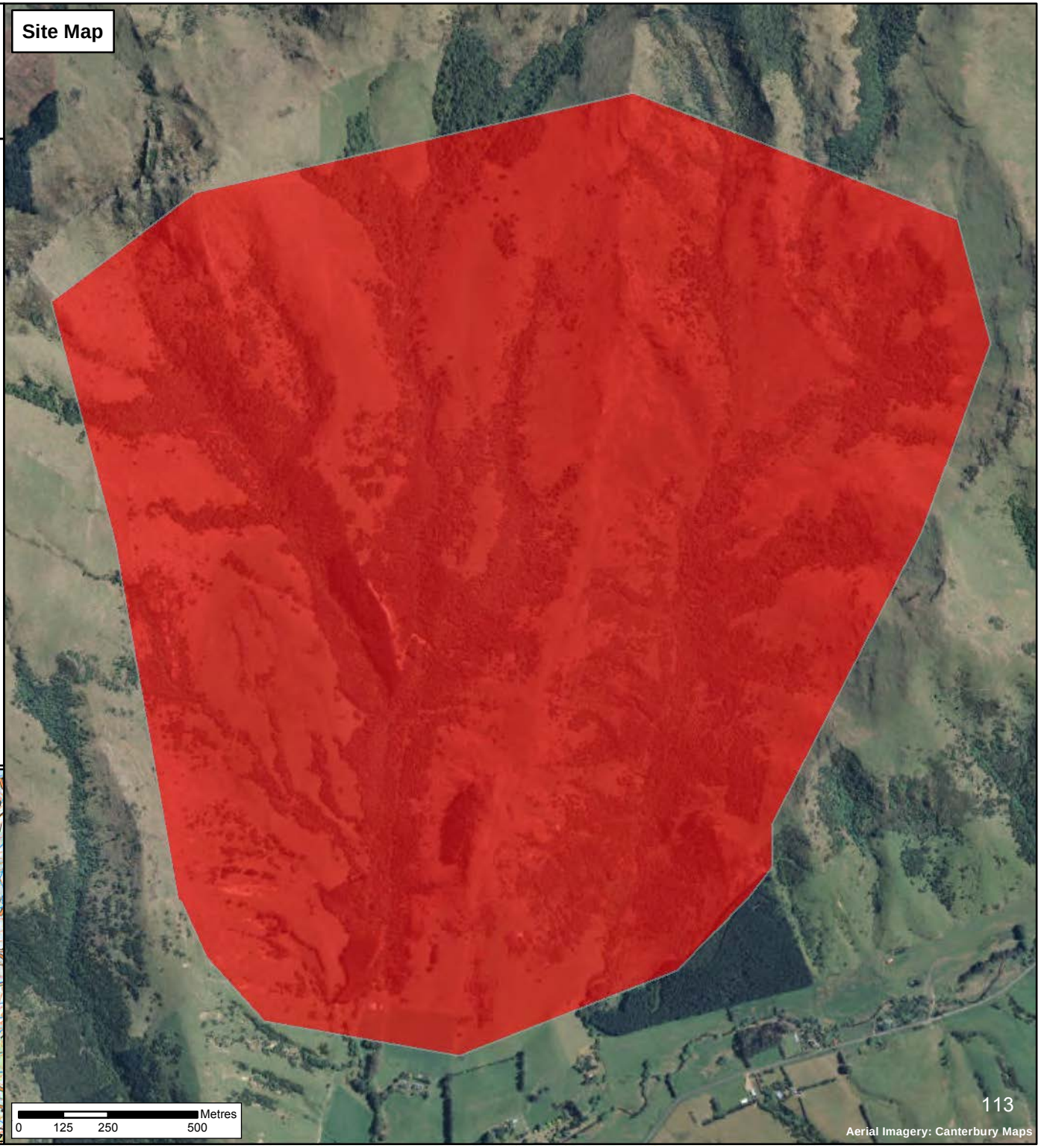


Map 9.6 Old Man's Beard
Kaituna Pass: Site-led Programme

Site Description

Location of site: The site is based around the Kaituna Pass Road, Kaituna Valley, Banks Peninsula (VNZ# 2386212802). This is also the location of the Pack Horse Track.
Grid Reference (NZTM): Easting: 1575670 / Northing: 5159708
Site boundary: The site boundary covers several properties and gullies leading from the Kaituna Valley floor up to near the Kaituna Pass saddle.
Site description: The site is based around the Kaituna Pass Road and is covered in a mixture of grazed land and stands of regenerating native forest. There are 2 major streams and several tributaries located within the gullies of this site.
Values being protected: Biodiversity
Amount of reduction over 10 years: 75%
Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring properties and surrounding areas that have biodiversity value, including DOC reserves. The old man's beard can also act as a seed source to the streams and tributaries which flow down to the Kaituna River.
Site status: Active – programme of control ongoing

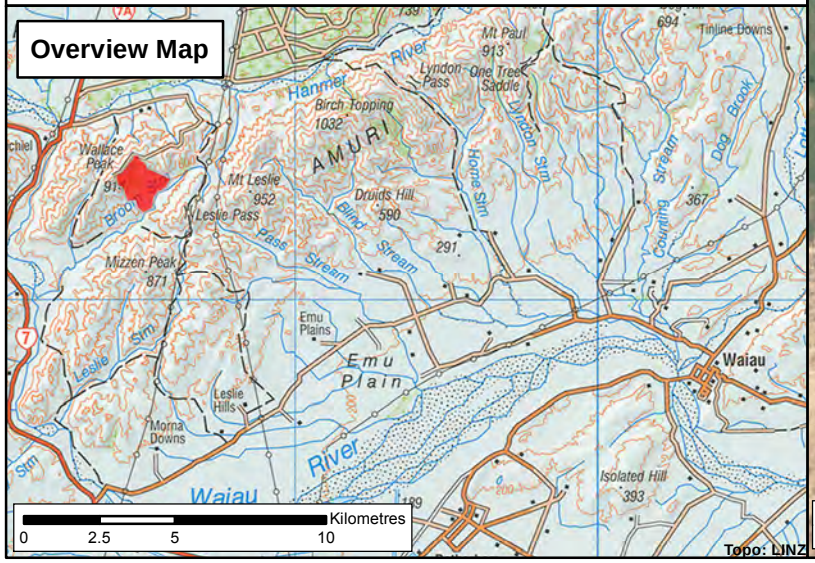


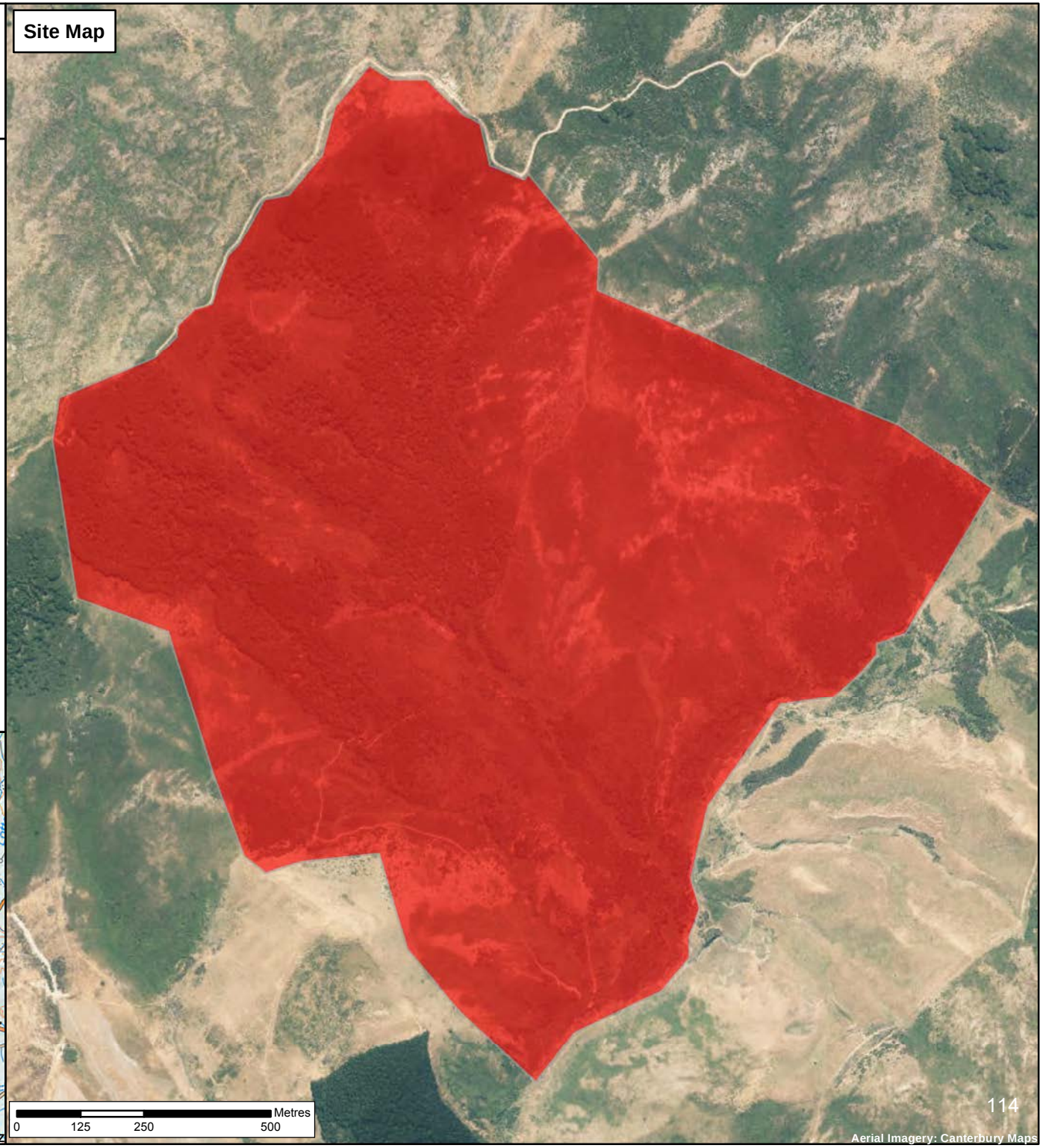


Map 9.7 Old Man's Beard
Medway Road: Site-led Programme

Site Description

Location of site: 314 Medway Road (VNZ# 2125218500B)
Grid Reference (NZTM): Easting: 1585081 / Northing: 5283437
Site boundary: The site covers only a small portion of the property at 314 Medway Road
Site description: The site covers gullies and tributaries for the Broom Stream. The gullies lead up to Wallace Peak with ground cover predominantly consisting of native bush with areas of newly regenerating native bush.
Legal description: PT LOT 1 DP 51538 PT RURAL SECS 37669 37 786 SEC 2 SO 18719 BLKX V VI IX X LYN D ON SD
Values being protected: Biodiversity
Amount of reduction over 10 years: 75%
Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring areas by either wind-borne means or transport downstream. This site has biodiversity values and is covered with regenerating native bush.
Site status: Active – programme of control ongoing

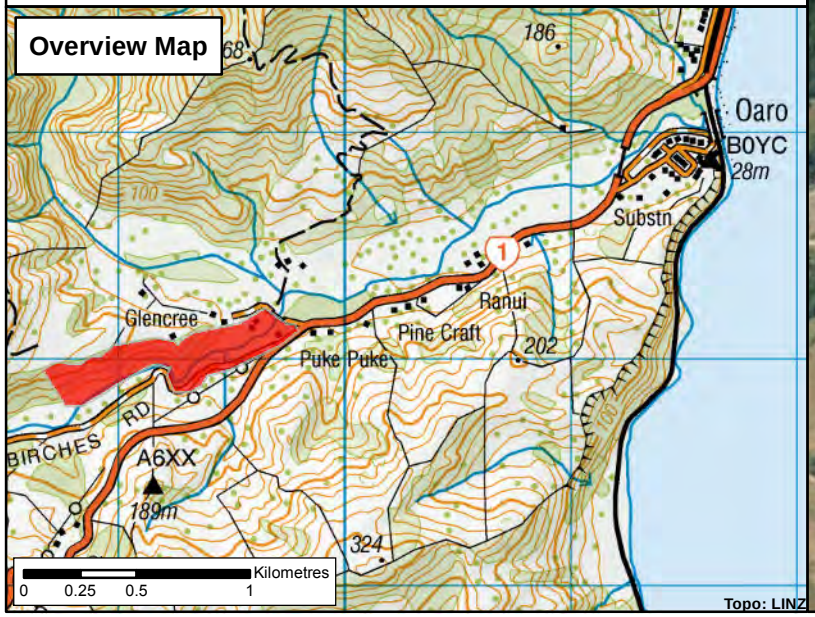


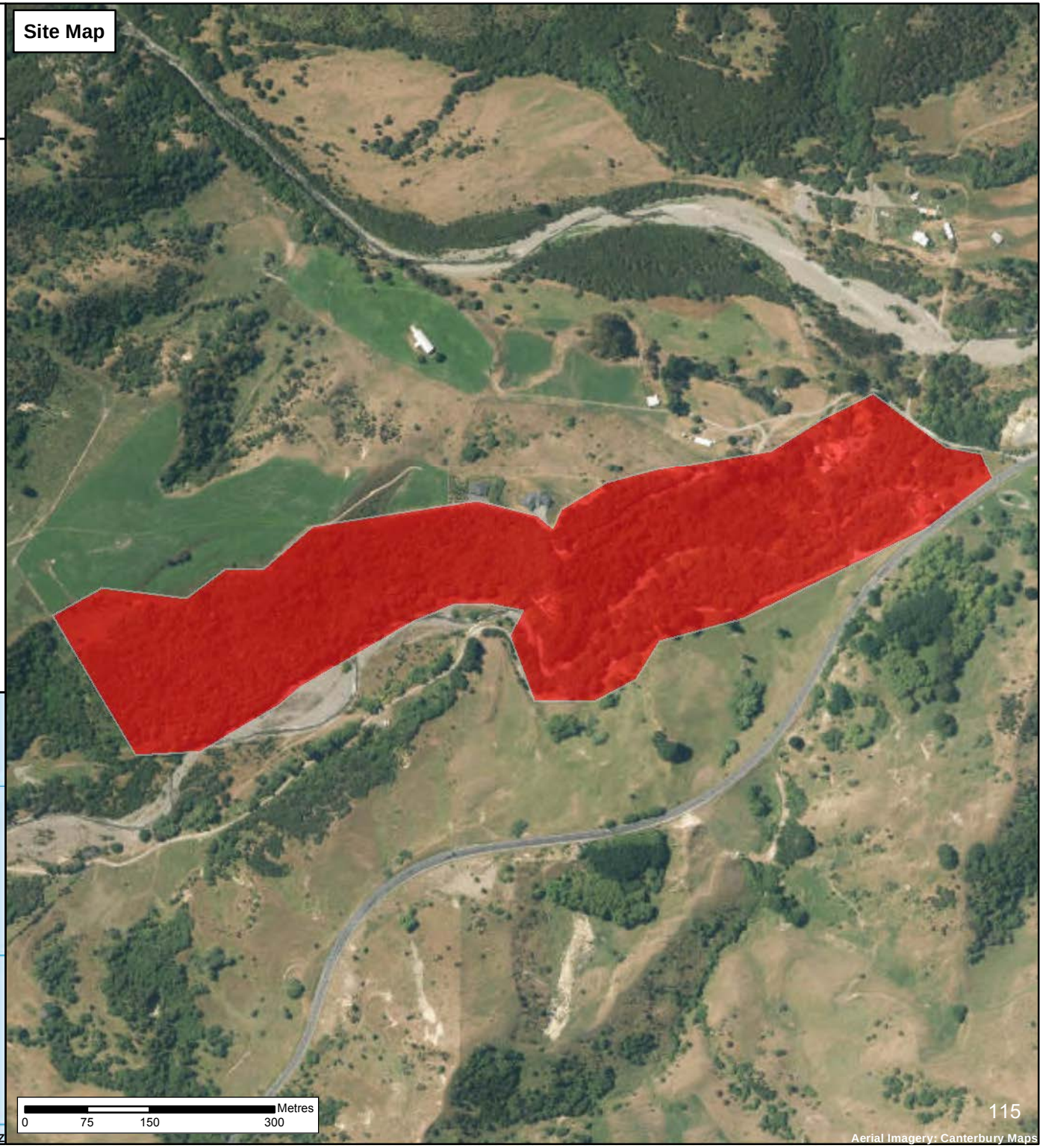


Map 9.8 Old Man's Beard
Oaro: Site-led Programme

Site Description

Location of site: Birches Road, Oaro
Grid Reference (NZTM): Easting: 1639379 / Northing: 5292029
Site boundary: The site boundary crosses through several properties located around the Te Moto Moto Stream bed and adjacent to Birches Road.
Site description: The site covers the stream bed of the Te Moto Moto stream. This site has two residential properties on the eastern edge, however the majority is covered in native bush.
Legal description: Various
Values being protected: Biodiversity
Amount of reduction over 10 years: 75%
Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring areas by either wind-borne means or transport downstream. This catchment contains large areas of biodiversity that have significant value.
Site status: Active – programme of control ongoing



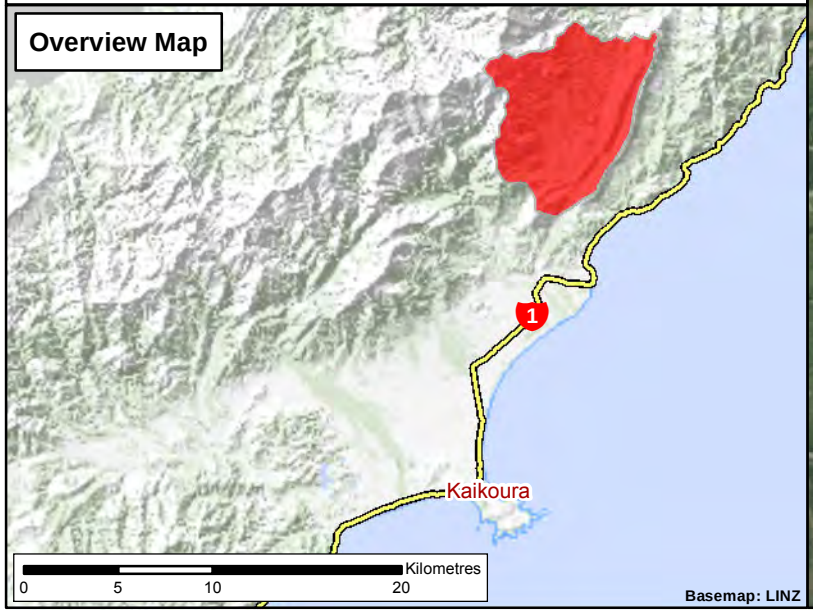


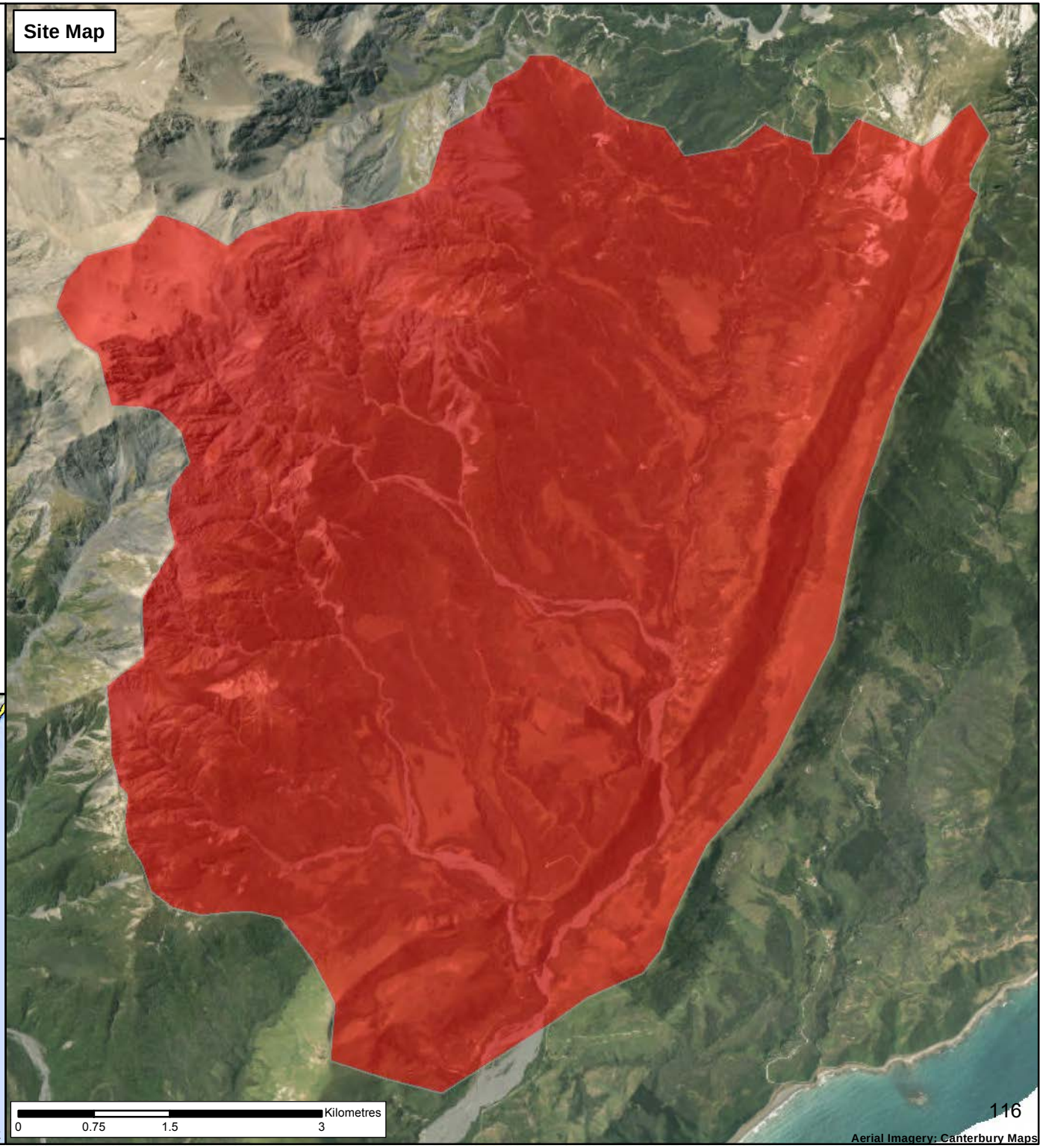
Map 9.9 Old Man's Beard
Puhi Puhi: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Puhi Puhi Road, Puhi Puhi
Grid Reference (NZTM): Easting: 1662382 / Northing: 5324742
Site boundary: The site boundary encompasses all land within the Puhi Puhi River catchment to the Puhi Puhi River Bridge.
Site description: The site covers a river catchment covered in a mixture of farmland and native bush. The majority of the catchment is covered in native bush that extends up the valley into the ranges.
Legal description: Various
Values being protected: Biodiversity
Amount of reduction over 10 years: 75%
Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring areas by either wind-borne means or transport down streams. This catchment also has large areas of biodiversity that have significant value.
Site status: Active – programme of control ongoing

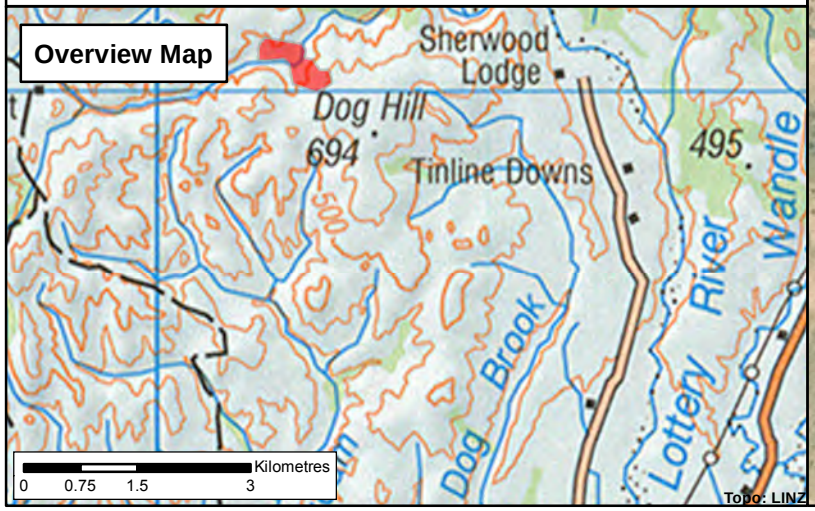


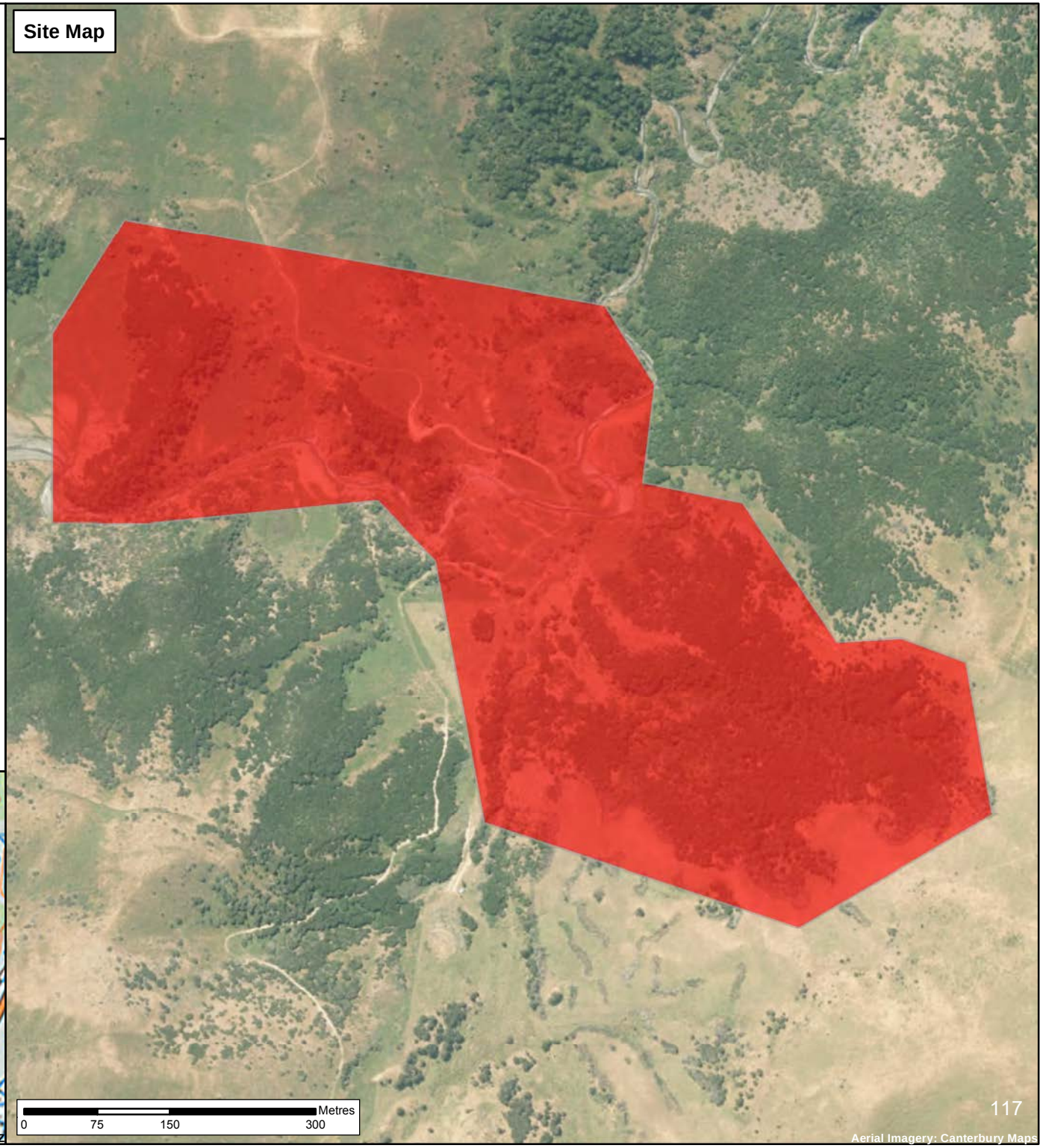


Map 9.10 Old Man's Beard Stackhouses Road: Site-led Programme

Site Description

Location of site: 119/120 Stackhouses Road (VNZ# 2126002100)
Grid Reference (NZTM): Easting: 1601746 / Northing: 5290427
Site boundary: The site covers only a small portion of the property at 120 Stackhouses Road
Site description: The site covers part of the Little Lottery River bed and some small tributaries. It is surrounded by the Windford Hills with ground cover consisting of regenerating native bush and scrubland.
Legal description: RS 37675 BLKS IV VIII LYNDON SD BLKS 1V IX WAIAU SD
Values being protected: Biodiversity
Amount of reduction over 10 years: 75%
Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring areas by either wind-borne means or transport downriver. This site has regenerating native bush and is near to some areas of established native forest.
Site status: Active – programme of control ongoing





Map 9.11 Old Man's Beard
Western Valley Road: Site-led Programme

Site Description

Location of site: The site begins at 1390 Western Valley Road (VNZ# 2386212802) and extends up the Te Kawa Stream bed.

Grid Reference (NZTM): Easting: 1583353 / Northing: 5163076

Site boundary: The site boundary follows the Western Valley Road on its western edge and then on private property on the eastern side of the Te Kawa Stream. It crosses several property boundaries.

Site description: The site is based around the Te Kawa Stream bed. The stream bed is located within steep valley sides which are covered in native forest. Gaining access to parts of this valley is difficult.

Legal description: Various

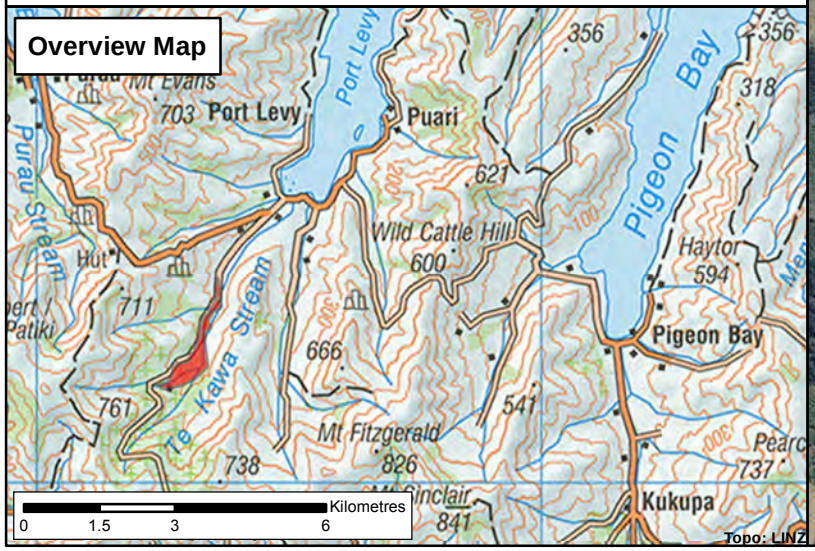
Values being protected: Biodiversity

Amount of reduction over 10 years: 75%

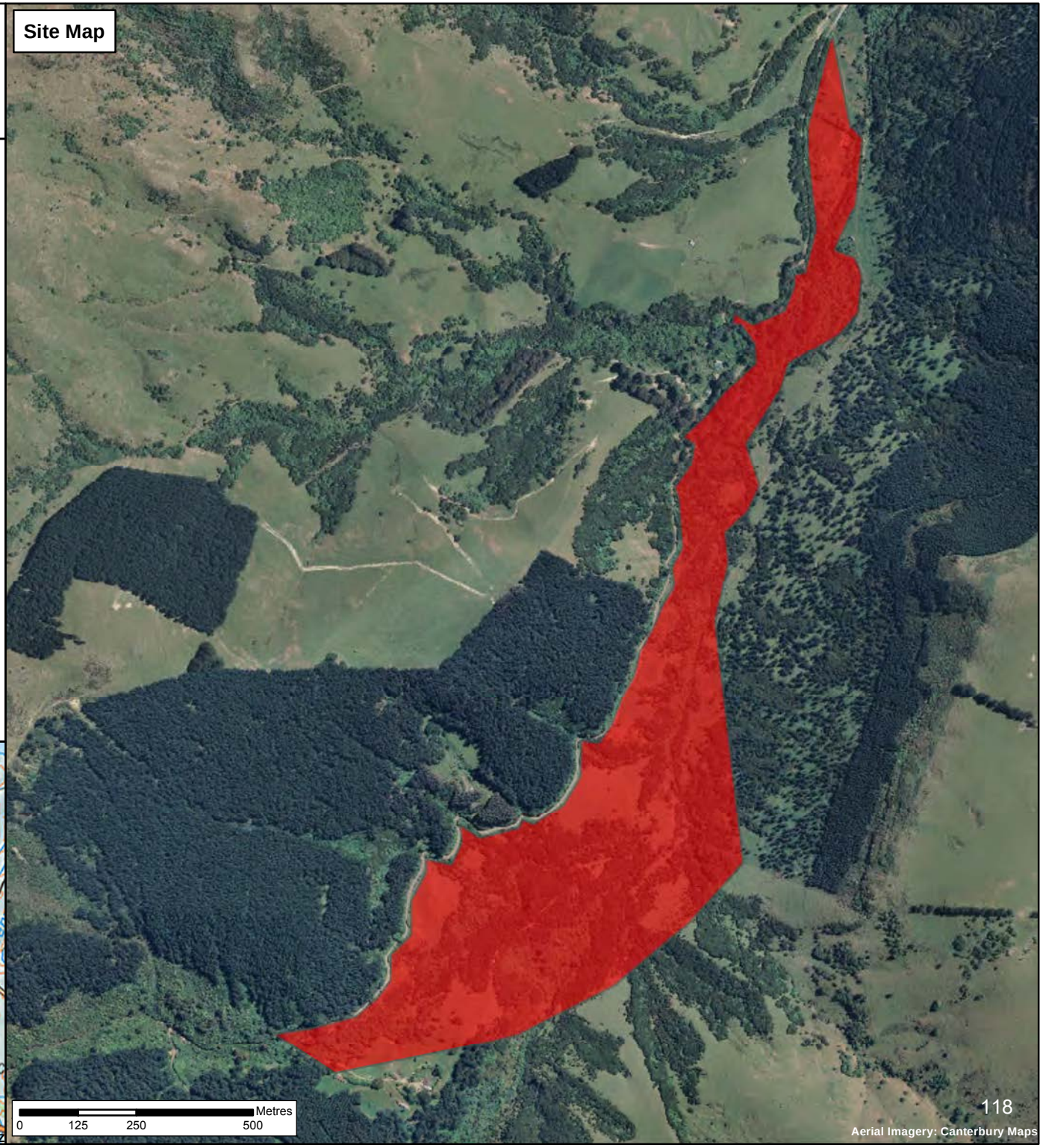
Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring properties and surrounding areas of biodiversity value. The old man's beard can also act as a seed source to the Te Kawa Stream which flows down to the Port Levy community.

Site status: Active – programme of control required

Overview Map



Site Map



Map 9.12 Old Man's Beard
Wiffens Road: Site-led Programme

Site Description

Location of site: Between Wiffens Road, Clarence (VNZ# 2105001200) 6445 State Highway 1, Kekerengu (VNZ #2105001100)

Grid Reference (NZTM): Easting: 1685934 / Northing: 5355016

Site boundary: The site boundary covers only a small portion of two large neighbouring properties at 6445 State Highway 1, Kekerengu VNZ# 2105001100 & 2105001200

Site description: The site covers a gully of native bush that runs across the boundary of the two farms.

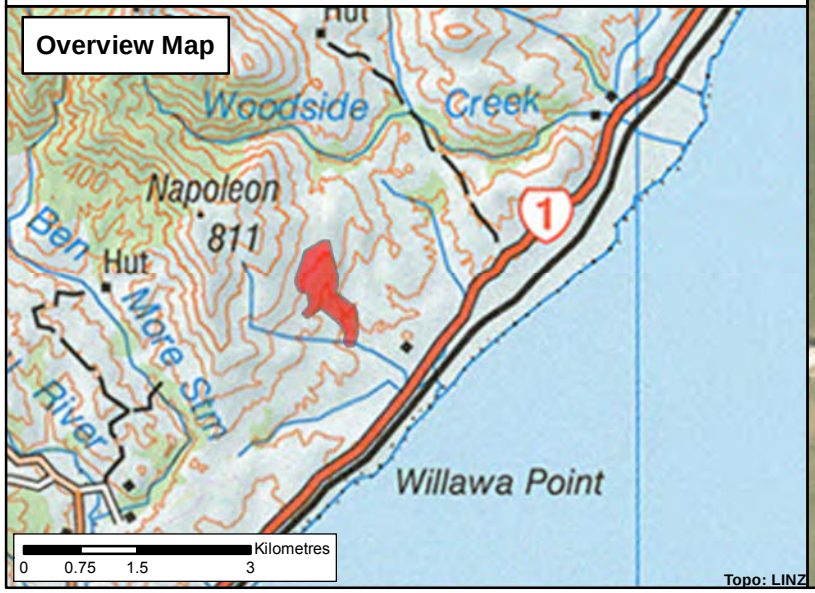
Legal description: PT SEC 11 BLK X XV WHERNSIDE SD -BAL AT 20710/183 Marlborough (Wiffens Rd) & LOT 1 DP 1645 & LOT 1 DP 11165 (SH1)

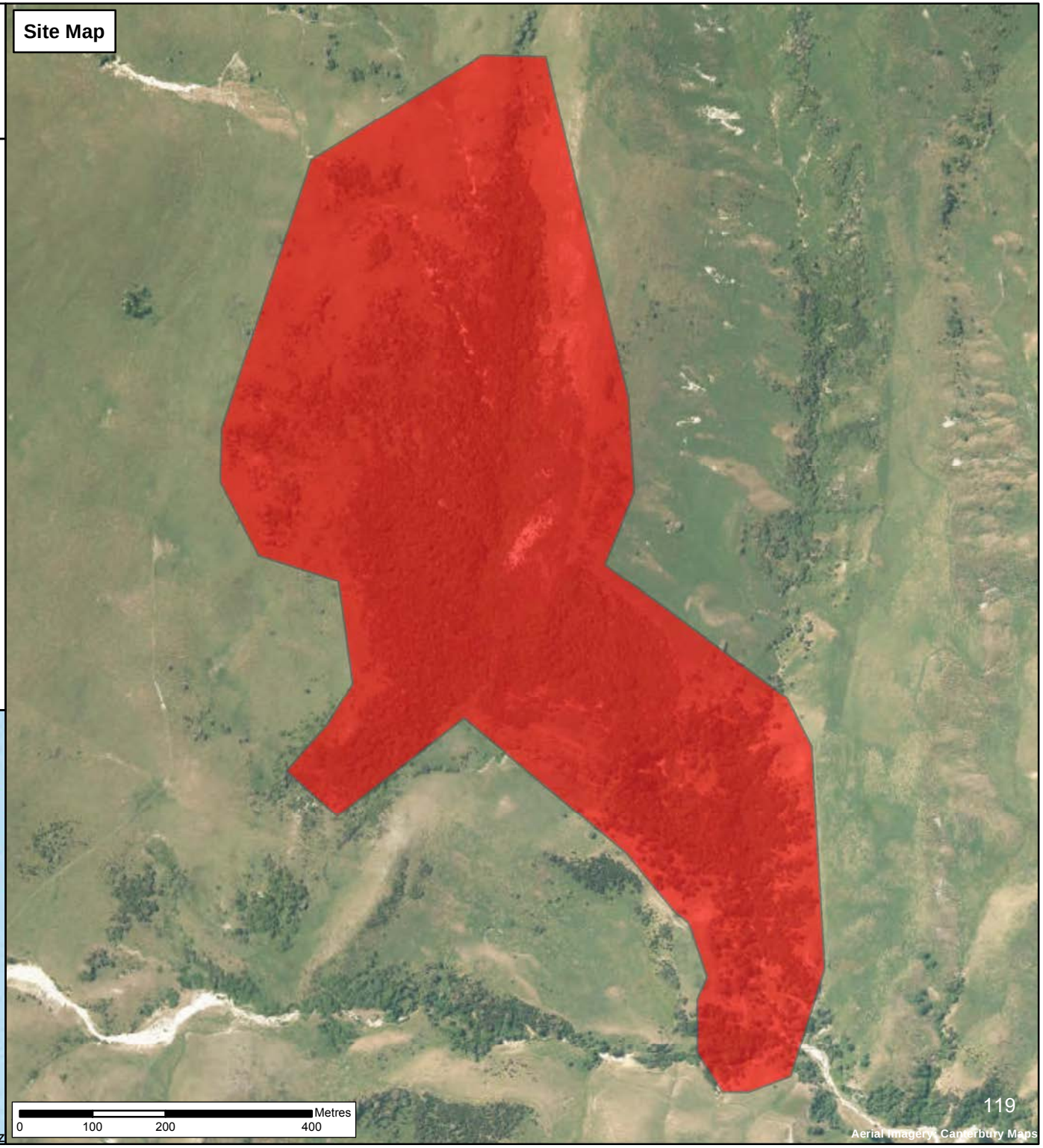
Values being protected: Biodiversity

Amount of reduction over 10 years: 75%

Reason for site-led programme: The old man's beard at this location can act as a seed source to neighbouring areas and a gulley that have biodiversity value.

Site status: Active – programme of control ongoing





Map 10 Possum Banks Peninsula: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Banks Peninsula

Grid Reference (NZTM): Easting: 2501123 / Northing: 5717305

Site boundary: Banks Peninsula, including the Kaitorete spit, to an inland boundary at Gebbies Pass Road

Site description: Banks Peninsula

Legal description: Various

Values being protected: Biodiversity

Amount of reduction over 10 years: Maintain 5% residual trap catch (RTC)

Reason for site-led programme: Community driven programme to prevent the impact of possums on biodiversity values.

Overview Map

Site Map

Map 11.1 Spartina Avon Heathcote Estuary: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Avon Heathcote Estuary

Grid Reference (NZTM): Easting: 1578066 / Northing: 5178438

Site boundary: Avon Heathcote Estuary

Site description: Avon Heathcote Estuary and surrounds

Values being protected: Biodiversity

Amount of reduction over 10 years: 50%

Reason for site-led programme: Partnership with DOC, Christchurch City Council and community groups to contain and reduce the incidence of spartina.

Pest status: Active – programme of control ongoing

Overview Map

Site Map

Map 11.2 Spartina Brooklands Lagoon: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Brooklands Lagoon
Grid Reference (NZTM): Easting: 1576172 / Northing: 5194647
Site boundary: Brooklands Lagoon
Site description: Brooklands Lagoon
Values being protected: Biodiversity
Amount of reduction over 10 years: 50%
Reason for site-led programme: Partnership with DOC, Christchurch City Council and community groups to contain and reduce the incidence of spartina.
Pest status: Active – programme of control ongoing

Map 11.3 Spartina Lyttleton Harbour: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

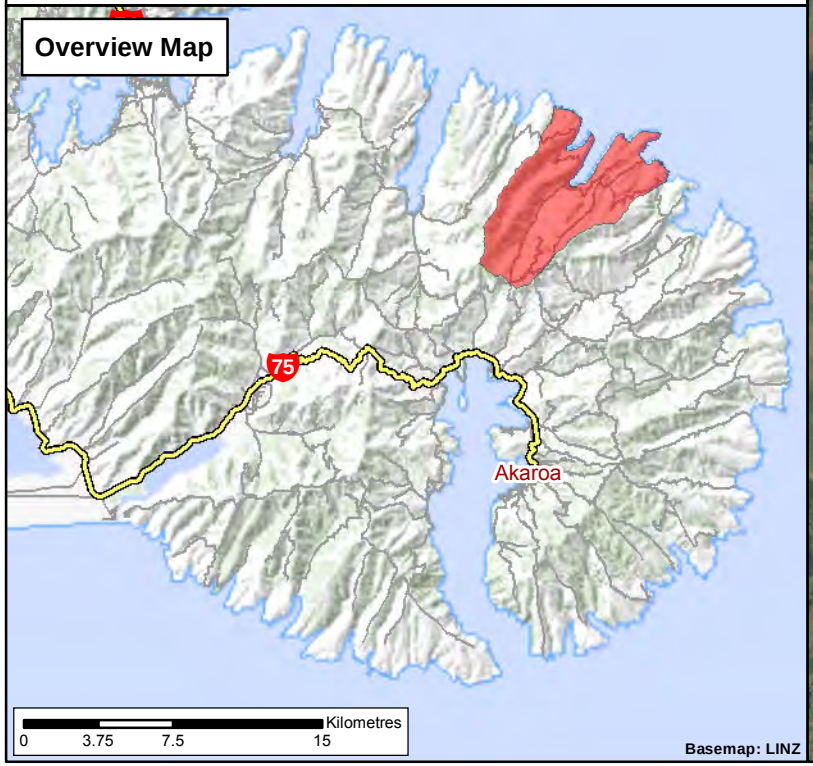
Location of site: Lyttelton Harbour
Grid Reference (NZTM): Easting: 1575016 / Northing: 5169423
Site boundary: Lyttelton Harbour
Site description: Lyttelton Harbour, Rapaki Bay to Charteris Bay
Values being protected: Biodiversity
Amount of reduction over 10 years: 50%
Reason for site-led programme: Partnership with DOC, Christchurch City Council and community groups to contain and reduce the incidence of spartina.
Pest status: Active – programme of control ongoing

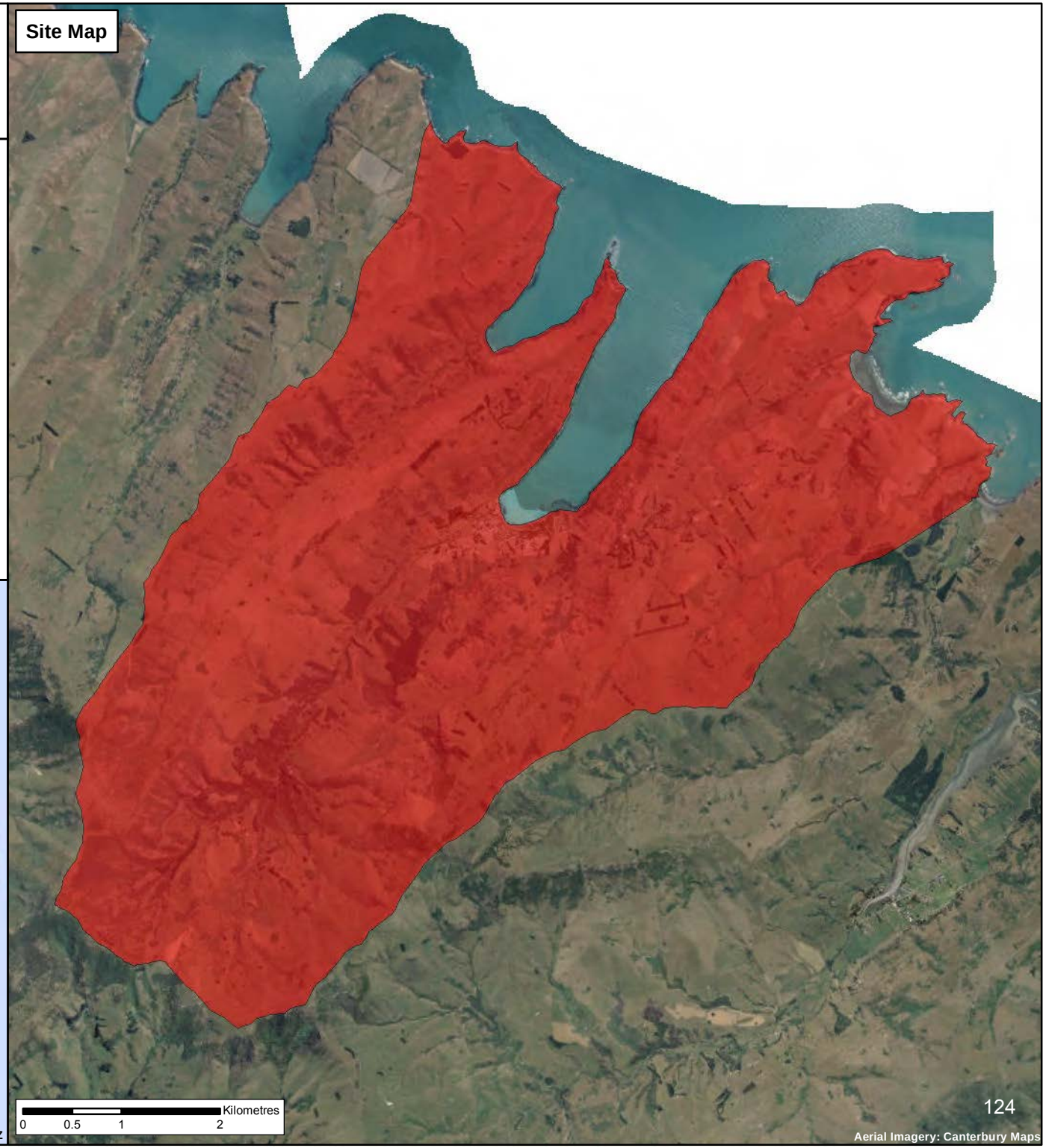
Map 12 White-edged Nightshade: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Little Akaloa area,
Grid Reference (NZTM): Easting: 2508645 / Northing: 5725209
Site boundary: Squally Bay to Stony Beach and inland to Summit Road
Site description: Catchments of Decanter, Little Akaloa and Raupō bays
Values being protected: Biodiversity/production/stock health
Amount of reduction over 10 years: 10%
Reason for site-led programme: Impact on biodiversity and potential spread to nearby land. This is the only known site of white-edged nightshade in Canterbury
Pest status: Active – programme of control ongoing



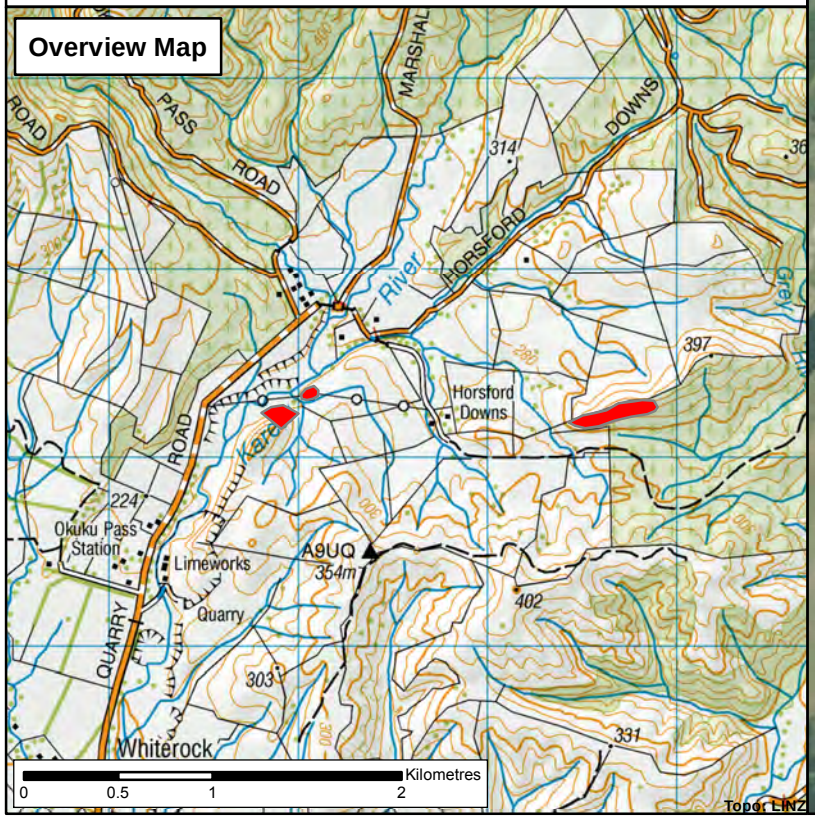


Map 13.1 Wild Thyme
Horsford Downs: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Horsford Downs, 360 Quarry Road, Loburn
Grid Reference (NZTM): Easting: 2467477/ Northing: 5783849
Site description: Limestone outcrop and reserve land
Legal description: Lot 1 DP 460717, Lot 3 DP 460717, Lot 2 DP 47046
Values being protected: Biodiversity
Amount of reduction over 10 years: 50%
Reason for site-led programme: Limited to only a few localised areas in the wild in Canterbury (garden escape) but capable of spreading to large areas of Canterbury
Site status: Active – programme of control ongoing

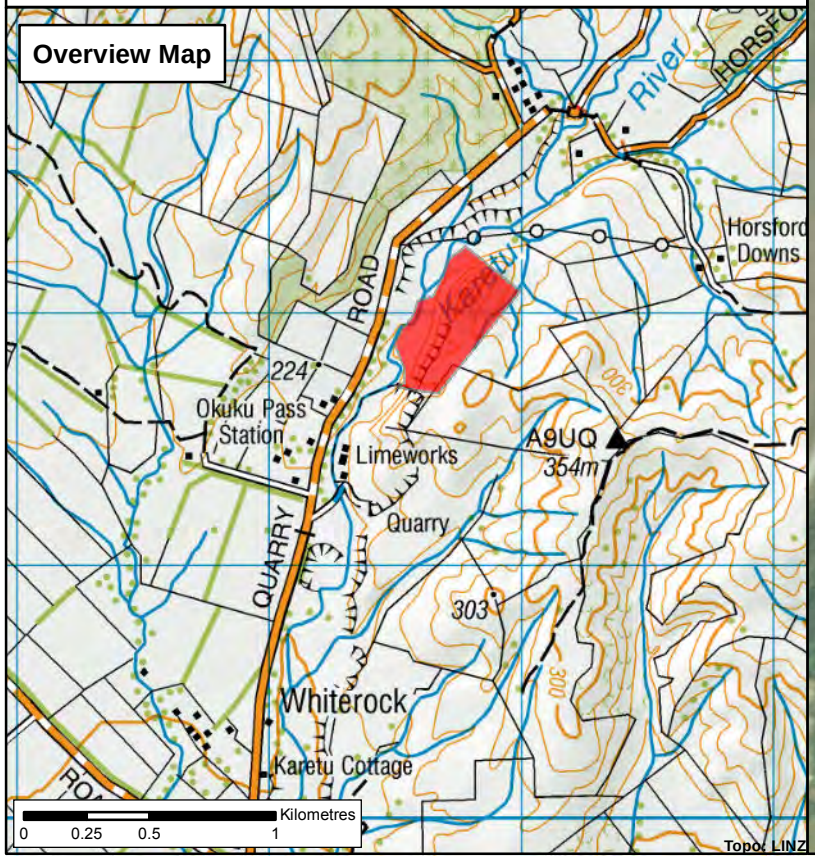


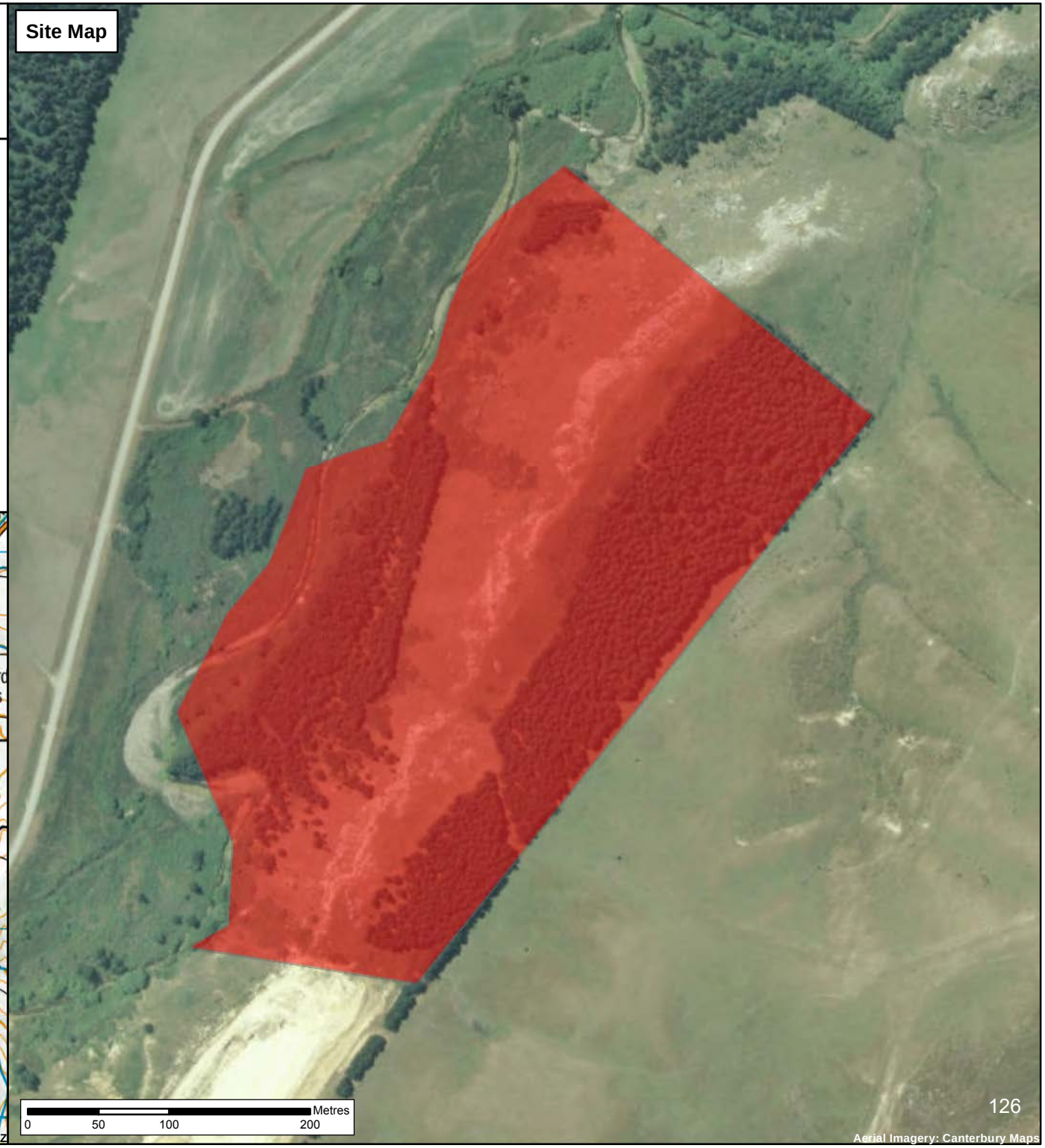
Map 13.2 Wild Thyme
Milne Loburn: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Milne, Hastie, Jones, Quarry Road
Grid Reference (NZTM): Easting: 2465650 / Northing: 5783600
Site boundary: Whiterock Lime, Horsford Downs
Site description: Limestone outcrop and reserve land
Values being protected: Biodiversity
Amount of reduction over 10 years: 50%
Reason for site-led programme: Limited to only a few localised areas in the wild in Canterbury (garden escape) but capable of spreading to large areas of Canterbury
Site status: Active – programme of control ongoing





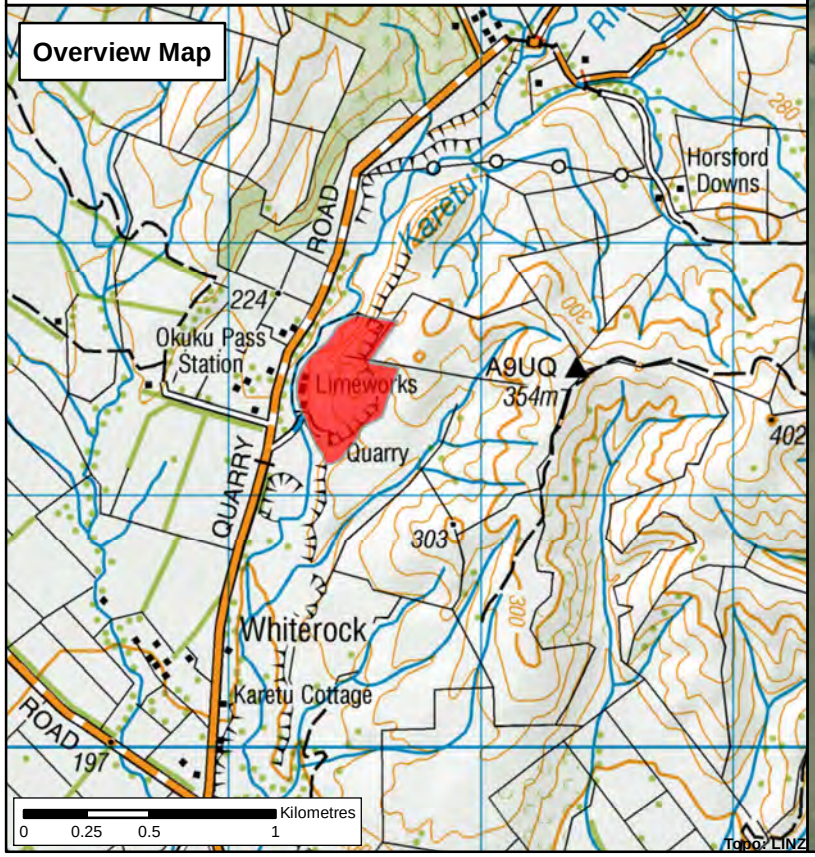
Map 13.3 Wild Thyme
Ravensdown: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Ravensdown Fertiliser, Whiterock Lime, Ashley
Grid Reference (NZTM): 2465600 / Northing: 5783000
Site description: Limestone quarry
Legal description: Lot 4 DP 755, Lot 1 DP 388690, RS 35568
Values being protected: Biodiversity
Amount of reduction over 10 years: 50%
Reason for site-led programme: Limited to only a few localised areas in the wild in Canterbury (garden escape) but capable of spreading to large areas of Canterbury.
Site status: Active programme of control ongoing

Overview Map



Site Map

Map 14 Feral Goat Containment Area Banks Peninsula: Site-led Programme

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Site Description

Location of site: Banks Peninsula
Grid Reference (NZTM): Easting: 2501123 / Northing: 5717305
Site boundary: Banks Peninsula, including the Kaitorete spit, to an inland boundary at Gebbies Pass Road
Site description: Banks Peninsula
Legal description: Various
Values being protected: Biodiversity
Amount of reduction over 10 years: Reduce the population of feral goats within the Containment Area by at least 50%.
Reason for site-led programme: Prevent the impact of feral goats on biodiversity values within the Banks Peninsula Containment Area.

Appendix 4A Lagarosiphon Sites

1.Lake Benmore and the tributaries that flow into it

2.Lake Aviemore and the tributaries that flow into it

Appendix 4B Lagarosiphon Sites

3.Lake Tekapo and the tributaries that flow into it

4.Lake Alexandrina and the tributaries that flow into it

5.Lake McGregor and the tributaries that flow into it

6.Lake Pukaki and the tributaries that flow into it

7.Lake Ruataniwha and the tributaries that flow into it

8.Lake Ohau and the tributaries that flow into it

9.Lake Middleton and the tributaries that flow into it

10.Lake Waitaki and the tributaries that flow into it

11.Lake Heron and the tributaries that flow into it

12.Lake Clearwater and the tributaries that flow into it

13.Lake Camp and the tributaries that flow into it

14.Lake Coleridge and the tributaries that flow into it

15.Lake Pearson and the tributaries that flow into it

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

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Report number: R18/30

Image: Old man's beard
to find out more visit
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