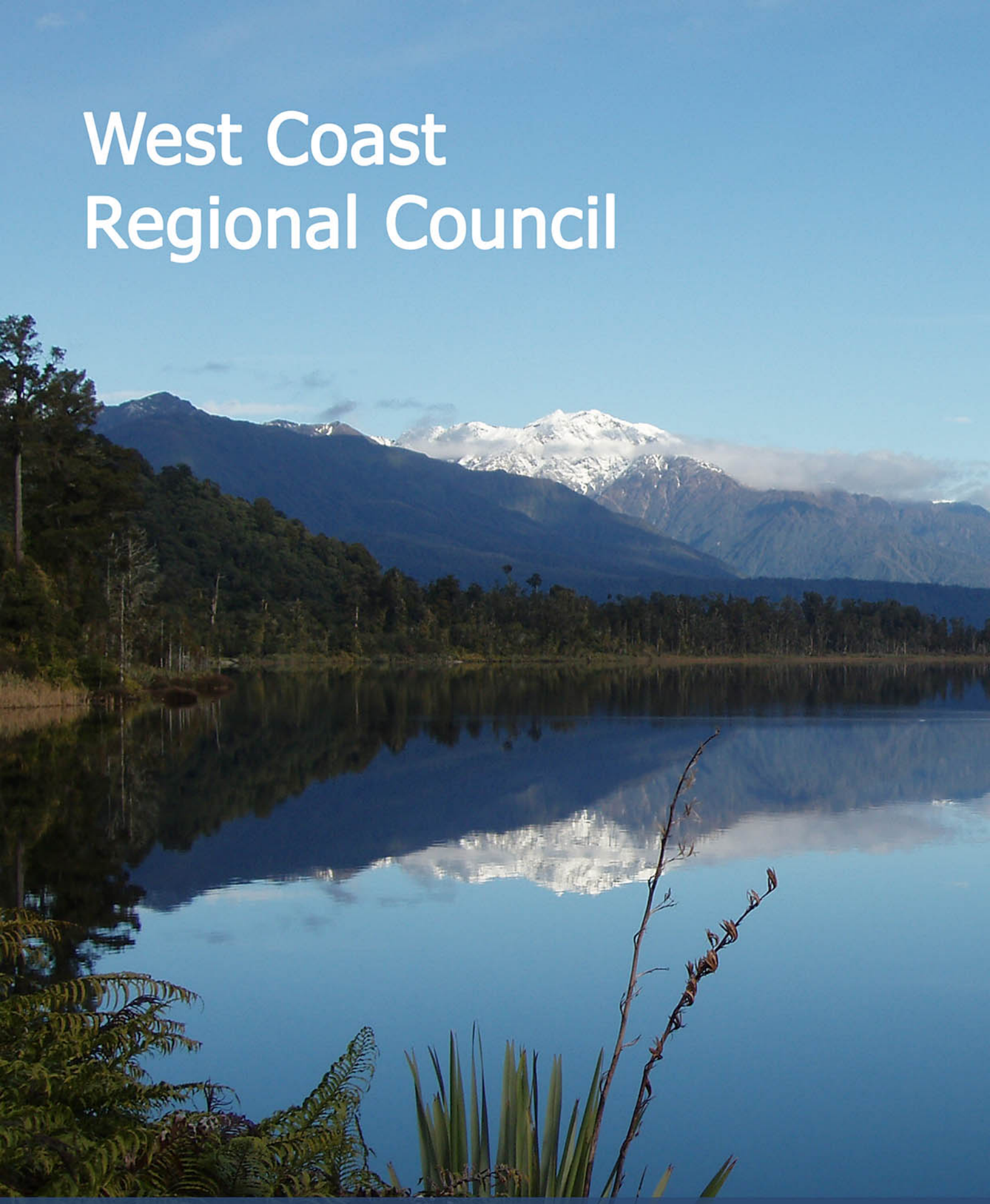
West Coast Regional Council



West Coast Regional Pest Plant Management Plan 2018-2028

THE WEST COAST REGIONAL COUNCIL

West Coast Regional Pest Plant Management Plan 2018 – 2028

Approved by Council and made Operative on: 11 July 2018

The common seal of the)
West Coast Regional Council)
was affixed in the presence of:)

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Chairman

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Chief Executive Officer

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Part One
Plan Establishment

1 Introduction

1.1 Proposer
The West Coast Regional Council has a regional leadership role under the Biosecurity Act 1993 (the Act), and intends to establish a Regional Pest Management Plan (RPMP). The first formal step is notification of the Proposed Regional Pest Management Plan for the West Coast Region for 10 years. The proposed Plan builds on the previous Regional Pest Management Strategy 2010-2015

1.2 Purpose
The purpose of the proposed RPMP is to outline the framework to efficiently and effectively manage or eradicate specified organisms in the West Coast region. Doing so will:

- 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 West Coast are considered undesirable or a nuisance. Yet, only where individual action or inaction in managing pests imposes undue effects on others is regional management needed.

The Biosecurity Act 1993 (the Act) has prerequisite criteria that must be met to justify such intervention. This Proposal identifies those organisms classified as pests to be managed through the RPMP.

Once operative, the RPMP will empower the Council to exercise the relevant advisory, service delivery, regulatory and funding provisions available under the Act to deliver the specific objectives identified in Part Two: Pest Management.

The public can make submissions about the proposed RPMP. The Council will issue decisions after reviewing those submissions. Decisions can be appealed through the Environment Court.

1.3 Coverage
The proposed RPMP will apply within the administrative boundaries of the West Coast region, and covers a total land area of approximately 23,000 square kilometres. (See map below.)

1.4 Duration
The proposed RPMP will take effect on the date it becomes operative as a Regional Pest Management Plan under s77 of the Act. It is proposed to remain in force for a period of 10 years. The RPMP may cease at an earlier date if the Council declares by public notice that the RPMP has achieved its purpose, or if following a review, it is revoked.

2 Planning and Statutory Background

2.1 Strategic background

Pest management influences, or is influenced by, how land and water are used and managed. Several planning or operational activities contribute to the overall efficiency in reducing the impact from pests on the region's economic, environmental, social and cultural values. Such activities are both within and external to the Council.

2.1.1 Council's biosecurity framework

Regional pest management sits within a biosecurity framework for the West Coast region and is supported by a number of complementary policies and plans. Landowners and/or occupiers and the wider community, either as beneficiaries or exacerbators or both, complete the partnership.

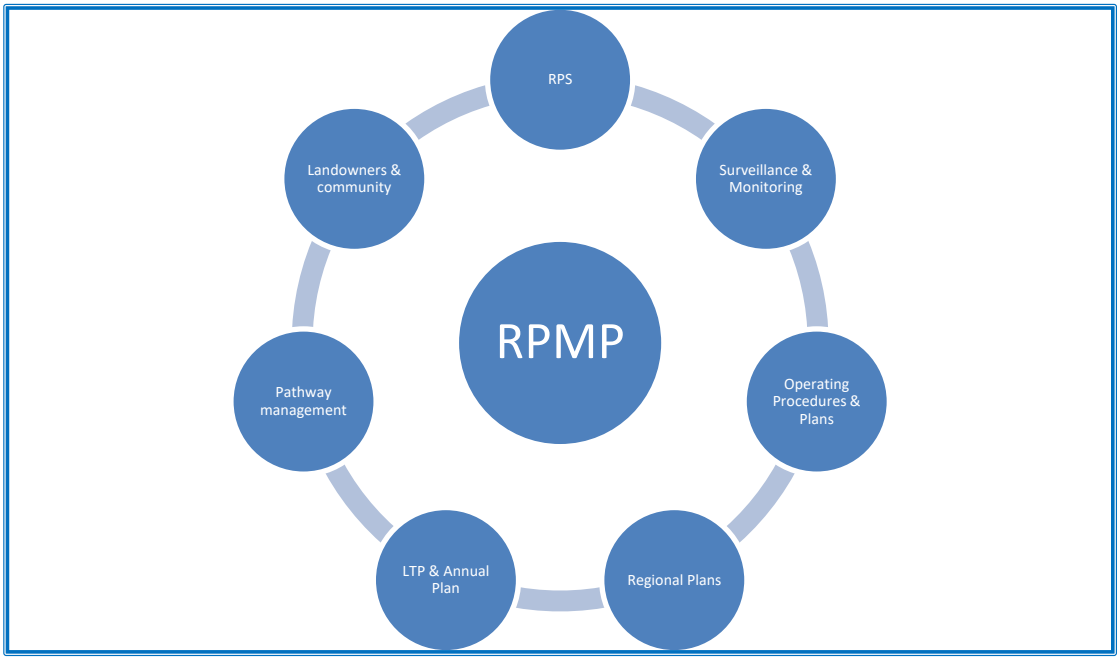

Figure 2-1 Internal Biosecurity Instruments

2.1.3 Biosecurity framework outside Council

An effective biosecurity framework works both within a region and at a national level. Neighbouring regional pest plans and pathway management plans and national legislation, policy and initiatives influence the RPMP. The plans and strategies of territorial authorities may have complementary influence. As a result, an RPMP is an integral cog in a secure biosecurity framework to protect New Zealand's environmental, economic, social and cultural values from pest threats.

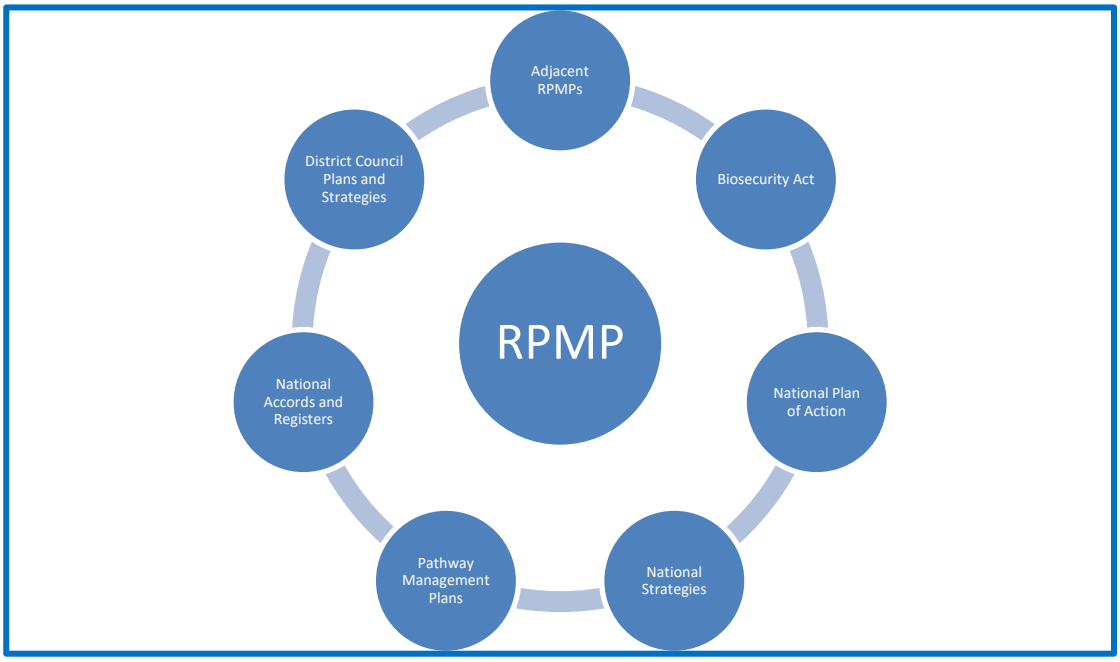

Figure 2-2 External Biosecurity Instruments

2.2 Legislative background

Regional councils undertake local government activities and actions under several legislative mandates. While managing pests is not dependent on one particular statute, its effectiveness is connected to the purpose of the particular statute. All regional councils in New Zealand have favoured the Biosecurity Act 1993 for pest management by preparing and operating their RPMPs.

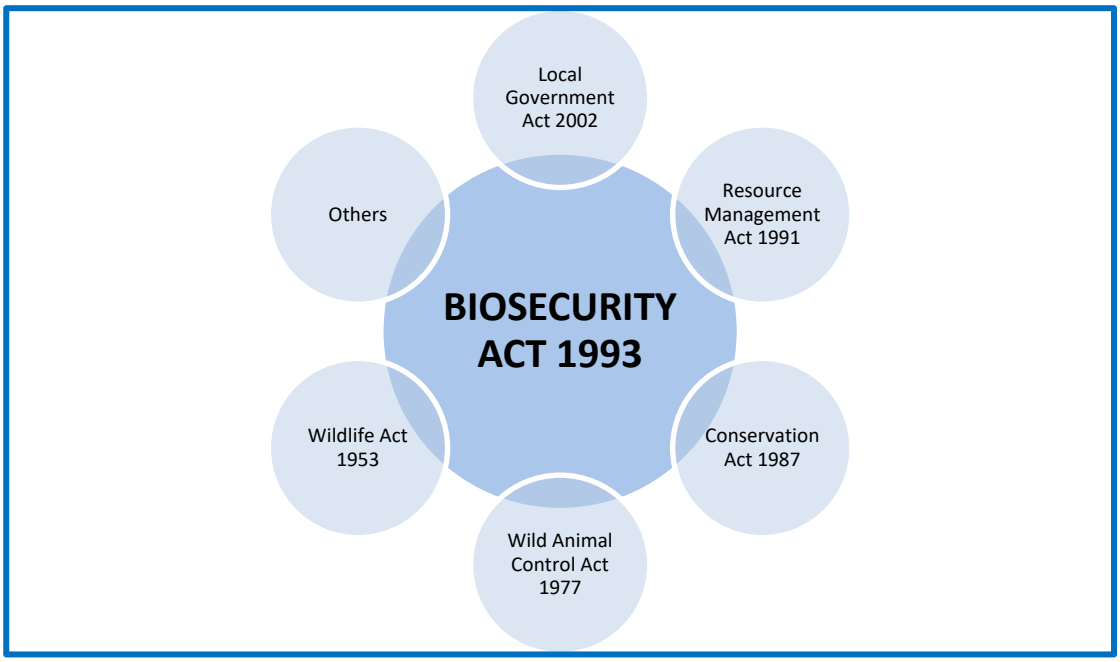

Figure 2-3 Biosecurity legislation

2.2.2 Biosecurity Act 1993

A regional council can use the Biosecurity Act to exclude, eradicate or effectively manage pests in its region, including unwanted organisms. A regional council is not legally obliged to manage a pest or other organism to be controlled, unless it chooses 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. Indeed, as noted in Section 1.1 above, the Act has prerequisite criteria that must be met to justify such intervention.

Part 5 of the Act specifically covers pest management. Its primary purpose is to provide for harmful organisms to be managed effectively or eradicated. A harmful organism is assigned pest status if included in a pest management plan (also see the prerequisites in s69–78 of the Act). Part 5 includes the need for ongoing monitoring to determine whether pests and unwanted organisms are present, and keeping them under surveillance. Part of this process is to develop effective and efficient measures (such as policies and plans) that prevent, reduce, or eliminate the adverse effects of pests and unwanted organisms on land and people (including Māori, their kaitiakitanga and taonga). Part 5 also addresses the issue of who should pay for the cost of pest management.

Part 2: Functions, powers and duties in a leadership role

Regional councils are mandated under Part 2 (functions, powers and duties) of the Act to provide regional leadership for biosecurity activities, primarily within their jurisdictional areas.

Section 12B(1) sets out how regional councils provide leadership. It includes ways that leadership in pest management issues can help to prevent, reduce or eliminate adverse effects from harmful organisms. Some of these activities include helping to develop and align RPMPs 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 so as to make programmes more effective, efficient, and equitable.

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

- Powers to establish (e.g. appoint a management agency for a plan; implement a small-scale management programme);
- Powers to research and prepare (e.g. gather information; keep records; prepare a proposal to activate an RPMP);
- Powers to enable (e.g. giving councils the power to monitor pests to be assessed, managed or eradicated); and
- Powers to review (e.g. not allow an operational plan; review, amend, revoke or replace a plan).

Part 6: Administering an RPMP

Once operative, an RPMP is supported by sections of Part 6 (as nominated in the plan) that focus on the voluntary and mandatory actions of a regional council. For example, a regional council must assess any other proposal for an RPMP, must prepare an operational plan for any RPMP (if the management agency for it), and must prepare an annual report on the operational plan.

Changes to the Act since 1993

The Act has been amended since 1993, including through the Biosecurity Law Reform Act 2012. Important changes are:

- Legislative (e.g. being able to bind the Crown to stated good neighbour rules (GNR) within a pest management plan, or to rules within a pathway management plan);
- Structural (e.g. giving regional councils a clear regional leadership role in managing pests; adding pathway management to the suite of pest management programmes; linking programmes with stated intermediate outcomes and programme objectives; using consistent terms in pest management programmes);
- Compliance related (e.g. setting out the extra requirements under the NPD that must be complied with; introducing greater transparency of risk assessment in the analysis of benefits and costs);
- Procedural (e.g. allowing funding, roles, and responsibilities related to small-scale management programmes to be delegated; allow a partial review (including adding a pest or pathway management plan) to be done at any time); and
- Consultative (e.g. increasing the flexibility in public consultation).

2.2.3 Resource Management Act 1991

Regional councils also have responsibilities under the Resource Management Act 1991 (RMA) to sustainably manage the natural and physical resources of the region, including the Coastal Marine Area (CMA). These responsibilities include sustaining the potential of natural and physical resources, safeguarding life-supporting capacity and protecting environmentally significant areas and habitats (s5(2) and 6(c)).

The RMA sets out the functions of regional councils in relation to the maintenance and enhancement of ecosystems in the CMA of the region (s30(1)(c)(iiia)), the control of actual or potential effects of use, development or protection of land (s30(1)(d)(v)) and the establishment, implementation and review of objectives, policies and methods for maintaining indigenous biological diversity (s30(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, along with regional policies and plans can be used to manage activities so that they do not create a biosecurity risk or those risks are minimised. While the Biosecurity 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 Biosecurity Act cannot over-ride any controls imposed under the RMA, for example, bypassing resource consent requirements.

2.2.4 Local Government Act 2002

The purpose of the Local Government Act 2002 (LGA) is to provide *"a framework and powers for local authorities to decide which activities they undertake and the manner in which they will undertake them".* The LGA currently underpins biosecurity activities through the collection of both general and targeted rates. While planning and delivering pest management objectives could fall within powers and duties under the LGA, accessing legislation focused on managing pests at the regional level is the most transparent and efficient approach. The Council is mandated under s11(b) of the LGA to perform the funding function, and s11(b) provides for Council to perform duties under Acts other than the LGA.

2.2.5 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 is limited to advocacy. As regional councils have a specific role under the Biosecurity Act, only taking on an advocacy role would be of little use.

2.3 Regional Leadership

Under the Act, "A regional council provides leadership in activities that prevent, reduce, or eliminate adverse effects from harmful organisms that are present in New Zealand (pest management) in its region". Within the West Coast, Council provides leadership by promoting alignment of pest control operations, promoting public support for pest management, administering an RPMP, and facilitating communication and co-operation between all parties involved in pest management both within the region and externally.

2.4 Relationship with other Pest Management Plans

An RPMP must not be inconsistent with:

- Any national pest management plan or RPMP that is focused on the same organism; or
- Any regulations.

2.5 Relationship with the National Policy Direction

The National Policy Direction (NPD) became active on 24 September 2015. The stated purpose of the NPD is to ensure that activities under Part 5 of the Biosecurity Act, provide the best use of available resources for New Zealand's best interests, and align with each other (when necessary), to help achieve the purpose of Part 5.

The table below sets out the NPD requirements and the steps taken to comply with them.

National Policy Direction Requirements	**Steps taken to comply**
Programme is described	Checked that the types of programmes (described in section 5.2 of the Proposal) comply with clause 5 of the NPD.
Objectives are set	Checked that the contents of section 6of the Proposal comply with clause 6 of the NPD.
Benefits and costs are analysed	Analysed the costs and benefits (see clause 6 of the NPD). That analysis is found in the West Coast Regional Pest Management Plan Cost Benefit Analysis Report, published alongside this Plan.
Funding rationale is noted	Checked the funding rationale described in section 9 of the Proposal has been developed in line with clause 7 of the NPD.
Good neighbour rules (GNRs) are described	GNRs have been developed in line with clause 8 of the NPD.

2.6 Relationship with Māori

One specific purpose of an RPMP under the Act is to provide for the protection of the relationship between Māori and their ancestral lands, waters, sites, wāhi tapu, and taonga, and to protect those aspects from the

adverse effects of pests. Māori involvement in biosecurity is an important part of exercising kaitiakitanga. Māori also carry out significant pest management through their primary sector economic interests and as landowners and/or occupiers.

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

2.7 Consultation overview

Pre consultation was initiated with a workshop in November 2015. All major stakeholders were invited including, Iwi, the Department of Conservation, LINZ, District Councils, NZTA, PF Olsens, Dairy NZ, Federated Farmers and contractors from within the region. The workshop covered progress made under the current Regional Pest Management Strategy, and an open table discussion on potential pests to be included in the new RPMP. The draft proposed RPMP will be circulated amongst these stakeholders for comment and finalised before the proposed RPMP is notified for public submissions.

3. Responsibilities and obligations

3.1 The management agency

The Council is the management agency responsible for implementing the proposed RPMP. The Council is satisfied that it meets the requirements of s100 of the Act in that it:

- Is accountable to the Plan funders, including Crown agencies, through the requirements of the LGA;
- Is acceptable to the funders and those persons subject to the RPMP's management provision because it implemented previous Regional Pest Management Strategies; and
- Has the capacity, competency and expertise to implement the proposed RPMP.

How Council will undertake its management responsibilities is set out in Part Three (Procedures) of the proposed Plan and in the Council's Standard Operating Procedures.

3.2 Compensation and disposal of receipts

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

3.3 Affected parties

3.3.1 Responsibilities of owners and/or occupiers

Pest management is an individual's responsibility in the first instance, as 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.

Landowners and/or occupiers must manage pest populations at or below levels specified in the rules. If they fail to meet the rules' requirements, they may face legal action. In some instances, landowners and/or occupiers must report pests to the Council. Landowners or occupiers must never sell, propagate, distribute or keep pests.

A land owner and/or occupier cannot stop an authorised person from entering a place, at any reasonable time, to:

- Find out whether pests are on the property;
- Manage pests; or
- Ensure the owner and/or occupier is complying with biosecurity law.

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

This Proposal treats all private land equally and emphasises the responsibilities and obligations of all landowners and/or occupiers, including Māori. Council acknowledges the complex and variable relationships of Māori landownership and occupation. This includes multiple owners (including lessees) or a range of corporate management systems under the Companies Act 1993 or Te Ture Māori Whenua Act 1993. Where owners and/or occupiers are unknown, the Maori Land Court; or the Registrar of Companies may help to identify and communicate with them.

3.3.2 Crown agencies

It is proposed that Crown agencies will be bound by this plan as far a Good Neighbour rules are concerned. This is to ensure all land is treated equally and no occupier, regardless of whether a Crown agency or not, is inflicting unfair or unreasonable costs on any other land occupier. Outside of Good Neighbour Rules, the Council will work closely with Crown agencies both formally and informally to best deliver the objectives of this Plan.

3.3.3 Territorial Local Authorities

Three territorial local authorities are contained within the West Coast region. They are the Buller, Grey, and Westland District Councils. Territorial local authorities are required to control pests on land that they occupy in accordance with the rules of the proposed RPMP. Each territorial local authority must meet the costs of complying with the proposed RPMP.

3.3.4 Road reserves

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

As such, it is proposed that the responsibility for control of pests on road reserves sits with the occupier, i.e. the road authority in the first instance. Where the road reserve is being occupied by another party, i.e. in the case of a paper road, or for grazing purposes etc., the occupier shall be responsible for pest control. The roading authority will undertake pest control as per the appropriate rules in the following locations:

- Rest Areas;
- Weigh Pit and Stockpile sites;
- Legal road reserves adjacent to land free of pest plants;
- Legal road reserves adjacent land where an occupier is undertaking pest plant management as per a Good Neighbour Rule; and
- Other isolated areas mainly for safety reasons.

Rules will only be enforced upon adjacent neighbour complaint.

Where an adjacent land occupier objects to the control methods preferred by the road authority, e.g. chemical control, the adjacent occupier will be responsible for pest control in the road reserve adjacent to their property, as per the appropriate rules in this Plan.

Part Two
Pest Management

4. Organisms declared as pests

The organisms listed in Table 4.1 are classified as pests. The Table also indicates what management programme, or programmes, will apply to the pest and if a Good Neighbour Rule (GNR) applies. Attention is also drawn to the **statutory obligations** of any person under s52 and s53 of the Act. Those sections ban anyone from selling, propagating or distributing any pest, or part of a pest, covered by the RPMP. Not complying with s52 and s53 is an offence under the Act, and may result in the penalties noted in s157(1).

Currently only pest plants are listed in the Plan. Vertebrate pest management is undertaken throughout the region outside of Council. The Department of Conservation undertakes control of species such as rats and stoats, which threaten conservation values within the DOC estate. OSPRI undertake the TBfree programme to eliminate bovine tuberculosis from cattle, deer and wildlife throughout New Zealand. However if an animal pest problem emerged that warranted regional regulatory intervention, this could be included in the Plan via a review under section 100D or 100G of the Act.

Table 4-1 Organisms Classified as Pests

Common Name	Scientific Name	Programme	GNR
African Feather Grass	*Cenchrus macrourus*	Eradication	N
Bushy Asparagus	*Asparagus aethiopicus*	Eradication	N
Cape Ivy	*Senecio angulatus*	Eradication	N
Cathedral Bells	*Cobaea scandens*	Eradication	N
Madeira Vine	*Anredera cordifolia*	Eradication	N
Nodding Thistle	*Carduus nutans*	Eradication	N
Woolly Nightshade	*Solanum mauritianum*	Eradication	N
Chilean Needle Grass	*Nassella neesiana*	Exclusion	N
Coltsfoot	*Tussilago farfara*	Exclusion	N
Smilax	*Asparagus asparagoides*	Exclusion	N
Spartina	*S.alterniflora/angilica/townsendii*	Exclusion	N
Hornwort	*Ceratophyllum demersum*	Exclusion	N
Tree Privet	*Ligustrum lucidum*	Exclusion	N
White Edged Nightshade	*Solanum marginatum*	Exclusion	N
Banana Passionfruit	*Passiflora tripartite* *Passiflora tarminiana*	Progressive containment	N
Blue Morning Glory	*Ipomoea indica*	Progressive containment	N
Chocolate Vine	*Akebia quinata*	Progressive containment	N
Darwins Barberry	*Berberis darwinii*	Progressive containment	N
Elaeagnus	*Elaeagnus x reflexa*	Progressive containment	N
Gunnera	*Gunnera tinctoria* *Gunnera manicata*	Progressive containment	N
Himalayan Honeysuckle	*Leycesteria formosa*	Progressive containment	N
Japanese Honeysuckle	*Lonicera japonica*	Progressive containment	N
Knotweed	*Reynoutria sachalinensis (Giant)* *Reynoutria japonica (Japanese)*	Progressive containment	N
Lagarosiphon	*Lagarosiphon major*	Progressive containment	N
Mile a Minute	*Dipogon lignosus*	Progressive containment	N
Old Man's Beard	*Clematis vitalba*	Progressive containment	N

Common Name	Scientific Name	Programme	GNR
Oxygen weed	*Egeria densa*	Progressive containment	N
Pampas	*Cortaderia jubata (purple)* *Cortaderia selloana (white)*	Progressive containment	N
Parrots Feather	*Myriophyllum aquaticum*	Progressive containment	N
Purple Loosestrife	*Lythrum salicaria*	Progressive containment	N
Wild Ginger	*Hedychium gardnerianum* *Hedychium flavescens*	Progressive containment	N
Yellow Bristle Grass	*Setaria pumila*	Progressive containment	N
Yellow Flag Iris	*Iris pseudacorus*	Progressive containment	N
Broom	*Cytisus scoparius*	Progressive containment / Sustained control	Y
Giant Buttercup	*Ranunculus acris*	Sustained control	N
Gorse	*Ulex spp.*	Sustained control	Y
Ragwort	*Jacobaea vulgaris*	Sustained Control	Y

5. Pest management framework

5.1 Objectives

Objectives have been set for each pest, or class of pests. As required by the NPD, the objectives include:

- The particular adverse effect/s (s54(a) of the Act) to be addressed;
- The intermediate outcomes of managing the pest;
- The geographic area to which the objective applies;
- The level of outcome, if applicable;
- The period for achieving the outcome; and
- The intended outcome in the first 10 years of the Plan (if the period is greater than 10 years).

5.2 Pest management programmes

One or more pest management programmes will be used to control pests covered by this RPMP. The types of programme are defined by the NPD and reflect outcomes in keeping with:

- The extent of the invasion; and
- Whether it is possible to achieve the desired control levels for the pests.

The intermediate outcomes for the 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. **Site-led Pest 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 used in the RPMP 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

Landowners, occupiers, or other persons may be required to act where RPMP rules dictate:

- Pests are to be controlled;
- Management plans are to be prepared and submitted;

- The presence of pests is to be reported;
- Actions are to be reported (type, quantity, frequency, location, programme completion); or
- Pests are not to be spread (propagated, sold, distributed), and pathways are to be managed (e.g. machinery, gravel, animals).

2. Council inspection

Inspection by Council may include staff:

- Visiting properties or doing surveys to determine whether pests are present, or rules and management programmes are complied with, or to identify areas that control programmes will apply to (places of value, exclusion zones, movement control areas);
- Managing compliance to regulations (rule enforcement, action on default, prosecution, exemptions);
- Taking limited control actions, where doing so is effective and cost efficient; or
- Monitoring effectiveness of control.

3. Service delivery

Council may deliver the service:

- Where it is funded to do so within a rating district;
- On a user pays basis;
- By providing control tools, including sourcing and distributing biological agents, or provisions (e.g. Herbicides).

4. Advocacy and education

Council may:

- Provide general purpose education, advice, awareness and publicity activities to landowners, occupiers, and the public about pests and pathways (and control of them);
- Encourage landowners and/or occupiers to control pests;
- Facilitate or fund community, landowners and/or occupier self-help groups and committees;
- Help other agencies with control, advocacy, and the sharing or sourcing of funding;
- Promote industry requirements and best practice to contractors and landowners and/or occupiers;
- Encourage landowners and/or occupiers and other persons to report any pests they find or to control them; or
- Facilitate or commission research.

5.4 Rules

Rules play an integral role in securing many of the pest management outcomes sought by the proposed RPMP. They create a safety net to protect landowners and/or occupiers from the effects of the actions or inactions of others where non-regulatory means are inappropriate or do not succeed. Importantly, amendments to the Act arising from the Biosecurity Law Reform Act 2012 now make the Crown bound by those rules identified as Good Neighbour Rules in RPMPs.

Section 73(5) of the Act prescribes the matters that may be addressed by rules, and the need to:

- Specify if the rule is to be designated as a 'Good Neighbour Rule';
- Specify if breaching the rule is an offence under the Act;
- Specify if an exemption to the rule, or any part of it, is allowable or not; and
- Explain the purpose of the rule.

Rules can apply to landowners and/or occupiers, or to a person's actions in general.

The NPD and accompanying guidance notes provide extra requirements to include in the rules of a new GNR. Of particular note, the GNR will:

- Identify who the GNR applies to—either all landowners and/or occupiers, or a specified class of landowner and/or occupier;
- Identify the pest to be managed;
- State that the pest must already be present on the landowner's and/or occupier's land;
- State that the landowner and/or occupier of the adjacent or nearby land must, in the view of the Council, be taking reasonable measures to manage the pest on their land; and
- (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.

For example, all landowners and/or occupiers within the West Coast region must destroy all gorse on their land within 10m of a boundary with an adjacent property, prior to flowering, where the adjacent landowner

and/or occupier is managing their land for production or environmental values and taking reasonable measures to control gorse or its impacts. Control will be completed within 30 days of written notification being issued, unless by agreement between landowner and/or occupier and Council.

6. Pest descriptions

6.1 Exclusion Pests

Exclusion pests are pests not thought to be present within the West Coast, which are believed to be capable of causing negative impacts on production, conservation or recreational values if allowed to establish.

Objective

Over the duration of the plan, prevent the establishment of any of the pests listed in Table 6-1 within the West Coast, to prevent any adverse effects on economic wellbeing, the environment, human health, or recreational values.

Principal Measures

- Requirement to act: Landowners and/or occupiers have a responsibility to report any suspected sightings of these plants to the Council.
- Council inspection: The Council will undertake surveillance in areas believed to be likely points of infestation.
- Advocacy and education: Public information on likely vectors of arrival and the threat to West Coast will be made available to the public.
- Service delivery: The Council or the Department of Conservation may choose to undertake control work on these pests should they be found within the region.

Table 6-1 Exclusion pests

Species	Description	Status
Chilean Needle Grass	Chilean Needle Grass is an erect perennial tussock growing to 1 metre tall if ungrazed It produces seeds from three points on the plant: the panicle seed, mid-stem seed at leaf joins and at the base of the plant. Panicle seed is the most obvious and the easiest way to identify the plant. Panicle seed is usually present November-January and, when conditions are suitable, March-May.	Production Pest not known to be present within the region
Coltsfoot	A perennial, mat-forming herb growing to 20cm tall. Coltsfoot has the potential to displace native vegetation. The only known sites at Otira and Rocky Point appear to have been eradicated.	Environmental Pest Thought to be eradicated from the region
Hornwort	Submerged, free-floating or anchored perennial that grows in water up to 16m deep. Stems are floating or submerged, branched, stiff and brittle. Thin dark green leaves in whorls of 7-12 are densely crowded at the stem tip, increasingly spaced down the stem. No known sites in the South Island	Environmental Pest Not known to be present within the region

Smilax	Smilax is a scrambling or twining perennial vine which grows up to 3m high over supporting shrubs and small trees. It is characterised by clusters of white, fleshy, tuberous roots and twisted thin, wiry, many branched stems which are either green or slightly brown and woody. Ovalish, pointed 'cladodes' (green flattened stems resembling leaves), each having seven veins, are spread out along the stems at each stem node. These cladodes distinguish Smilax from all other Asparagus species. The greenish-white flowers are 5-6mm long appear singly or in pairs through July and August, followed by round red berries 6-10mm long containing 2-8 tiny black seeds.	Environmental Pest Thought to be eradicated from the region
Spartina	An invasive, erect, rhizomatous grass up to 1m tall. Capable of quickly dominating large areas of estuarine environments negatively affecting native ecosystems and conservation values. Two known sites in the Oparara Lagoon (Karamea) have been eradicated.	Environmental Pest Thought to be eradicated from the region
Tree Privet	An evergreen tree with leaves and berries poisonous to both humans and animals. Capable of rapidly invading bush margins and crowding out canopy trees and suppressing native seedling germination. The only known site of Tree Privet on the West Coast at Waimangaroa has been eradicated.	Environmental Pest Thought to be eradicated from the region
White Edged Nightshade	A highly invasive shrubby perennial growing up to 5m tall. Capable of infesting pasture and bush margins negatively affecting production and conservation values. An historic site of White Edged Nightshade at Little Wanganui Heads has been eradicated.	Environmental and Production Pest Thought to be eradicated from the region

6.1.1 Rule:
All landowners and/or occupiers within the West Coast must not sell, propagate or distribute any pests listed in Table 6-1.

Explanation of Rule 6.1.1
The purpose of Rule 6.1.1 is to prevent the establishment of any pest listed in Table 6-1 within the West Coast to avoid any adverse effect on economic wellbeing, the environment, human health or recreational values.

A breach of Rule 6.1.1 will create an offence under Section 154 N(19) of the Act. Any person or corporation who fails to comply with this Rule is liable to penalties as prescribed under Section 157(5) of the Act.

6.2 Eradication Pests

Eradication pests are pests of limited distribution within the West Coast and which pose a significant threat to production, conservation or recreational values if left uncontrolled.

Objective
Over the duration of the Plan eradicate all pests listed in Table 6-2 from the West Coast to eliminate adverse effects on economic wellbeing, the environment, human health and recreational values.

Principal Measures
- Requirement to act: Landowners and/or occupiers have a responsibility to report any suspected sightings of these plants to the Council. Landowners and/or occupiers are required to destroy any pest listed in Table 6.2 on their property.
- Council inspection: The Council will undertake surveillance/compliance inspections in areas known to, or likely to, house infestations to ensure compliance with the RPMP.
- Advocacy and education: Public information on how to identify and control pests listed in Table 6.2 will be made available to the public.

- Service Delivery: The Council or the Department of Conservation may choose to undertake control work on these pests on the landowner and/or occupier's behalf.

Table 6-2 Eradication pests

Species	Description	Status
African Feather Grass	An upright, clump forming perennial grass growing up to 2m tall. Easily identified from November to April by a cylindrical spikelet African Feather Grass is an aggressive invader of suitable habitat which includes poor pasture areas, roadsides and reserves. Unpalatable to stock it is a threat to production values while its tolerance for damp or wet soils means it can cause drainage problems. On the West Coast there are fewer than 50 known sites. Spread from Greymouth to Karamea.	Production Pest
Bushy Asparagus	Scrambling & climbing plant; can also grow in trees as epiphyte. Slender, extensively branched stems wrap around small trees & saplings. Fine, fern-like foliage, small, delicate leaves attached to hook vines. Tiny white flowers (Sept-Dec). Many round berries ripen green to red-orange.	Environmental Pest
Cape Ivy	An invasive scrambling shrub/climber, Cape Ivy grows quickly across the ground smothering established low growing natives up to 2m tall. Dark green succulent leaves and yellow daisy like flowers are easy to identify. There are only three known sites of Cape Ivy in the region, at Hector, Tauranga Bay, and Cobden, making it an excellent candidate for eradication.	Environmental Pest
Cathedral Bells	Cathedral Bells is a vigorous perennial climber recognisable by green flowers which turn a deep purple. A fast grower, Cathedral Bells smothers ground cover species and small tree species meaning it is a threat to conservation values throughout the region.	Environmental pest
Madeira Vine	A perennial hairless vine with notable aerial tubers and heart shaped leaves. Madeira Vine thrives in warm, moist conditions, climbing and smothering desirable species beneath a dense heavy blanket of growth. Flowering occurs from January to April with small fragrant cream flowers. Only one known site exists within the region, in a garden in Karamea.	Environmental Pest
Nodding Thistle	An erect biennial or annual thistle growing up to 1.5m tall. Whilst a rosette Nodding Thistle can be confused with Scotch or Winged Thistles, a flowering Nodding Thistle is easily identified by large purple flower heads which droop or 'nod' when mature. A serious production threat due to its unpalatability and ability to form dense patches excluding desirable pastures. There is one known site within the region, at Maimai under annual control.	Production Pest
Woolly Nightshade	A fast growing tree up to 9m tall. Large grey/green leaves which are furry and oval in shape. Green berries turn yellow as they ripen and are toxic to humans. Highly invasive, Woolly Nightshade can invade pasture land and bush margins negatively impacting production and conservation values. All known sites are under control.	Environmental and Production pest

Rule 6.2.1: All landowners and/or occupiers within the West Coast must destroy all pests listed in Table 6-2 on their land.

Explanation of Rule 6.2.1
The purpose of this rule is to eradicate the pests listed in Table 6-2 from the West Coast, to eliminate adverse effects on economic wellbeing, the environment, human health, or recreational values.

A breach of rule 6.2.1 will create an offence under Section 154 N(19) of the Act. Any person or corporation who fails to comply with this rule is liable to penalties as prescribed under Section 157(5) of the Act.

6.3 Progressive Containment Pests

Progressive containment pests are pests which are established within the region but capable of negatively effecting conservation, production or recreational values if allowed to spread. The objective with these pests is to contain infestations to land already infested, and progressively reduce the size of those infestations.

Objective

Over the duration of the Plan, progressively contain pests listed in Table 6-3 to reduce adverse effects on economic wellbeing, the environment, and recreational values.

Principal Measures

- Requirement to act: Landowners and/or occupiers are required to undertake control on any pest listed in Table 6-3 on their property.
- Council inspection: The Council will undertake surveillance/compliance inspections in areas known to, or likely to have, infestations to ensure compliance with the RPMP.
- Advocacy and education: Public information on how to identify and control pests listed in Table 6-3 will be made available to the public.
- Service delivery: The Council or the Department of Conservation may choose to undertake control work on these pests on the landowner and/or occupiers behalf.

Table 6-3 General Progressive Containment Pests

Species	Description	Status
Blue Morning Glory	A vigorous climber with visible deep blue/purple flowers year round. Blue Morning Glory quickly grows into the canopy smothering support plants and shading out plants below. Spread is from stem fragments.	Environmental Pest
Chocolate Vine	A twining climber and vigorous groundcover with slender green stems which turn brown as the plant matures. Chocolate Vine produces purple, vanilla scented flowers from August to October. Tolerant of a wide range of conditions from full sun to shade, drought or frost, acid or alkaline soils, aerial vines are straightforward to control but the twisted mat of vines on the ground is extremely persistent. The ground cover totally smothers out low growing natives and aerial vines smother young trees.	Environmental Pest
Darwin's Barberry	A woody evergreen shrub growing to 5m tall. Darwin's Barberry has small glossy dark green leaves; deep yellow-orange flowers are visible from July to February, followed by purple-black berries. Seeds can be spread long distances by birds. A threat to native species and ecosystems through competition and also forestry production values.	Environmental and Production Pest
Gunnera Tinctoria and Manicata	An invasive large clump forming plant, Gunnera is easily recognisable by its huge umbrella shaped leaves and long green/pink flower spikes. Gunnera forms dense stands excluding virtually all other species and shading out low growing natives. Gunnera may also impede drainage if allowed to establish in waterways/wetlands.	Environmental Pest
Mile a Minute	A vigorous, evergreen climber with Pea-like white, lavender and white, or pink to reddish purple flowers. Flowering occurs over a long period from July – January followed by boat shaped seed pods similar to pea pods 3-4cm long. Aptly named for its ability to rapidly invade and smother low growing native species eventually taking over completely totally shading out plants beneath. Spread is assisted by birds that use plant material for nesting carrying seeds into uninfested areas.	Environmental Pest
Old Man's Beard	Old Man's Beard is a vigorous climbing vine. Left uncontrolled it forms a dense mat of tangled vines shading out ground cover beneath and eventually killing the supporting trees. An extremely fast growing plant, vines are capable of growing up to 10m per year. Unlike native clematis species which are evergreen, Old Man's Beard is deciduous. Seedlings have may 3 leaflets but 5 is most common and an easy identification tool (native clematis species all have 3 leaflets). Creamy white flowers are produced from December to May followed by fluffy white seeds from around April.	Environmental and Production Pest
Pampas Purple and White	An extremely invasive large clump forming grass with razor sharp leaves growing to 4m+. Sometimes confused with native Toetoe, but distinguishable by the lack of a white waxy leaf sheath, or 'curly wood shaving' dead leaves around the base of the plant. Large fluffy purple/white flowers are produced January – June which fade to 'dirty' white as seed forms. A huge number of seed is produced per seed head which is dispersed long distances by wind and occasionally water. Pampas easily establishes on burnt or disturbed ground and quickly outcompetes native vegetation. It is also a problem in forestry shading out newly planted areas and creating a fire danger due to the large amount of dry matter it produces.	Environmental and Production Pest
Purple Loosestrife	Rated one of the worst agricultural and environmental weeds in the United States, Purple Loosestrife is a herbaceous perennial plant with square stems growing 1-2m high. Purple flowers are visible from December to February and plants have the ability to	Environmental and Production Pest

Species	Description	Status
	produce up to 2 million seeds per year. This aggressive seeding means Purple Loosestrife is able to invade large areas, displacing native species and changing habitat for native birds and fish. Dense stands of Purple Loosestrife can clog drains and irrigation ditches.	
Wild Ginger Kahili and Yellow	A fast growing non-woody perennial, Wild Ginger forms dense stands amongst native vegetation displacing native species and preventing seedlings from germinating. A large yellow flower head on Kahili Ginger and a smaller creamy yellow white flower head on yellow ginger are easily identifiable.	Environmental Pest
Yellow Bristle Grass	An extremely invasive annual grass. Yellow Bristle Grass is a big problem in the central North Island. Grazing avoidance allows for a huge seed set, and lower nutritional values in instances where it is grazed can cause a loss of production. Costs associated with maintaining production through supplementary feed on a moderately infested farm are estimated to be over $300/ha. At this stage YBG is only known to be located at roadside sites through the Buller Gorge.	Production Pest
Yellow Flag Iris	A robust perennial that forms dense rhizomes and thrives in swampy habitats around lagoons and estuaries. Yellow Flag Iris has clumps of sword like leaves growing 1-2m tall. Spring sees obvious yellow flowers produced followed by seed capsules containing many brown 'corky' seeds. Mainly spread through seed carried by water, but also possible from rhizome fragments. Yellow Flag Iris is poisonous to stock and capable of exacerbating the effects of flooding by restricting flow. Much of the region is suitable habitat including roadside and farm drains, estuaries and lagoons.	Environmental and Production Pest

Rule 6.3.1: All Landowners and/or occupiers within the West Coast must destroy all pests listed in Table 6-3 on their land except if under a management programme agreed between Council and the landowner and/or occupier.

Explanation of the rule

The purpose of this Rule 6.3.1 is to contain the pests listed in Table 6-3 to land already infested by these pests, and reduce the population in infested areas over time.

A breach of Rule 6.3.1 will create an offence under Section 154 N(19) of the Act. Any person or corporation who fails to comply with this rule is liable to penalties as prescribed under Section 157(5) of the Act.

Table 6-4 Specific Progressive Containment Pests

Species	Description	Status
Banana Passionfruit	Banana Passionfruit is a high-climbing evergreen vine. The glossy leaves are three lobed with toothed edges and hairy underneath. The tubular pink flowers have yellow and white centres. The flowers grow 6-9cms long, developing into oval fruit up to 14cm long. Fruit are green at first, ripening to yellow or orange-yellow. The pulp is orange, sweet and edible with many black seeds. The plant is spread by seed, bird and also from stem fragments which revegetate readily. The rapid growth and dense, smothering habit of the Banana Passionfruit vine are the key reasons for it having become a pest plant. If allowed to establish in forestry, vines smother seedlings and mature trees a like. If allowed to smother bush margins the plants will also reduce natural biodiversity. The fruit also provides food for pest animals such as rats and possums.	Environmental and Production Pest
Broom	Broom develops into a medium green, deciduous shrub which grows up to 3m tall. It has a characteristic upright growth with small leaves. Prolific bright yellow pea-like flowers appear in October and November. These develop over summer into	Environmental and Production Pest

Species	Description	Status
	brownish-black seed pods which explode when mature, ejecting seed several metres away. Broom is an adaptable plant which grows well in high rainfall areas over a range of soil conditions. Unchecked, the spread of Broom is ensured by its vigorous growth habit, excellent seed dispersal mechanisms (a single mature plant can eject up to 18,000 seeds per year) and strong seed viability. The plant proliferates because seed banks can remain viable in the soil for several decades and seeds are easily transported by gravel, mud, water, machinery and animals to aid plant spread. Broom is also unpalatable to stock, forms dense thickets which shade and reduce pasture, provides cover for pest animals such as possums, hares and hedgehogs, and takes over open, braided river beds and roadsides.	
Elaeagnus	Vigorous, dense, evergreen shrub, scrambling over support to 20m tall, with a very tough, suckering rootstock. Stems are long, arching, tough, with young shoots being brown and scaly and older stems often with spines. Leaves are arranged alternately on the stems, are hairless above, and silvery or brown and scaly (often densely) underneath. Long lived and capable of fixing nitrogen in the soil preventing native species growing where they may have before. Spread is by seeds excreted by birds or by root suckering.	Environmental Pest
Himalayan Honeysuckle	Himalayan Honeysuckle is a perennial; many stemmed deciduous or semi-deciduous plant which grows 2-3m tall. Stems are cane-like being green and hollow, becoming woodier as they mature. Leaves are up to 15cms long, heart-shaped, and arranged as opposite pairs on the stems. Drooping spikes of white funnel shaped flowers appear from December until May. These are followed by juicy, dark brownish-purple berries containing abundant seed. Seed is spread by birds or water. Once established dense thickets are formed preventing revegetation of native species, paving the way for other weeds, particularly vine infestations. Himalayan Honeysuckle and also dominate establishing production forests. Whilst plants are not long-lived, they can change natural forest ecosystems.	Environmental and Production Pest
Japanese Honeysuckle	A vigorous evergreen climber with tough wiry stems which twine clockwise. Stems are purplish and hairy when young turning woody as they mature. Sweetly scented white flowers are produced September – May which yellow as they age. These are followed by black berries. Japanese Honeysuckle quickly climbs into canopies up to 10m high smothering support plants and shading out lower growing natives. Spread is by bird or improper garden rubbish disposal.	Environmental Pest
Knotweed Giant and Asiatic	Asiatic and Giant knotweed grow rapidly from an extensive fleshy underground root system, forming dense, long-lived thickets. They exclude other desirable species and prevent native seedlings from establishing. Asiatic knotweed and Giant knotweed are spread through the movement of their roots or when shoots and roots are transported by people. They are very hardy plants and are difficult to eradicate. It grows primarily in disturbed areas, roadsides and river banks. Asiatic knotweed and Giant knotweed occur at sites predominantly in the northern half of the region.	Environmental and Production Pest

Specific progressive containment areas

The specific progressive containment pests listed in Table 6-4 are all present within the West Coast to differing levels. In some places these pests are widely established beyond a level where eradication is possible. However, some areas have very limited or no infestations and these areas are worth protecting. Two such areas have been identified on the West Coast, the Coast Road Progressive Containment Area, and the Karamea Progressive Containment Area. All the pests listed in Table 6-4 are capable of causing

considerable damage to production or environmental values if left to establish in these areas. The specific progressive containment areas are mapped on pages 27 and 28 of this RPMP.

Rule 6.3.2: Specific rules for Karamea Progressive Containment Area: Landowners and/or occupiers within the progressive containment zone shown on Map 6-1 must destroy any Asiatic or Giant Knotweed, Elaeagnus, Japanese Honeysuckle or Himalayan Honeysuckle present on their property.

Explanation of Rule 6.3.2
The purpose of this rule is to contain the pests listed in Table 6-4 to land already infested by these pests, and reduce the population in these areas over time.

Rule 6.3.3: Specific rules for Coast Road Progressive Containment Area: Landowners and/or occupiers within the progressive containment zone shown on Map 6-2 must destroy any Broom, Japanese Honeysuckle, Himalayan Honeysuckle, Elaeagnus or Banana Passionfruit present on their property.

Explanation of Rule 6.3.3
The purpose of this rule is to contain the pests listed in Table 6-4 to land already infested by these pests, and reduce the population in these areas over time.

A breach of rules 6.3.2 or 6.3.3 will create an offence under Section 154 N(19) of the Act. Any person or corporation who fails to comply with this rule is liable to penalties as prescribed under Section 157(5) of the Act.

Map 6-1 **Karamea Progressive Containment Area**

Map 6-2 **Coast Road Progressive Containment Area**

Aquatic Progressive Containment Pests

Aquatic progressive containment pests are pests which are present within the regions water ways, but capable of negatively effecting conservation, production or recreational values if allowed to spread. The objective with these pests is to contain infestations to waterbodies already infested, and progressively reduce the size of those infestations where practicable.

Table 6-5 Aquatic Progressive Containment Pests

Species	Description	Status
Egeria	Similar to Lagarosiphon, Egeria is an oxygen weed. Plants are usually totally submerged but stems can grow right to the surface of the water forming a tangled mat. The only flowering oxygen weed in New Zealand, small white flowers are noticeable from November to January. Egeria impedes water flows, negatively impacts recreational values and outcompetes native vegetation.	Environmental and Recreation Pest
Lagarosiphon	Also known as oxygen weed Lagarosiphon is a submerged perennial aquatic plant which grows to a depth of 6m. It has spiraled leaves on slender, brittle stems which grow to 5m long. Lagarosiphon is spread quickly by stem fragments, either moving in water or transported between waterways by people on boats, trailers, or fishing nets etc. Lagarospihon displaces and smothers native aquatic vegetation, impacts recreational values, restricts water flows, and impedes fish accessibility to spawning grounds.	Environmental and Recreational pest
Parrots Feather	A perennial freshwater weed, Parrots Feather forms floating mats across the surface of the water. Submerged leaves are reddish turning blue/green once emerged from the water. Parrots Feather does not set seed in New Zealand but is readily spread by stem fragments moving in water currents. Parrots Feather chokes waterways, impeding water flow and exacerbating flooding, it also outcompetes native vegetation.	Environmental and Production Pest

Rule 6.3.4: No person within the West Coast region shall intentionally distribute or dispose of any of the pests listed in Table 6-5, unless at a legal landfill.

Explanation of Rule 6.3.4

The purpose of this rule is to contain the pests listed in table 6-5 to waterbodies already infested, and prevent new infestations into clear waterbodies via aquarium liberations or movement of organic material.

Rule 6.3.5 for Parrots Feather: Land Occupiers within the West Coast will destroy any Parrots Feather present on their property, not less than once annually, to minimise the risk of spread, and protect production and environmental values.

Explanation of rule 6.3.5

The purpose of this rule is to contain Parrots Feather to land already infested, minimise the risk of spread, and impacts on production and the environment.

A breach of rules 6.3.4 or 6.3.5 will create an offence under Section 154 N(19) of the Act. Any person or corporation who fails to comply with this rule is liable to penalties as prescribed under Section 157(5) of the Act.

6.4 Sustained Control Pests

Sustained control pests are pests which are widely established within the region, but if left uncontrolled have the capacity to cause undue costs on neighboring properties which are uninfested or under active management. Enforcement of these rules will only be undertaken upon receiving a complaint from an adjacent occupier.

Objective

Over the duration of the Plan, to sustainably control pests listed in Table 6-6 to prevent or reduce adverse effects on economic wellbeing, the environment and recreational values.

Principal Measures

- Requirement to act: Landowners and/or occupiers are required to undertake control on any pest listed in Table 6-6 on their property in accordance with the rules.
- Council inspection: The Council will undertake surveillance/compliance inspections upon adjacent occupier complaint.
- Advocacy and education: Public information on how to identify and control pests listed in Table 6-6 will be made available to the public.

Table 6-6 Sustained Control Pests

Species	Description	Status
Broom	Broom develops into a medium green, deciduous shrub which grows up to 3m tall. It has a characteristic upright growth with small leaves. Prolific bright yellow pea-like flowers appear in October and November. These develop over summer into brownish-black seed pods which explode when mature, ejecting seed several metres away. Broom is an adaptable plant which grows well in high rainfall areas over a range of soil conditions. Unchecked, the spread of Broom is ensured by its vigorous growth habit, excellent seed dispersal mechanisms (a single mature plant can eject up to 18,000 seeds per year) and strong seed viability. The plant proliferates because seed banks can remain viable in the soil for several decades and seeds are easily transported by gravel, mud, water, machinery and animals to aid plant spread. Broom is also unpalatable to stock, forms dense thickets which shade and reduce pasture, provides cover for pest animals such as possums, hares and hedgehogs, and takes over river beds and roadsides.	Production and Environmental Pest
Giant Buttercup	Growing from a sturdy rhizome, Giant Buttercup becomes a hairy perennial up to 1m tall. Seedlings are initially hard to identify but once the plant begins growing strongly in the early spring, the characteristic adult large, pointed leaves, with deep incisions, make for ready identification. This is further confirmed when the 25mm diameter yellow flowers begin to open in November and December. Giant Buttercup is a pervasive, difficult to control pastoral weed, particularly on dairy farms where cows avoid it because of its bitter taste. Plant populations tend to increase under dairy grazing pressure. Giant Buttercup also thrives after fertilizer applications, and in some areas has become resistant to phenoxy herbicides, such as 24-D, MCPA and MCPB, after repeated applications. An infestation of Giant Buttercup causes both reduced farm productivity and ongoing control costs.	Production pest
Gorse	Gorse is a deeply rooted woody perennial which grows up to 4m in height. It can form dense, impenetrable and very prickly thickets. The medium green leaves found on new growth rapidly change to spines as the plant matures and on older plants the inner growth becomes brown and dry. Branches on older plants can grow to up to 10cm in diameter. Gorse develops prolific deep yellow flowers, attractive to honey bees, between May and November. Flowering is followed by development of 25mm long black seed pods with soft grey hairs. Under full sun the ripe pods split explosively to disperse the seeds several metres away. Gorse seeds can lie dormant in the ground for many decades. As the seed is highly viable, even after being in the ground for many years, Gorse is difficult to eradicate, especially on steep sloping pasture land and in river beds. Whilst gorse is a recognised as soil conditioner because its roots can fix nitrogen, and that large patches are ideal as nursery areas for native revegetation, Gorse can impose significant costs on farmers, reduce stocking rates and negatively affect production values.	Production Pest
Ragwort	Yellow Ragwort is an erect biennial or perennial herb which reproduces from crowns, roots or seeds. The leaves are dark green and deeply incised into irregular segments giving the plant a raggedy appearance. By early winter, the characteristic leafy ragwort "rosette" has developed standing 2-5cm high and up to 15cm in diameter. This becomes a "cabbage rosette" by late winter. In spring reddish – purple stems begin to grow, reaching up to 60cm high before branching. Between November and January a	Production Pest

Species	Description	Status
	bright yellow daisy like flower will bloom from each branch, before the plant goes to seed. If these blooms are allowed to seed, one plant can produce up to 250,000 seeds which can remain dormant in the soil for up to 16 years. Yellow Ragwort is a pest plant because it can have a marked effect on farm productivity, particularly dairy farms, if left to grow unchecked. It is toxic to grazing animals, causing liver damage.	

Rule 6.4.1 Good Neighbour Rule for Gorse: Landowners and/or occupiers within the West Coast must destroy all Gorse on their land within 10m of a boundary with an adjacent property, prior to flowering, where the adjacent owner and/or occupier is managing their land for production or environmental values and taking reasonable measures to control Gorse or its impacts. Control will be completed within 30 days of written notification being issued unless by agreement between the occupier and the Council.

Explanation of rule 6.4.1
The purpose of this rule is to manage the spread of Gorse that would cause unreasonable costs to the adjacent owner and/or occupier where they are actively managing Gorse for production or environmental values.

The Council will administer the rule, and will initiate any action concerning non-compliance only after receiving a complaint from the adjacent land owner/occupier.

Rule 6.4.2 Good Neighbour rule for Broom: Landowners and/or occupiers within the West Coast must destroy all Broom on their land within 10m of a boundary with an adjacent property, prior to flowering, where the adjacent owner and/or occupier is managing their land for production or environmental values and taking reasonable measures to control Broom or its impacts. Control will be completed within 30 days of written notification being issued unless by agreement between the occupier and the Council.

Explanation of Rule 6.4.2
The purpose of this rule is to manage the spread of Broom that would cause unreasonable costs to the adjacent owner and/or occupier where they are actively managing Broom for production or recreational values.

The Council will administer the rule, and will initiate any action concerning non-compliance only after receiving a complaint from the adjacent land owner/occupier.

Rule 6.4.3 Good Neighbour Rule for Ragwort: Landowners and/or occupiers within the West Coast must destroy all Ragwort on their land within 20m of a boundary with an adjacent property, prior to flowering, where the adjacent owner and/or occupier is managing their land for production or environmental values and taking reasonable measures to control Ragwort or its impacts. Control will be completed within 30 days of written notification being issued, unless by agreement between the occupier and the Council.

Explanation of Rule 6.4.3
The purpose of this rule is to manage the spread of Ragwort that would cause unreasonable costs to the adjacent owner and/or occupier where they are actively managing Ragwort for production values.

The Council will administer the rule, and will initiate any action concerning non-compliance only after receiving a complaint from the adjacent land owner/occupier.

Rule 6.4.4 Boundary Rule for Giant Buttercup: Landowners and/or occupiers within the West Coast must destroy all Giant Buttercup on their land within 5m of a boundary with an adjacent property, prior to flowering. Control will be completed within 30 days of written notification being issued, unless by agreement between the occupier and the Council.

Explanation of Rule 6.4.4
The purpose of this rule is to manage the spread of Giant Buttercup that would cause unreasonable costs to the adjacent owner and/or occupier where they are actively managing Giant Buttercup for production values.

The Council will administer the rule, and will initiate any action concerning non-compliance only after receiving a complaint from the adjacent land owner/occupier.

A breach of Rules 6.4.1, 6.4.2, 6.4.3, or 6.4.4 will create an offence under Section 154 N(19) of the Act. Any person or corporation who fails to comply with Rules 6.4.1, 6.4.2, 6.4.3, or 6.4.4 is liable to penalties as prescribed under Section 157(5) of the Act.

7 Monitoring

7.1 Measuring what the objectives are achieving

Programme	Anticipated result	Indicator	Method of monitoring	Frequency of monitoring	Frequency of reporting
Exclusion	No incursions of listed pests	Continued absence within the region. Zero density at historic sites	Population assessment	As reported	Annual
Eradication	Decreasing populations at active sites towards zero	Presence of absence of seeding plants	Population assessment	As reported	Annual
Progressive Containment	Decreasing population at known sites. Minimal new sites identified.	A complete compliance register showing resolution at all sites.	Compliance register	As reported	Annual
Sustained Control	All complaints received will be resolved in a timely manner	A complete complaints register showing resolution of all complaints	Complaints register	As Reported	Annual

7.2 Monitoring the management agency's performance

The West Coast Regional Council is the management agency. As the management agency responsible for implementing the Plan, the Council will:

- Prepare an operational plan within three months of the Plan being approved;
- Review the operational plan, and amend it if needed;
- Report on the operational plan each year, within five months after the end of each financial year;
- Maintain up-to-date databases of complaints, pest levels and densities, and responses from the Council and landowners and/or occupiers.

7.3 Monitoring plan effectiveness

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

- The Act is changed, and a review is needed to ensure that the Plan is not inconsistent with the Act;
- Other harmful organisms create, or have the potential to create, problems that can be resolved by including those organisms in the Plan;
- Monitoring shows the problems from pests or other organisms to be controlled (as covered by the Plan) have changed significantly; or
- Circumstances change so significantly that the Council believes a review is appropriate.

If the Plan does not need to be reviewed under such circumstances, it will be reviewed in line with s100D of the Act every 10 years. Such a review may extend, amend or revoke the Plan, or leave it unchanged.

The procedures to review the Plan will include officers of the Council:

- Assessing the efficiency and effectiveness of the principal measures (specified for each pest and other organism (or pest group or organisms) to be controlled to achieve the objectives of the Plan;
- Assessing the impact the pest or organism (covered by the Plan) has on the region and any other harmful organisms that should be considered for inclusion in the Plan; and
- Liaising with the public and key interest groups on the effectiveness of the Plan.

Part Three
Procedures

8. Powers conferred

8.1 Powers under Part 6 of the Act

The Principal Officer (Chief Executive) of the West Coast Regional Council may appoint authorised persons to exercise the functions, powers and duties under the Act in relation to a RPMP.

The West Coast Regional Council will use those statutory powers of Part 6 of the Act as shown in Table 8.1.1, where necessary, to help implement this Plan.

Table 8.1.1: Powers from Part 6 to be used

Administrative provisions	Biosecurity Act Reference
The appointment of authorised and accredited persons	Section 103(3) & (7)
Delegation to authorised persons	Section 105
Power to require assistance	Section 106
Power of inspections and duties	Section 109, 110 & 112
Power to record information	Section 113
General powers	Section 114 & 114A
Use of dogs and devices	Section 115
Power to intercept risk goods	Section 120
Power to examine organisms	Section 121
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
Options for cost recovery	Section 135
Failure to pay	Section 136

Note: the Council's Standard Operating Procedures manual sets out the procedures the Council will follow when landowners 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

A landowner and/or occupier, or any person, in breach of a plan rule creates an offence under s154N(19) of the Act. Where the rule provides for this, the Council can seek prosecution under s157(5) of the Act for those offences.

A Chief Technical Officer (employed under the State Sector Act 1988) may appoint authorised people to implement other biosecurity law considered necessary. One example is where restrictions on selling, propagating and distributing pests (under s52 and s53 of the Act) must be enforced. Another example is where owners and/or occupiers of land are asked for information (under s43 of the Act).

8.3 Power to issue exemptions to plan rules

Any landowner and/or occupier, or other person, may write to the Council to seek an exemption from any provision of a Plan rule set out in Part Two of the RPMP. However, a rule may state that no exemptions will be considered, or it may limit the circumstances to which exemptions apply (e.g. scientific purposes). The requirements in s98 of the Act must be met for any person to be granted an exemption. The Council will keep and maintain a register that records the number and nature of exemptions granted. The public will be able to inspect this register during business hours.

9. Funding

9.1 Introduction

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

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

9.2 Analysis of benefits and costs

An analysis of the expected costs and benefits associated with implementing the Plan has been undertaken. It is published alongside the Plan in the West Coast Regional Pest Management Plan Cost Benefit Analysis Report.

9.3 Beneficiaries and exacerbators

Table 9-1 below shows two groups of people: those who benefit from controlling pests (beneficiaries); and those who contribute to the pest problem (exacerbators).

Table 9-1: Beneficiaries and exacerbators

Beneficiaries	Exacerbators
• Rural landowners and/or occupiers, who will benefit from production values being protected. • Adjacent landowners and/or occupiers, who will benefit from pests not crossing the boundary onto their property. • Regional community, (including Crown agencies) who will benefit from pests not spreading beyond the Progressive Containment Areas. • Regional community, (including Crown agencies) who will benefit from conservation values being protected.	• Landowners and/or occupiers (including Crown agencies) who do not undertake management of the pests listed in the Plan are the main exacerbators. • Persons who knowingly propagate and sell these pests are also exacerbators.

9.4 Funding sources and reasons for funding

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

- People who have an interest in the Plan;
- Those who benefit from the Plan; and
- Those who contribute to the pest problem.

Funding must be sought in a way that reflects economic efficiency and equity.

As landowners and/or occupiers are both identified exacerbators and beneficiaries to varying degrees, it is proposed that the implementation of this Plan be funded principally by a general rate levied on every separate rateable property in the West Coast region. It is considered that a uniform rate is the most appropriate method for charging ratepayers for the services provided by the Regional Pest Management Plan.

9.5 Anticipated costs of implementing the Plan

The anticipated costs of implementing the proposed RPMP reflect a best estimate of expenditure levels. Funding levels will be further examined and set during subsequent Long Term Plan and Annual Plan processes. The anticipated cost of implementing the proposed Plan is $40,000.

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

Glossary

Terms marked with an * are defined in the Biosecurity Act 1993.

Authorised person* means "a person for the time being appointed an authorised person under section 103 of this Act."

Beneficiary means the receivers of benefits accruing from the implementation of a pest management measure or strategy.

Chief Technical Officer* means a person appointed a chief technical officer under Section 101 of the Act.

Crown agencies includes any government organisation e.g. the Department of Conservation, Land Information New Zealand, Ministry of Defense etc.

Distribute means to propagate, offer for sale or sell, barter, transport, or in any way aid in the spread of a pest plant.

Eradicate in relation to an organism, means to completely remove it from the region.

Exacerbator means a person, who by their activities or inaction, contributes to the creation, continuance or aggravation of a pest plant management problem.

Landowner/occupier* has the same meaning as occupier in the Biosecurity Act 1993: "occupier,—
(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."

Principal Officer* means:
a) in relation to a regional council, its chief executive; and
b) in relation to a region, the chief executive of the region's regional council and includes an acting chief executive.

Propagate means to multiply or produce by sowing, grafting, breeding or any other way.

Road reserves means all formed roads (including road verges) from the centre of the road to an abutting property boundary and includes all bridges, culverts and fords forming part of any road, but does not include unformed (paper) roads.

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Sell includes barter; and also includes offering, exposing, or attempting to sell, or having in possession for sale, or sending or delivery for sale, causing or allowing to be sold, offered, or exposed for sale.

Service delivery means works conducted by the Council or Department of Conservation, with no direct cost to the property owner.

Appendix 1A
Exclusion Pest Plant Information Sheets

Coltsfoot

Botanical Name
Tussilago farfara

Family
Asteraceae

Also known as
Coughwort, dovedock, horse-hoof, clayweed, ginger root

Where is it originally from?
Europe and Asia

What does it look like?
Low-growing, mat-forming, summer-green perennial herb with stout rootstock and rhizomes. Shallowly-lobed kidney-shaped to round, or heart-shaped leaves (3-20 cm diameter) with finely toothed edges at the base of the plant are hairless above, woolly below, and on long hairy stalks. Erect flowering stem (5-30 cm tall) has 10 or more oval to triangular leaves (up to 1 cm long). Single yellow daisy-like flowers (6-10mm diameter) at top of stem appear in October before leaves and are followed by hairy seed capsules (3-5 mm long). Plant dies back to rootstock over winter.

Are there any similar species?
Winter heliotrope (Petasites fragrans) has pink-purple flowers and non-lobed leaves with large-toothed edges.

Why is it a pest?
Matures and grows quickly, and has fast spreading rhizomes and a persistent rootstock. Produces very many, very well dispersed seeds. Tolerates very wet to occasionally dry conditions, moderate to cool temperatures, semi-shade, and damage.

How does it spread?
Seed spread by wind, and rhizomes by soil and water movement.

What damage does it do?
Forms dense mats in damp, disturbed sites, excluding other species.

Which habitats is it likely to invade?
Short tussock, wetland, and bare land.

What can I do to get rid of it?
1. Dig out very small patches (all year round). Dispose of at refuse transfer station or burn.

2. Weed wipe (spring-summer): glyphosate (333ml/L) + penetrant or metsulfuron-methyl 600g/kg (1g/L) + penetrant.
3. Spray (spring-summer): glyphosate (10ml/L) + penetrant or metsulfuron-methyl 600g/kg (1g/10L) + penetrant.

What can I do to stop it coming back?

Rootstock and rhizomes resprout so follow up 3 monthly until eradicated. Densely replant where appropriate to prevent reseeding.

Smilax

Botanical Name

Asparagus asparagoides

Family

Liliaceae family

Also known as

Bridal creeper, Asparagus praecox, Asparagus medeoloides, Myrsiphyllum asparagoides

Where is it originally from?

South Africa

What does it look like?

Scrambling or twining perennial with dense clusters of white, fleshy, tuberous roots and twisted, thin, wiry, branched green stems to 3m. Ovalish, pointed leaves (10-35 x 4-15 mm) with 7 veins, one of which appears at each node, are actually cladodes (flattened leaf-like stems). Greenish-white flowers (5-6 mm) appear from July to August, followed by round red berries (6-10 mm) each containing 2-8 tiny black seeds.

Are there any similar species?

Large leaf-like cladodes distinguish smilax from other Asparagus species.

Why is it a pest?

Has a moderate growth rate, tough, long-lived tubers resprout at will, and the plentiful seeds are distributed widely. Tolerates moderate shade to full sun, low to moderate rainfall, salt and wind, but prefers good drainage.

How does it spread?

Birds spread the seeds. Tubers resprout and are spread by soil and water movement. Common sources include roadsides, hedgerows and wastelands.

What damage does it do?

Forms dense patches and smothers low growing plants and seedlings, usually in low canopy habitats. Can eliminate vulnerable native coastal species.

Which habitats is it likely to invade?

Poor or volcanic soils, bare rock, sand, coastal and estuarine zone, bluffs, rocks, gumland, pohutukawa forest, and inshore islands.

What can I do to get rid of it?

1. Dig out tubers. Dispose of them at a refuse transfer station or burn them. Leave on site to rot down.
2. Weed wipe (spring-early summer only): glyphosate (333ml /L), no penetrant.
3. Spray (spring-early summer only): glyphosate (20ml /L + penetrant). Do not add penetrant when spraying against tree trunks. Spray lightly, avoiding runoff.

What can I do to stop it coming back?

Tubers resprout after spraying, stems break at ground level so plants cannot be pulled out. Grubbing tubers can expose soil, allowing seeds to germinate. Always follow up on treated areas at least 6-monthly. Seeds probably not long-lived. Replant treated areas where possible after 2-3 treatments to establish dense ground cover and minimise reinvasion.

Spartina

Botanical Name

Spartina anglica, S. alterniflora

Family

Poaceae family

Also known as

American spartina, hybrid spartina, cord grass

Where is it originally from?

North America, England

What does it look like?

Perennial, clump-forming grass to 1 m with rhizomes and fibrous roots and erect stems (4-9 mm diameter) with many brownish leaf sheaths. Alternate leaves (5-45 x 4-15 mm) are deeply wide-ribbed on upper surface and have ligules (1-3 mm long). Seedheads are occasionally seen, and seed is occasionally produced at some sites.

Are there any similar species?

Spartina is the only grass species found in the inter-tidal zone apart from the small native non-grass Zostera. Tall fescue, couch and other grass species are similar to spartina but none of these are found in the intertidal zone.

Why is it a pest?

Colonises the bare inter-tidal zone where it forms dense clumps and traps sediment. Tolerates all weathers and temperatures, fire, grazing, and other damage. Rhizomes spread slowly and broken fragments resprout easily.

How does it spread?

Livestock, propellors, nets and so on dislodge rhizome fragments, which are then spread by tidal and current movement. Also spread through intentional planting. Can survive long-term at sea, which means that it can travel long distances with the currents.

What damage does it do?

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, creating dry 'meadows'. It can reduce large estuaries and shallow harbours to thin drains surrounded by rough pasture, resulting in an immense loss of biodiversity.

Which habitats is it likely to invade?

Estuaries, mangroves and other intertidal zones with soft sediment.

What can I do to get rid of it?

Spartina is controlled by the Department of Conservation - contact your local office for more information.

Tree Privet

Botanical Name
Ligustrum lucidum

Family
Oleaceae family

Also known as
Japanese privet, broadleaf privet

Where is it originally from?
Temperate and tropical regions, China

What does it look like?
Small-to-large evergreen, hairless tree to 15+ m (sometimes a dense shrub) with distinctive lumpy warts on the stems. Dark green leaves (5-13 x 3-6 cm) are glossy on the top surface and arranged in opposite pairs on the stems. Tiny fragrant, creamy flowers make up flowerheads (25 x 20 cm) produced from November to March and are followed by bluish or purplish-black berry-like fruit (6 x 5 mm) coated with a powdery 'bloom'.

Are there any similar species?
Camphor laurel and native Nestegis species (maire) are similar.

Why is it a pest?
Produces many highly-viable seeds in widely-dispersed berries. Fast-growing, very long-lived (100 years +) and forms very dense, tall stands. Very tolerant of shade, frost, damage, grazing, all well-drained soil types, high to moderate temperatures, damp or drought conditions, salt and wind.

How does it spread?
Birds, vegetation dumping and soil movement all spread seeds. Common seed sources are roadsides, farm and urban hedges, gardens and wasteland.

What damage does it do?
Forms dense carpet of seedlings on forest floor, and grows through understorey to dominate and replace canopy trees in most forest types. Poisonous berries may possibly impact on native fauna, especially insects.

Which habitats is it likely to invade?
Most coastal and lowland forest types (intact and disturbed), shrublands, fernland, cliffs, and coastline.

What can I do to get rid of it?

1. Pull or dig seedlings (all year round). Leave on site to rot down.
2. Cut and paint stump (within 15 minutes of cutting): glyphosate (200ml/L) or metsulfuron-methyl 600g/kg (5g/L + penetrant) or Tordon Brushkiller (200ml/L)
3. Frilling: make deep cuts into the sapwood at regular intervals around the base of the tree, taking care not to ring-bark the plant, immediately saturate the cuts with metsulfuron-methyl 600 g/kg (5g/10L + penetrant) or undiluted Tordon Brushkiller.
4. Injection method: Drill sloping holes into the sapwood at regular intervals around the tree, immediately saturate with metsulfuron-methyl 600 g/kg (5g/10L + penetrant) or undiluted Tordon Brushkiller.
5. Spray (spring-autumn): metsulfuron-methyl 600g/kg (5g/10L + penetrant).

What can I do to stop it coming back?

Untreated stumps resprout. Reseeds profusely in bared areas. Follow up 6-monthly, easiest to spot during spring flowering. Don't replant until seedling regrowth ceases, as privet will grow through groundcover.

White Edged Nightshade

Botanical Name
Solanum marginatum

Family
Solanaceae

Where is it originally from?
North Africa

What does it look like?
White Edged Nightshade is a perennial shrub which grows to 5m. It is easily recognisable by its leaves, which are chalky-white on the undersides and also on the veins and margins of the upper leaf. The stems are clothed in white felt-like hairs with long yellow prickles while the leaves have long prickles along the lines of the veins. The plant has white flowers, sometimes with purple veins which bloom in clusters of 2-10 at the ends of the branches. These are followed by formation of large berries which change from green to yellow as they ripen. The fruit resemble small tomatoes. Plants are spread mostly by soil and water movement as birds do not generally like the fruit.

Why is it a pest?
White Edged Nightshade is considered a pest plant because it has the capacity to form dense stands in wasteland areas (roadsides, bush margins, scrub and poor pasture land), which receive warm sun and good rainfall. The dense thickets displace pasture and can become impenetrable for both humans and stock. The plant is toxic and people have become ill after tasting the fruit.

How does it spread?
Stock, water, movement of machinery and feral animals all help spread the seeds which appear to have a long soil life.

What damage does it do?
The dense thickets displace pasture and can become impenetrable for both humans and stock. The plant is toxic and people have become ill after tasting the fruit.

Which habitats is it likely to invade?
Roadsides, bush margins, scrub and poor pasture land.

What can I do to get rid of it?

1. Pull or dig seedlings (all year round). Leave on site to rot down.
2. Cut and paint stump (within 15 minutes of cutting): glyphosate (200ml/L) or metsulfuron-methyl 600g/kg (5g/L + penetrant) or Tordon Brushkiller (200ml/L)
3. Spray with glysophate based products such as Roundup or triclopr/picloram based products such as Tordon NF or Grazon. Suggested mixes are: 1. Tordon Brushkiller, 60ml/10L water 2. Tordon Gold, 120mls/10L water).

Appendix 1B
Eradication Pest Plant Information Sheets

African Feather Grass

Botanical Name
Cenchrus macrourus

Family
Poaceae (grass)

Also known as
Pennisetum macrourum, bedding grass, veld grass, giant veld grass, pennisetum

Where is it originally from?
Africa

What does it look like?
Perennial, clump-forming grass (<2 m) with deep fibrous roots and rhizomes (7 mm diameter and <2 m long) that form new plants. Tough, harsh, strongly ribbed leaves (13 mm x 1.2 m) are light green on top and darker green underneath. Round erect purplish-white stems (up to 2m tall) have many fine hairs that break off when touched, causing skin irritations. Narrow, cylindrical, spike-like flowerheads (10-30cm long, 10-20mm diameter) contain many seeds, each with bristles (10 mm).

Are there any similar species?
Perennial, clump-forming grass (<2 m) with deep fibrous roots and rhizomes (7 mm diameter and <2 m long) that form new plants. Tough, harsh, strongly ribbed leaves (13 mm x 1.2 m) are light green on top and darker green underneath. Round erect purplish-white stems (up to 2m tall) have many fine hairs that break off when touched, causing skin irritations. Narrow, cylindrical, spike-like flowerheads (10-30cm long, 10-20mm diameter) contain many seeds, each with bristles (10 mm).

Why is it a pest?
Rhizomes create dense spreading masses in well-lit sites. Seeds prolifically from two years of age with a seed viability of over 80%. Long-lived, medium to fast growing, and tolerant of many soil types, hot or cold temperatures, drought, wind, salt, damage, and grazing.

How does it spread?
Rhizomes creep outwards and fragments are spread by soil movement and machinery. Seeds are spread via water and by wind for short distances, and also in clothing, animals, pelts.

What damage does it do?
Outcompetes native pioneer species in vulnerable habitats and also invades established plant communities. Has the potential to cause build up of sand and changes in habitat, leading to erosion or flooding elsewhere, and loss of dunelakes and wetlands. It is also a fire hazard and can harbour rats and mice.

Which habitats is it likely to invade?
Bare sand, dunelakes, estuaries, coastline, river systems, low shrubland, dry and disturbed forest, potentially throughout New Zealand.

What can I do to get rid of it?

Don't attempt to control it when mature seed is present as this increases the risk of seed being spread on clothing and so on.

1. Dig out small infestations. Dispose of at refuse transfer station or burn.
2. Weed wipe: glyphosate (200ml/L) or Gallant (200ml/L).
3. Spray (spring-autumn): glyphosate (15ml/L) + penetrant.
4. Slash and spray regrowth (spring-autumn): Gallant (150ml/10L).

What can I do to stop it coming back?

Rhizomes resprout and seeds germinate in bare sites. Unpalatable to livestock so do not graze to control. Followup spraying will be needed at least 6-monthly until no further regrowth occurs, so replant the area only with groundcover species that will not be affected by Gallant spraying (that is, no grasses or flaxes).

Cape Ivy

Botanical Name

Senecio angulatus

Family

Asteraceae (daisy) family

Also known as

Where is it originally from?

South Africa

What does it look like?

Scrambling perennial, often forming a dense tangled shrub to 2-3 m tall, with wiry to woody stems that are sparingly branched. Very fleshy, leathery leaves have 1-3 coarse serrations on each side, and the uppermost leaves are smaller, narrower and occasionally smooth edged. Dense clusters of yellow, ragwort-like flowers (11 mm diameter) are produced from March to August, followed by fluffy seeds.

Are there any similar species?

German ivy (Senecio mikanioides) is similar, but its leaves are much thinner and more delicate.

Why is it a pest?

Produces many long-lived seeds that are dispersed a long way from parent plants. Moderate growth rate and layering stems, scrambles over shrubs and ground, forms dense, tall thickets. Tolerates salt, wind, drought, semi-shade and damage.

How does it spread?

Wind spreads the seed, and seed and fragments are spread in dumped vegetation and soil movement. Common sources include waste places, roadsides, bush edges and gardens.

What damage does it do?

Smothers ground and low-growing plants to 3 m tall, forming dense, long-lived mats that prevent the establishment of native plant seedlings.

Which habitats is it likely to invade?

Coastal, rocky areas, cliffs, bush edges, regenerating lowland forests and inshore islands.

What can I do to get rid of it?

Most easily controlled at flowering, when highly visible and before seed is produced.

1. Hand pull small plants, or dig out roots (all year round). Dispose of at a refuse transfer station, burn, or bury deeply.
2. Stump swab (all year round): glyphosate (100ml/L) or metsulfuron-methyl 600g/kg (1g /L).
3. Cut stems below waist height, spray below this point (spring-summer to actively growing plants): glyphosate (10ml/L knapsack or 2L/100L spraygun) or metsulfuron-methyl 600g/kg (2g/10L knapsack) or (20g/100L spraygun) or Tordon Brushkiller (60ml/10L) or Banvine (12ml/L) or Yates Woody Weedkiller (24ml/L) or amitrole (150ml/15L knapsack) or (2L/100L spraygun). Add penetrant to all mixes.

What can I do to stop it coming back?

Cut stumps and dropped stems resprout. Bared areas reseed.

Cathedral Bells

Botanical Name

Cobaea scandens

Family

Cobaeaceae (cobaea) family

Also known as

Cup and saucer vine, monastery bells, Mexican ivy

Where is it originally from?

Central and South America

What does it look like?

Evergreen, climbing vine to 6 m, 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 cm 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 mm long) containing winged seeds (10-15 mm).

Are there any similar species?

Flowers and leaf tendrils are unique.

Why is it a pest?

Seeds are moderately to well-dispersed, moderate growth rate, scrambles over most species, grows to canopy, and forms dense, long-lived masses. Moderately tolerant of shade, drought or damp, wind, salt, differing soil types, and damage

How does it spread?

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.

What damage does it do?

Smothers all plants up to medium to high canopy, preventing the establishment of native plant seedlings.

Which habitats is it likely to invade?

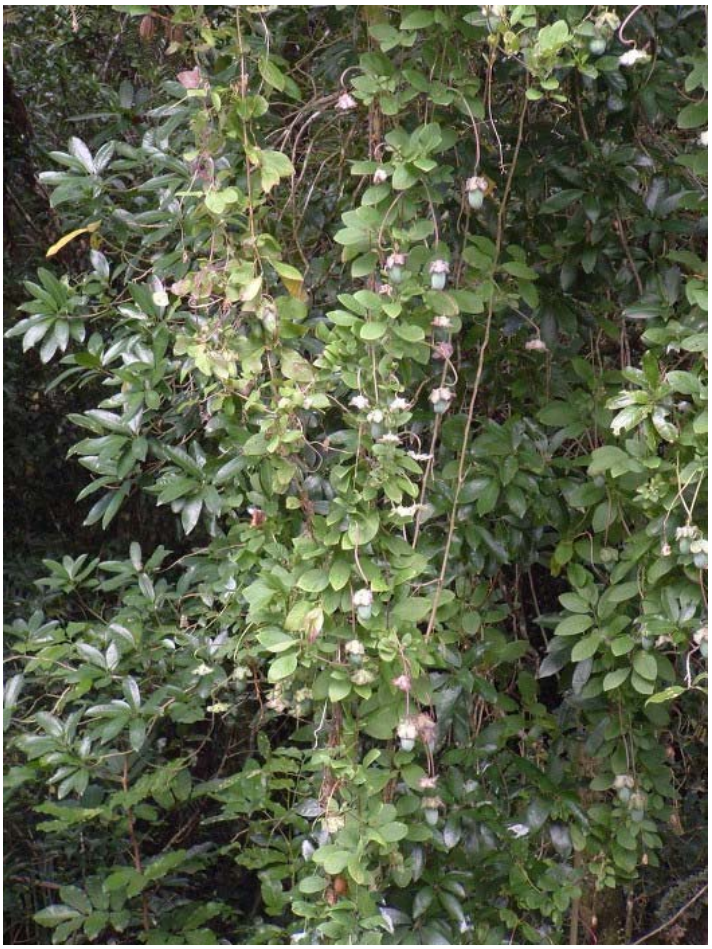
Open and intact forest and forest margins, coastline, and shrublands, especially in low-frost areas.

What can I do to get rid of it?

1. Hand pull small plants and single vines: trace the vines back to the roots and then dig these out. Ensure no vines are trailing on the ground as these will take root. Dispose of any plant material at a refuse transfer station or bury deeply.
2. Stump swab (all year round): cut vines as close to the roots as possible, and treat rooted ends liberally with Tordon Brushkiller (100ml/L) or Banvine (200ml/L) or picloram gel or Yates Woody Weed killer (400ml/L). Can sucker from cut material, so treat cut material with herbicide, bury deeply, or dispose of at a refuse transfer station.
3. Spray (spring-summer): Banvine (120ml/10L) or Yates Woody Weedkiller (24ml/L).
4. Spray (spring-summer) from ground level to 2m high: Tordon Gold (120ml/10L) or Tordon Brushkiller (60ml/10L + penetrant) or triclopyr 600 EC (60ml/10L + penetrant) or triclopyr 120g/L (250ml/10L).

What can I do to stop it coming back?

Stumps resprout very quickly. Dispose of cut fragments on ground and leave other parts to die in air. Follow up 6-monthly on seedlings.



Madeira Vine

Botanical Name
Anredera cordifolia

Family
Basellaceae family

Also known as
Mignonette vine, Boussingaultia baselloides, Boussingaultia cordifolia

Where is it originally from?
South America

What does it look like?
Perennial, climbing, hairless, woody vine with fleshy rhizomes and slender, usually reddish stems with small irregular 'warty' aerial tubers. Fleshy to succulent heart-shaped leaves (2-11 x 2-10 cm) are glossy, clammy to the touch, and arranged alternately on the stems. Slender, drooping flowerheads (18 cm long) of small, numerous, fragrant cream flowers are produced from January to April, but no fruit is formed.

Are there any similar species?
Senecio angulatus and S. mikanioides.

Why is it a pest?
Tubers are very hard to kill and are saltwater-tolerant. Grows at a moderate rate but forms heavy, long-lived masses that dominate medium to high canopy. Tolerates drought and damp conditions, wind, salt, many soil types, moderate shade and damage.

How does it spread?
No seed is produced in New Zealand, with all spread by dumped or waterborne (fresh or sea water) tubers and rhizomes. Even tiny fragments of tuber resprout. Common sources are gardens.

What damage does it do?
Smothers all plants to medium to high canopy, preventing the establishment of native plant seedlings. Combined weight of aerial tubers can topple small trees.

Which habitats is it likely to invade?
Low and disturbed forest and margins, gullies, shrublands, coastline, river systems, and streamsides, especially in warmer areas.

What can I do to get rid of it?

1. Pull plant (all year round), burn all parts or place all parts in black plastic bags and leave to 'cook' in sun.
2. Cut down and paint stump (all year round): metsulfuron-methyl 600g/kg (1g /L) or glyphosate (100ml/L) or Tordon Brushkiller (100ml/L) or triclopyr 600 EC (100ml/L) or triclopyr 120g/L (500ml/L). Pull out and rake up all aerial tubers, burn on site or 'cook' in black plastic bags left in the sun.
3. Spray (spring to autumn): 3g metsulfuron-methyl 600g/kg + 100ml glyphosate + 10ml penetrant/10L (knapsack) or 30g metsulfuron-methyl 600g/kg + 1L glyphosate + 100ml penetrant/100L (spraygun).

What can I do to stop it coming back?

Resprouts continuously from fallen tubers and stumps, occasionally from stems. Do not dump aerial tubers in the sea, as they sprout wherever they wash up.

Nodding Thistle

Botanical Name

Carduus nutans

Family

Asteraceae

Where is it originally from?

Europe, North-West Africa and Asia

What does it look like?

Leaves are dark green, deeply divided into triangular lobes with spiny tips, and do not have large, distinct white markings, although the leaf margins are white at the base of the marginal spines

The flowering stems are up to 1.5m tall, stout and bear spiny wings to just below the flower heads. The plant is most easily identified at the flowering stage when it has drooping purple flower heads which nod in the wind.

Are there any similar species?

Scotch thistle, Californian thistle, Winged thistle.

Why is it a pest?

Nodding thistle is a large, invasive, biennial thistle which can significantly reduce stock carrying capacities. It can form dense clumps which smother the underlying pasture and make stock movement difficult. Plants form ideal hides for rabbits and hares and for further weed infestations

How does it spread?

A plant can produce up to 20,000 seeds of which at least a third will be viable. Seeds are heavy and fall close to the parent plant. Seeds can be spread by stock, birds and machinery.

What damage does it do?

It can form dense clumps which smother the underlying pasture and make stock movement difficult.

Plants form ideal hides for rabbits and hares and for further weed infestations.

Which habitats is it likely to invade?

Pasture, particularly areas with disturbed soil, often invades and thrives following drought years.

What can I do to get rid of it?

Plants are best sprayed in the late autumn early winter when the plants are seedlings. Plants at about the six-leaf seedling stage are ideal. Spraying at this time of the year also has only a minimal effect on pasture clovers.

1. Escort knapsack spot spraying 3g per 10 litres of water + penetrant
2. Tordon Brushkiller knapsack spot spraying 60ml per 10 litres of water + boost
3. Mature plants can be controlled by mowing but for this to be successful, plants need to be flowering. Mowing before flowering will cause multi-crown plants which will continue to grow, but if cut during flowering, but before seed set plants will die. Multicrown plants are even more difficult to kill.

What can I do to stop it coming back?

Dense, vigorous pastures stop thistles from establishing and reduce their growth and survival.

Pasture cover is most important in autumn. Where new improved cocksfoot varieties perform well they may to keep thistles out.

Woolly Nightshade

Botanical Name
Solanum mauritianum

Family
Solanaceae family

Also known as
tobacco weed, flannel-leaf, kerosene plant, Solanum auriculatum

Where is it originally from?
South America

What does it look like?
Spreading, capsicum-smelling shrub or small tree to 10 m tall with all parts covered in dusty hairs, and whitish, branching, soft-woody stems. Velvety, oval, grey green leaves (10-35 x 3-15 cm) are whitish underneath with prominent 'ears' (25mm) at base which clasp the stem. Dense clusters of mauve to purple flowers (15-20 mm diameter) with yellow anthers appear from January to December, followed by clusters of round berries (1 cm diameter) that ripen from hard green to soft, dull yellow.

Are there any similar species?
White-edged nightshade (Solanum marginatum), has spiny leaves and stems. Datura or angels trumpet (Brugmansia species) have similar leaves but giant hanging white (occasionally mauve, red, orange) flowers with a sweet scent.

Why is it a pest?
Grows and matures rapidly, forming dense tall stands and producing many well-dispersed seeds most of year. Allelopathic (produces toxins that poison the soil), inhibits regeneration. Tolerates wet to dry conditions, salt, all well-drained soils, hot to cool temperatures, semi-shade, damage and grazing.

How does it spread?
Birds, especially native pigeon, spread the seeds. Common seed sources are gullies, roadsides, neglected farms, orchards, plantation forests, waste land, and shelter belts.

What damage does it do?
Forms dense, often pure stands. Inhibits or prevents establishment of native plant seedlings, and slows regeneration rate of native forests.

Which habitats is it likely to invade?
Heavily disturbed forest and light gaps, shrublands, coastal and estuarine margins, inshore islands, consolidated sand dunes, wetlands, some tussocklands, and places epiphytes would usually be found, especially in well-drained low-frost areas.

What can I do to get rid of it?
1. Pull up all small plants (easiest in winter). Leave on site to rot down.

2. Cut and squirt (all year round): make cuts at regular intervals around the trunk, apply undiluted Tordon Brushkiller (1.5ml per cut).
3. Cut and paint stumps (all year round): Tordon Brushkiller or triclopyr 600 EC (100ml/L) or Vigilant gel.
4. Frilling (all year round): Tordon Brushkiller (100ml /L) or triclopyr 600 g/L (100ml/L) or Yates Woody Weedkiller (200ml/L).
5. Injection method: use either 10 mm wide holes drilled at 45 degree angle down into trunk 50 mm deep spaced at 50 mm around trunk, or a series of 80 mm wide blazes cut to a depth of 15-20 mm, spaced at 20-40 mm. Fill each with Vigilant gel.
6. Spray: Tordon Brushkiller (25ml/10L) or triclopyr 600 EC (60ml/10L) or triclopyr 300 EC (12ml/L).

What can I do to stop it coming back?

Cut stems resprout quickly. Reseeds profusely in bared sites within 1-2 years. Rarely invades intact habitats. Maintain shade by planting dense cover. Usually short-lived seed, follow up three years. Maintain rolling front of control. Exclude livestock, maintain vertebrate pest control

Appendix 1C
Progressive Control Pest Plant Information Sheets

Asiatic Knotweed

Botanical Name

Reynoutria japonica

Family

Polygonaceae

Where is it originally from?

Asia

What does it look like?

Many-stemmed, thicket-forming perennial shrub (<1-2 m high) with roots with rhizomes and numerous, zigzagging, hairless, bluish to reddish stems (<15 mm diameter) that are woody at the base. Ovalish, pointed leaves (8-23 x 5-17 cm) with less than 14 pairs of lateral veins are bluish below and on dark crimson stalks. White flowers (<2.5 mm long) in densely-hairy, branched hanging clusters (<6 cm long) appear from December to April and are followed by glossy brown nuts (3 mm).

Are there any similar species?

Reynoutria sachalinensis

Why is it a pest?

Grows rapidly and extensively from rhizomes and multiple stems. Produces relatively long-lived and well dispersed seed and tolerates wet to moderately dry conditions, warm to cold temperatures, but is intolerant of shade.

How does it spread?

Seed and rhizomes are spread by soil and water movement.

What damage does it do?

Forms dense, long-lived thickets, excludes other species and prevents native seedlings establishing.

Which habitats is it likely to invade?

Shrubland and areas around waterways.

What can I do to get rid of it?

1. Dig out small patches (all year round). Dispose of at refuse transfer station or burn.
2. Weed mat: leave for 6 months minimum. Dig or spray surviving shoots.
3. Stump swab (all year round): glyphosate (250ml/L) or metsulfuron-methyl 600g/kg (5g/L) or triclopyr 600 EC (200ml/L).
4. Stem injection (all year round): metsulfuron-methyl 600g/kg (50g/L, 5ml per stem.

5. Spray (spring-autumn): glyphosate (200ml/10L) or metsulfuron-methyl 600g/kg (5g/L) or Tordon Brushkiller (6ml/L) or triclopyr 600 EC (6ml/L). Add penetrant

What can I do to stop it coming back?

Stem fragments and rhizomes resprout. Seeds germinate in bared areas. Difficult to control. Follow up 3-monthly for at least two years until eliminated.

Banana Passionfruit

Botanical Name

Passiflora 'Tacsonia' subgroup

Family

Passifloraceae (passionfruit) family

Also known as

Banana passion flower, wild blue-crown, wild passion vine. Both spp virtually identical in appearance and characteristics.

Where is it originally from?

Latin America

What does it look like?

Vigorous, evergreen, high-climbing vines (<10 m) with long, densely hairy stems which are angular when young, and which have many spiralling tendrils. Leaves are 3-lobed (each lobe 5-14 cm long) with middle lobe the longest, edges serrated, and undersides covered in down. From Jan-Dec pink hanging flowers (7 cm diameter) with central tube (60-95 mm long) appear, followed by hanging, thin-skinned fruit (7- 12 x 2-4 cm) ripening from green to yellow or orange, with sweet edible orange pulp and dark red seeds (4-6 mm long).

Are there any similar species?

P. pinnatastipula, P. antioquiensis, P. caerulea (qv), P. edulis (qv).

Why is it a pest?

Grows to medium-high canopy, where it forms large masses. Grows rapidly in most soil types, and produces highly viable seed in 2 years. Partly tolerant to shade, damage and drought, and stems root where they touch the ground.

How does it spread?

Birds, feral pigs and possums carry seeds some distance. Also humans (via eating or discarded fruit). Hedges, orchards, exotic plantations, waste land, gardens, roadsides.

What damage does it do?

Smothers canopy, prevents recruitment. Allows faster-growing or tougher vines to succeed it in dominating canopy. Appears in light wells away from parent plant.

Which habitats is it likely to invade?

Disturbed and open forest, light wells and margins of intact bush, streamsides, coastline, cliffs, consolidated sand dunes, inshore islands.

What can I do to get rid of it?

1. Pull roots up (all year round). Cut off above ground or tie stems in air to prevent layering.
2. Cut trunk and paint stump (all year round): cut trunk near to the ground, and swab freshly cut stump with metsulfuron-methyl 600g/kg (1g/L); or Tordon BK (100ml/L); or triclopyr 600g/L (100ml/L); or Banvine (200ml/L).

Roots normally easy to pull out. Use herbicide only when roots cannot be pulled.

What can I do to stop it coming back?

Roots normally easy to pull out. Use herbicide only when roots cannot be pulled.




Blue Morning Glory

Botanical Name

Ipomoea indica

Family

Convolvulaceae family

Also known as

Blue dawn flower, blue bindweed, blue convolvulus, morning glory, I learii, Ipomoea congesta

Where is it originally from?

Throughout tropical areas

What does it look like?

High climbing vine with tough, hairy, twining, running stems with tough fibrous roots without rhizomes. Leaves (5-18 x 5-16 cm) are usually 3-lobed and silky-hairy underneath. From late spring to early winter, groups of 3-12 deep blue-purple flowers that are pink at the base and wither in the midday sun are produced. Little or no seed is produced in New Zealand.

Are there any similar species?

Exotic species: Purple morning glory (I. purpurea) has violet-purple flowers (5-6 cm diameter), sets viable seed but is uncommon (only found in Napier, Christchurch and one site in the Bay of Plenty to date). Great bindweed (Calystegia silvatica) has long, extensive rhizomes, arrow-shaped leaves, large white flowers and is common, especially in Canterbury. Also similar is field bindweed (Convolvulus arvensis). Native species include: railway creeper (I. cairica, I. palmate) which has leaves divided into 5-7 finger-like lobes, mauve flowers 5-8 cm diameter, grows in coastal areas and is uncommon, pink bindweed or convolvulus (Calystegia sepium) which has extensive rhizomes, arrow-shaped leaves, flowers pink with white stripes, and is very common, shore bindweed (Calystegia soldanella) which is usually prostrate, has smaller, thick, semi-succulent leaves, 3-5 cm pink flowers, and is coastal, and Calystegia tuguriorum which has slender, much branched, climbing stems, roundish or kidney-shaped leaves, flowers white or pink, 4-6 cm diameter, and grows in lowland forest margins all over New Zealand.

Why is it a pest?

Very fast growth rate, longevity, dense smothering habit and ability to climb to top of high canopy makes this the dominant vine wherever it occurs. Tolerates hot to cool temperatures, and damp to dry conditions.

How does it spread?

Creeping stems spread this plant locally, and stem fragments are moved in dumped vegetation. Sources are gardens and wasteland.

What damage does it do?

Climbs over all other species, ultimately killing them. Can replace forest with low weedy blanket, and is the last species in many cases when a bush area totally succumbs to weeds.

Which habitats is it likely to invade?

Most warmer habitats except swamps and coastline.

What can I do to get rid of it

1. Hand pull, dig out roots (all year round). Dispose of roots and stems at a refuse transfer station or bury deeply.
2. Cut down and paint stump (all year round): glyphosate (100ml/L) or metsulfuron-methyl 600g/kg (1g/L).
3. Cut vines at waist height (summer-autumn) and spray foliage below: glyphosate (10ml/L + penetrant) or metsulfuron-methyl 600g/kg (2g/10L + penetrant (knapsack) or 20g/100L + penetrant (spraygun)). Follow up to check that slashed stems have not resprouted.

What can I do to stop it coming back?

Slashed stems resprout. Cut plant material can reprout. Eliminate from bush edges and dumps. Limited follow-up required.

Chocolate Vine

Botanical Name
Akebia quinata

Family
Lardizabalaceae

Also known as
Rajania quinata

Where is it originally from?
Central China to Korea and Japan

What does it look like?
Deciduous, twining climber and vigorous groundcover that can be evergreen in mild climates. Slender, round stems are green when young and brown when mature. Leaves made up of five or less oval leaflets (3-6 x 2-4 cm) creating a hand shape are on long stalks (up to 12 cm) and have a purplish tinge that becomes blue-green at maturity. Flowers (25 mm across) are chocolate-purple coloured with the scent of vanilla, and hang in clusters (5-10 cm long) of 6-8 flowers from August to October. Fruits are purple-violet, flattened sausage-like pods (8-9 cm long). The inside of the pod has a whitish, pulpy core with many tiny black seeds. Its weedy ways mean that it has recently been banned from sale, propagation and distribution within New Zealand.

Are there any similar species?
Alternatives: Try the native jasmine, akakiore (Parsonsia heterophylla) or kohia (Passiflora tetrandra). For non-native alternatives, try the attractive purple coral pea (Hardenbergia violacea) or Chilean jasmine (Mandevilla laxa).

Why is it a pest?
Chocolate vine grows very rapidly, producing so many stems that it forms a thick, tangled mat that covers other plants. It will form a thick groundcover if it doesn't have anything to grow up, smothering seedlings and stopping other plants establishing. It spreads by stem fragments, and birds also spread the seed. Tolerates a wide range of conditions from full sun to shade, drought and frost, sandy to clay soils, and acid or alkaline soils.

How does it spread?
Predominantly vegetative spread, growing up to 6-14m in a single growing season, plus bird-dispersed seed.

What damage does it do?
Quickly smothers, outcompetes and kills herbs and seedlings, shrubs and young trees. Once established, its dense growth prevents seed germination and establishment of seedlings of native plants.

Which habitats is it likely to invade?

Prefers partial shade and well-drained yet moist soil, such as in riparian zones, forest edges, wetlands and urban areas.

What can I do to get rid of it?

1. Dig out individual vines and hand pull seedlings (all year round): remove root system, dispose of material at refuse transfer station.
2. Cut stems (spring-summer): cut at ground level, then repeat throughout growing season.
3. Overall spray large infestations (spring-summer): knapsack spray with glyphosate (300ml/15L + penetrant) or triclopyr 600 EC (60ml/10L+ penetrant).

What can I do to stop it coming back?

Monitor the site and treat regrowth from roots and seedlings. Search out and remove the source of the infestation. Where appropriate replant the site with local native species.

Darwin's Barberry

Botanical Name

Berberis darwinii

Family

Berberidaceae (Barberry)

Where is it originally from?

Chile and Argentina

What does it look like?

Evergreen, spiny, yellow-wooded shrub (< 4+ m tall) with tough, woody and densely hairy stems with tough, 5-pronged, needle-sharp spines. Hairless, glossy, dark green leaves (10-30 x 5-15 mm) are usually spiny-serrated along edges. Hanging clusters (7 cm long) of deep orange-yellow flowers (5-7 mm diameter) appear from July to February followed by oval purplish-black berries (5-7 mm diameter) with a bluish-white surface.

Are there any similar species?

European barberry (B. vulgaris) is deciduous and has red berries. B. souliena, B. wilsonae are both cultivated. Barberry (B. glaucocarpa) has paler yellow flowers and less glossy leaves.

Why is it a pest?

Long-lived plant, with well-dispersed seeds. Tolerates moderate to cold temperatures, damp to dry conditions, high wind, salt, shade, damage, grazing (not browsed), and a range of soils.

How does it spread?

Birds and possibly possums eat the berries containing the seeds. Occasionally spread by soil and water movement.

What damage does it do?

Scattered plants (occasionally dense stands) replace shrubland and regenerating forest, sometimes permanently in open habitats.

Which habitats is it likely to invade?

Disturbed forest and shrubland, short tussockland, herbfield, and bare land.

What can I do to get rid of it?

1. Grub out (all year round). Leave on site to rot down.

2. Stump swab (all year round): glyphosate (200ml/L) or metsulfuron-methyl 600g/kg (5g/L) or picloram gel or Tordon Brushkiller (100ml/L) or triclopyr 600 EC (200ml/L).
3. Cut and squirt (all year round): metsulfuron-methyl 600g/kg (1g/100mm stem diameter).
4. Spray (spring-autumn): metsulfuron-methyl 600g/kg (5g/10L) or Tordon Brushkiller (25ml/10L).

What can I do to stop it coming back?

Cut stumps resprout quickly, and can be hard to kill and seeds will germinate onto bare land. Follow up 6 monthly. Replant bare sites to minimise seeding.

Elaeagnus

Botanical Name

Elaeagnus x reflexa

Family

Elaeagnaceae family

Also known as

Elaeagnus hybrid, Elaeagnus pungens, Elaeagnus glabra, Elaeagnus 'variegata'

Where is it originally from?

Thought to be from Japan

What does it look like?

Vigorous, dense, evergreen shrub, scrambling over support to 20 m tall, with a very tough, suckering rootstock. Stems are long, arching, tough, with young shoots being brown and scaly and older stems often with spines. Leaves (45-90 x 15-40 mm) are arranged alternately on the stems, are hairless above, and silvery or browny-scaly (often densely) underneath. Small drooping clusters of tiny, whitish, fragrant flowers are sometimes present from March to May followed by a pale reddish-orange fruit (18 x 10 mm) containing one ribbed seed.

Are there any similar species?

Not in the wild.

Why is it a pest?

Scrambling habit, suckering roots, layering stems, nitrogen fixing ability, extremely long-lived and not grazed. Tolerant of drought, wet, high to medium-low temperature, wind, salt, most soil types, and moderate shade.

How does it spread?

Birds, and possibly possums and goats, spread the very rare seed which most plants never produce. Layering stems and suckers are spread in dumped vegetation. Common sources are old homestead and farm sites, roadsides, hedges, and tips.

What damage does it do?

Slowly smothers all other plants to canopy height, invades well-lit or partially shaded sites, and can increase soil nutrient status, affecting which native plant species can grow there.

Which habitats is it likely to invade?

Forest margins, consolidated sand dunes, shrubland, cliffs, and fernland.

What can I do to get rid of it?

1. Dig out with machinery wherever possible. Dry and burn roots and stems or bury deeply.
2. Stump swab (ground level): glyphosate (250ml/L) or undiluted Tordon Brushkiller or Vigilant gel. Follow up likewise on suckers. Dispose of cut stems at a refuse transfer station, burn or bury deeply to prevent resprouting.
3. Injection (best in autumn): drill holes sloping into the sapwood at regular intervals around the tree. As each hole is drilled place glyphosate (250ml/L) or metsulfuron-methyl 600g/kg (20g/L) or undiluted Tordon Brushkiller into the hole. If necessary wait until the liquid subsides then apply the remainder. Repeat treatments may be necessary.
4. Frilling: use a sharp chisel or axe and make deep cuts into the sapwood at regular intervals around the base of the tree, taking care not to ring-bark the plant. Immediately apply glyphosate (250ml/L) or undiluted Tordon Brushkiller to the cuts using a paintbrush or a squeeze bottle.
5. Slashing or use a chainsaw to cut all growth down to ground level. Cut all the bark off the stumps and paint liberally with glyphosate (250ml/L) or undiluted Tordon Brushkiller and cover the stumps with sacking or black plastic to block out all of the light. Dispose of cut stems at a refuse transfer station, burn or bury deeply to prevent resprouting.
6. Spray: glyphosate (300ml/15L (knapsack) or 2L/100L (spraygun)) or metsulfuron-methyl 600 g/kg (5g/10L on small plants and regrowth) or Tordon Gold (12ml/L). Treatment may need to be repeated.

What can I do to stop it coming back?

Stumps resprout, roots sucker and cut stems can layer. Extremely hard to kill, repeat treatments needed.

Giant Knotweed

Botanical Name

Reynoutria sachalinensis

Family

Polygonaceae

Where is it originally from?

Asia

What does it look like?

Giant, many-stemmed, thicket-forming perennial shrub (<2-4 m high) with roots with rhizomes and numerous hairless green stems (<20 mm diameter) that are woody at the base. Ovalish and pointed leaves (10-30 x 5-22 cm) with more than 14 pairs of lateral veins that are bluish below and usually on reddish stalks. White or greenish flowers (<2mm long) in densely-hairy, clusters (<6 cm long) appear from November to April but no seed is seen in New Zealand.

Are there any similar species?

Reynoutria japonica

Why is it a pest?

Grows extensively from rhizomes and multiple stems, tolerates wet to moderately dry conditions and warm to cold temperatures, but is intolerant of shade.

How does it spread?

Seed and rhizomes are spread by soil and dumping.

What damage does it do?

Forms dense, long-lived thickets, excludes other species and prevents native seedlings establishing.

Which habitats is it likely to invade?

Disturbed shrubland and bare land.

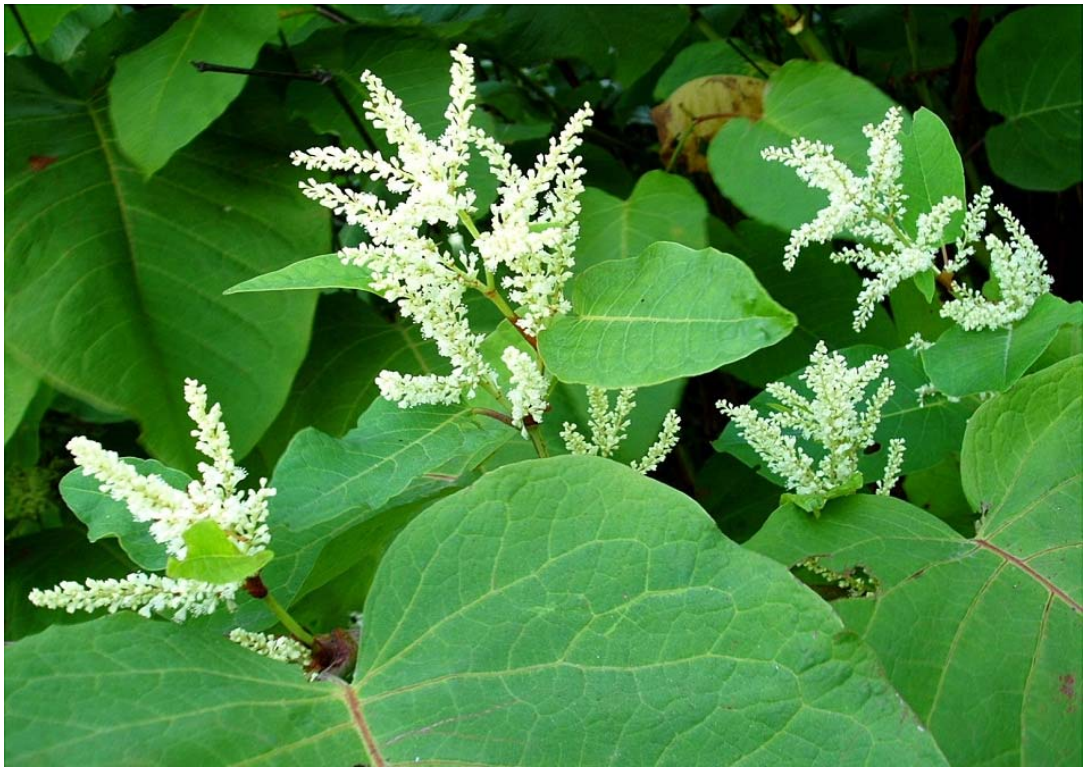
What can I do to get rid of it?

1. Dig out small patches (all year round). Dispose of at refuse transfer station or burn.
2. Weed mat: leave for 6 months minimum. Dig or spray surviving shoots.
3. Stump swab (all year round): glyphosate (250ml/L) or metsulfuron-methyl 600g/kg (5g/L) or triclopyr 600 EC (200ml/L).
4. Stem injection (all year round): metsulfuron-methyl 600g/kg (50g/L, 5ml per stem.

5. Spray (spring-autumn): glyphosate (200ml/10L) or metsulfuron-methyl 600g/kg (5g/L) or Tordon Brushkiller (6ml/L) or triclopyr 600 EC (6ml/L). Add penetrant

What can I do to stop it coming back?

Difficult to control as stem fragments and rhizomes resprout. Follow up 3-monthly for at least two years until eliminated



Gunnera

Botanical Name

Gunnera tinctoria/ manicata

Family

Gunneraceae family

Also known as

Brazilian rhubarb, Gunnera chilensis, G. scabra, gunnera, giant rhubarb

Where is it originally from?

South America

What does it look like?

Large, clump-forming, summer-green herb (up to 2m) growing from stout horizontal rhizomes. Massive, rough and wrinkled umbrella-sized leaves (80 cm x 1 m) on sturdy stalks have 5-7 lobes and raised veins beneath. Both leaves and leaf stalks are covered in rubbery red prickles. Dies down over winter in cold climates and grows new leaves in spring from large, lobed, scaly buds (25 cm long) that are pinkish-green when fresh and dry to brown. Tiny, densely packed green flowers (summer) on long, erect, conical spikes (up to 1 m long) rising from the base of the leaves develop into reddish, oblong fruit (1.5-2mm long), each containing a single oblong seed.

Why is it a pest?

Grows into large plants that form dense colonies, and large leaves shade out and suppress native vegetation. Produces an abundance of viable seed (approximately 250,000 seeds in a year) and also spread by rapid rhizome growth, making it difficult to control.

How does it spread?

Seeds are spread by water and by birds. Spreads vegetatively by growth of rhizomes and regrowth from rhizome fragments.

What damage does it do?

Alters the habitat of birds, insects and lizards, can block drains and streams and obstruct access to natural and recreational areas, and contribute to erosion on slip-prone banks.

Which habitats is it likely to invade?

Requires moist soil and full sun to dappled shade in habitats such as coastal cliffs, forest, forest edges, river and stream banks, drains and wetlands.

What can I do to get rid of it?

1. Remove flower spikes and dispose at landfill (all year round).
2. Pull out seedlings (all year round).
3. Dig out individual plants or small patches (all year round). Ensure removal of all rhizome fragments and flower/seedheads and dispose of these at a refuse transfer station.
4. Cut and paint (spring): cut off the leaves and paint the stalk stumps with picloram gel or glyphosate (250ml/L)

5. Spray (full leaf and actively growing): glyphosate (10ml/L (knapsack))

Himalayan Honeysuckle

Botanical Name

Leycesteria formosa

Family

Caprifoliaceae family

Where is it originally from?

Himalayas

What does it look like?

Deciduous or semi-evergreen, many-stemmed perennial shrub to 2+ m with straight, hairless round stems (1-2 cm thick) that are hollow and green when young but become woody. Heart-shaped (occasionally 5-9 lobed) leaves (4-14 x 2-8 cm) are in opposite pairs on the stem. Terminal, drooping spikes (3-8 cm long) of white funnel-shaped flowers (15 mm long) with delicate deep reddish-purple bracts appear from December to May, followed by juicy, dark brownish-purple berries (7-10 mm diameter).

Why is it a pest?

The few seeds it does produce are well dispersed by birds and water, and new plants quickly form dense thickets. It colonises light wells, slips and other gaps, quickly replacing native species that are trying to establish and causing invasion by other exotic species, especially vines by getting rid of native competition. Tolerates moderate to deep shade, frost, damage, damp, and most soils. Not long-lived, so eventually succeeded by other species.

How does it spread?

Birds and water disperse seeds. Common seed sources include plantation forest, roadsides, disturbed bush, and under hedges.

What damage does it do?

Colonises light wells, slips and other gaps, quickly replacing native pioneer species.

Causes invasion by other exotic species, especially vines.

Which habitats is it likely to invade?

Wet forest, shrublands and margins, streamsides, damp gullies, and possibly areas that would usually be dominated by epiphytes.

What can I do to get rid of it?

1. Dig out (all year round). Leave on site to rot down.
2. Cut down and paint stump (all year round): or glyphosate (100ml/L) or metsulfuron-methyl 600g/kg (1g/L) or triclopyr 600 EC (100ml/L) or triclopyr 120g/L (500ml/L).
3. Spray (spring-summer): metsulfuron-methyl 600g/kg (5g/10L) or triclopyr 600 EC (30ml/10L) or triclopyr 120g/L (15ml/L).

What can I do to stop it coming back?

Stumps resprout so frequent followup required to ensure eradication. Remove pigs and other stock to minimise erosion and the development of light wells. Replant sites where native species are slow to recover to prevent reseeding.

Japanese Honeysuckle

Botanical Name

Lonicera japonica

Family

Caprifoliaceae family

Where is it originally from?

Japan

What does it look like?

Vigorous evergreen (semi-evergreen in cold districts) climber with long, tough, wiry stems that twine clockwise, are purplish and hairy when young, and turn woody as they mature. Leaves (3-12 x 2-6 cm) are in opposite pairs on the stems, are shiny dark green (occasionally yellowish) on the top and lighter green underneath, and are wavy-edged to lobed when produced in cold climates, otherwise they are entire. Pairs of 2-lipped, sweetly scented tubular white flowers (2-5 cm long) that age to yellow are produced from September to May, and are followed by egg-shaped, glossy black berries (5-7 mm diameter) in colder parts of NZ, each containing seeds (2mm).

Are there any similar species?

Many similar Lonicera species are cultivated, and hybrids and cultivars of L. japonica. L. pericyclamineum and L. x americana are both found in the wild.

Why is it a pest?

Climbing, smothering habit. Forms dense, long-lived masses. Tolerates moderate-shade, frost, salt, damage, wet or dry, most soils, high to low temperature. Very long stems layer profusely, moderate-fast growth rate. Poor seeder.

How does it spread?

Birds, possibly possums. Roading machinery, dumped vegetation, soil and fill. Roadsides, wasteland, plantation forest, hedges, shelterbelts.

What damage does it do?

Climbs over and smothers most plants from ground to medium canopy. Can cause canopy collapse and subsequent invasion of grasses or ground vines. Provides support for faster growing weedy vines (eg morning glory, moth plant).

Which habitats is it likely to invade?

Forest margins, shrublands, disturbed forest, coastal areas, river systems, wetland margins, fernland, and inshore islands.

What can I do to get rid of it?

1. Dig out small sites (all year round). Dispose of roots and stems at a refuse transfer station, burn or bury deeply.
2. Cut and paint stump: within 10-15 minutes of cutting, paint cut surfaces with a liberal dose of triclopyr 600 EC (100ml/L) or Yates Woody Weedkiller (200ml/L).
3. Cut and paint stump (all year round): metsulfuron-methyl 600g/kg (5 g /L) or Tordon Brushkiller (200ml/L) or picloram gel. Leave vines in trees to die, dispose of cut stems at a refuse transfer station, burn or bury deeply.
4. Cut the vines at a convenient height in winter and spray the regrowth in the spring with glyphosate (10ml/L + penetrant) or metsulfuron-methyl 600g/kg (2g/10L + penetrant).
5. Spray (summer-autumn): glyphosate (10ml/L) or metsulfuron-methyl 600g/kg (5g/10L + penetrant) or clopyralid (50ml/10L) or Tordon Brushkiller (60ml/10L).

What can I do to stop it coming back?

Hard to kill. Stumps resprout, stems layer, but very shy seeder, so sites usually remain clear after treatment. Check for new sprouts 6-monthly until clear. Replant bared areas if seedlings are a problem.

Lagarosiphon

Botanical Name

Lagarosiphon major

Family

Hydrocharitaceae family

Also known as

Oxygen Weed

Where is it originally from?

South Africa

What does it look like?

Submerged, bottom-rooting perennial up to 5 m. Leaves (16 x 2 mm) have minute serrations along the edges, are arranged spirally around the stem, and are curved backwards or downwards. Tiny pinkish flowers are produced, but as only female plants are found in New Zealand, no seed is set.

Are there any similar species?

Egeria, Elodea, and Hydrilla are all similar.

Why is it a pest?

Grows rapidly in moderate to well-lit submerged sites ranging from low to high temperature, is tall, long-lived and dense, and overtops smaller native species. Lacks native plant competitors of similar height in New Zealand. Stems break easily, and fragments root downstream or wherever they are dumped.

How does it spread?

Loose stem fragments root at any node, colonising new sites. Lateral buds along the stems form new shoots and roots. Within catchments it spreads by water movement, and new catchments are infested by fragments spread by boats and trailers (occasionally motor cooling water), eel nets, diggers and people 'liberating' fish and emptying aquaria. Birds are unlikely to spread it.

What damage does it do?

Forms vast deep underwater 'meadows', shading out smaller native species, and preventing seedlings of native species from establishing. Large clumps dislodge from the 'meadows', causing flooding. Rotting vegetation turns water stagnant, killing fauna and flora.

Which habitats is it likely to invade?

Rivers, lakes, dunelakes and other still or slow-moving waterbodies with moderate to high light levels.

What can I do to get rid of it?

Infestations in small ponds can be controlled first by mechanical removal, ensuring no fragments are released, followed by bottom-lining. For larger infestations and infestations in flowing water, contact your regional council or local Department of Conservation office for advice.

Mile a Minute

Botanical Name

Dipogon lignosus

Family

Fabaceae family

Also known as

Wweet pea vine, pea vine, Dolichos lignosus

Where is it originally from?

South Africa

What does it look like?

Evergreen, climbing vine with rounded, moderately hairy stems that are woody towards their base. Leaves are made up of three heart-shaped leaflets (25-55 mm long) that are not usually arranged in a flat plane. Pea-like white, lavender and white, or pink to reddish purple flowers (10-15 mm long) are produced from spring to summer, and develop into boat-shaped seed pods (30-40 mm long) that ripen and split to release the seeds.

Are there any similar species?

Only vine with pea-like flowers and trifoliate leaves.

Why is it a pest?

Mile-a-minute is a good description of how this weedy twining vine grows. It can rapidly smother low growing shrubs and regenerating native forest canopy, and eventually takes over completely, shading out the plants underneath. Birds can spread seeds when the plant is used as nesting material, and it is thought that the seed can also be carried by water. Particular problem along road and track sides, open scrubland, forest margins and along riverbanks and streams. Tolerates drought or damp conditions, wind, salt, poor soils, and damage, but is not shade-tolerant.

How does it spread?

Seeds drop near parent plants, but most is spread in dumped vegetation or soil and also by sea or fresh water. Gardens, roadsides, vacant land and hedges are all common sources.

What damage does it do?

Smothers and kills most plants from ground level to medium canopy and prevents the establishment of native plant seedlings. Thrives in bare sites and increased nitrogen in impoverished soil types may change the species that can grow there to a high-fertility weed communite, to the detriment of specialised plants eg. orchids, ferns, herbs, and so on.

Which habitats is it likely to invade?

Forest margins, coastline, cliffs, shrublands, rocky and limestone areas.

What can I do to get rid of it?

1. Hand pull small plants (all year round). Dispose of at a refuse transfer station or burn.
2. Cut down and paint stump (all year round): metsulfuron-methyl 600g/kg (1g/L) or Tordon Brushkiller (100ml/L) or Banvine (200ml/L) or Woody Weedkiller (400ml/L) or Tordon Gold (200ml/L).
3. Dispose of all cut material at a refuse transfer station or burn.
4. Spray (spring-autumn): metsulfuron-methyl 600g/kg (3g/10L + penetrant (knapsack) or 20g/100L + penetrant (spraygun)) or Banvine (120ml/10L) or Woody Weedkiller (240ml/10L).

What can I do to stop it coming back?

Stumps resprout very quickly, cut stems root at nodes. Seeds produced in moderate quantities. Check at least 6-monthly for seedlings. Plant dense shading species immediately where possible.

Old Man's Beard

Botanical Name

Clematis vitalba

Family

Ranunculaceae family

Also known as

Travellers' joy, wild clematis

Where is it originally from?

Europe, South West Asia

What does it look like?

Deciduous, climbing, layering vine to 20 m 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 (rarely 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 cm diameter) produced from December to May, followed by grey, hairy seeds (2-3 mm long) with distinctive white plumes (3-4 cm long) in dense, fluffy clusters persisting over winter (hence the 'old man's beard').

Are there any similar species?

Native Clematis species, C. paniculata is a hardy climber with large white flowers, C. marata scrambles through shrubs with small yellow flowers, C. foetida has strong lemon-scented flowers. The native jasmine, Parsonsia capularis, is also lovely. Note all native clematis species are evergreen, have 3 leaflets (except the leafless C. afoliata), unfurrowed stems, and flower from August to December. All exotic species that are found in the wild are deciduous and flower from December to May (except the occasionally weedy, pink-flowered C. montana which flowers from October to December).

Why is it a pest?

Grows rapidly, forming dense, heavy, masses that dominate canopy of any height. Stems layer profusely, and it produces many long-lived seeds if exposed to frost. Tolerant of cold, moderate shade, damp, wind, salt, most soil types, and damage.

How does it spread?

Seed is spread by water or wind, and both seed and stem fragments are spread in dumped vegetation. Common sources are forests, roadsides, hedgerows, vacant land, and willow swamps.

What damage does it do?

Smothers and kills all plants to the highest canopy, and prevents the establishment of native plant seedlings. Moves readily into established forest over canopy and by layering.

Which habitats is it likely to invade?

Disturbed and open forest and forest margins, shrublands, riverbeds, cliffs, bush tracks, fernland, and tussockland.

What can I do to get rid of it?

1. Slash thick stems (all year round) at 1 m and ground level (to prevent stump resprouting and aerial roots attaching from hanging stems). Paint cut stumps with glyphosate (250ml/L) or metsulfuron-methyl 600g/kg (5g /L) or Tordon Brushkiller (100ml/L) or triclopyr 600 EC (100ml/L) or triclopyr 120g/L (500ml/L) or Banvine (200ml/L) or Yates Woody Weedkiller (400ml/L) or picloram gel. Leave stems in air to die. Dispose of cutaway segments at a refuse transfer station or by burning.
2. Spray (spring-autumn): glyphosate (20ml/L) or clopyralid (12.5ml/L).

What can I do to stop it coming back?

Stumps resprout very quickly and cut stems root at nodes. Replant bared areas promptly to minimise seedling regrowth. Check for seedlings at least 6-monthly.

Oxygen Weed

Botanical Name

Egeria densa

Family

Hydrocharitaceae family

Also known as

Lake weed, Elodea densa

Where is it originally from?

South America

What does it look like?

Submerged, bottom-rooting perennial, growing to 5 m. Slender, brittle, buoyant stems (3 mm diameter) are much-branched. Linear, dark green leaves (15-30 x 4 mm) are in whorls of 4-6 (occasionally 3 near base). From November to January it produces flowers (20 mm diameter) that are white, 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.

Are there any similar species?

Lagarosiphon, Elodea, Hydrilla are all similar.

Why is it a pest?

Grows in most still or slow-moving, highly lit submerged sites, and tolerates a wide range of temperatures. Stems break and fragments root downstream or wherever they are dumped. Grows rapidly and forms dense patches, is long-lived, and tall enough to overtop smaller native species; it lacks native plant competitors of similar height.

How does it spread?

Loose stem fragments root at any node, colonising new sites. Water flow spreads it within catchments, and new catchments are infested by fragments spread by boats and trailers (occasionally motor cooling water), eel nets, diggers, people liberating fish, and floods from ornamental ponds. Birdspread is not a factor.

What damage does it do?

Forms 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.

Which habitats is it likely to invade?

Rivers, lakes, dune lakes, and other waterbodies with moderate to high light and temperatures in the range of 10-25 degrees C.

What can I do to get rid of it?

In small ponds, this plant can be killed by first using mechanical clearance, taking care not to spread fragments, followed by bottom lining of the pond. For larger infestations or infestations in flowing water, contact your regional council or local Department of Conservation office for advice.

Pampas

Botanical Name

Cortaderia selloana / jubata

Family

Poaceae family

Also known as

Cutty grass, Prince-of-Wales feathers,

Where is it originally from?

South America

What does it look like?

Large-clump-forming grass to 4 m+. Leaf base is smooth or sparsely hairy, with no white waxy surface. Leaves are blueish-green above and dark green below, have a conspicuous midrib which does not continue into leaf base, no secondary veins between midrib and leaf edge, and snap readily when tugged. Dead leaf bases spiral like wood shavings. Erect, dense, fluffy, white-pinkish or purple flowerheads are produced from January to June which fade to a dirty white or purple as seed forms.

Are there any similar species?

Native Cortaderia species (toetoe) are similar. Toetoe leaves don't snap readily, midrib continues into leaf base, have distinct secondary veins between midrib and edge, and white waxy leaf sheaths. Dead leaves don't spiral. Drooping, light golden-yellow flowerheads are produced from September to January.

Why is it a pest?

Tolerates heat and frost, salt, wind, wet and drought, moderate-shade, most soils, low fertility, and recovers quickly after fire. Massive amounts of well dispersed seed are produced.

How does it spread?

Seeds are spread very long distances by wind and occasionally water. Seeds are also spread by soil movement, dumped vegetation, contaminated forestry machinery, clothing, and on animal pelts. Common seed sources are plantation forests, roadsides, farm hedges, quarries, and wasteland.

What damage does it do?

Colonises sprayed, burnt, slipped and otherwise disturbed sites and quickly becomes dense. Replaces groundcovers, shrubs, and ferns, creates fire hazards, provides habitats for possums and rats, and impedes access. Normally followed by weedy vines.

Which habitats is it likely to invade?

Forest light gaps, slips, margins, disturbed sites, open habitats, riverbeds, cliffs, inshore and offshore islands, tussockland, fernland, herbfield, duneland, coastline, gumlands, salt marsh, estuaries, and shrublands.

What can I do to get rid of it?

1. Physical control: Dig or grub out seedlings or small plants. Chainsaw small plants and remove sizeable plants by bulldozer. Compost or leave on site to rot down. Burn or bury any flowerheads.
2. Weed wipe (all year round): glyphosate (200ml/L + penetrant).
3. Spray: Gallant (150ml/10l + crop oil) for most sites or glyphosate (100ml/10L + penetrant) for very dense sites. Use a marker dye to avoid wastage and a foaming agent to help prevent spray drift. Leave the plants in the ground until the roots have died off.

What can I do to stop it coming back?

Seed banks reinfest bared, burnt and sprayed sites, and grazed plants resprout. Plan for increased fire risk after control. Pampas recedes as shade increases, so encourage weed replacement (planting, regeneration) as you carry out control. Follow up as needed, but do not reapply herbicide too soon after the initial treatment - wait until the plant actively begins growing again.

Parrots Feather

Botanical Name

Myriophyllum aquaticum

Family

Myriophyllaceae family

Also known as

Brazilian milfoil, water milfoil, Myriophyllum brasiliense

Where is it originally from?

South America

What does it look like?

Bottom-rooted, perennial floating and emergent plant with stolons, fibrous roots, and stems (5 mm diameter) that grow to 2 m long (3-4 m in flowing water) emerging 10 cm above water and rooting at lower nodes, with submerged parts become bare. Feather-like blue-green leaves (25-45 x 7-15 mm) are in whorls of 5-6, and are each divided into 25-30 leaflets (7 mm long). From September to February, minute female flowers are produced, but no seed is set in New Zealand.

Are there any similar species?

Hornwort (Ceratophyllum demersum) is similar.

Why is it a pest?

All nodes can take root and it forms mats in still or slow water or on damp ground. Prefers water that has high nutrient levels, high sediment levels (especially peat levels) and which is polluted, but tolerates damage, grazing, hot and cold temperatures and salt water at low levels.

How does it spread?

Within catchments it is spread by flowing water, and new catchments are infested by fragments spread by boats and trailers, eel nets, diggers, and people 'liberating' fish. Birds are unlikely to spread it.

What damage does it do?

Forms dense mats, shading out existing native species and preventing new seedlings of native species from establishing, and replaces species that usually grow on the margins

of waterbodies. Large clumps dislodge, causing flooding, and rotting vegetation stagnates water, killing fauna and flora.

Which habitats is it likely to invade?

Disturbed, polluted, high nutrient, well-lit, still or slow-moving waterbodies, as well as wetlands, water margins, streams, rivers, slightly saline estuary edges and river mouths.

What can I do to get rid of it?

1. Rake up (November-January): Leave on site to rot down. away from water, and then follow up from February to April by spraying any regrowth.
2. Weedmat: Lay carefully to ensure fragments are not released, start at top of infestation, leave 3-4 months.
3. Spray terrestrial sites (spring-autumn): glyphosate (20ml/L + penetrant) spray 4 times over a 10 or more week programme.
4. Lower water level, mechanically remove, use weedmat to cover the area or dry out thoroughly for 2-3 weeks.

What can I do to stop it coming back?

Plant trees adjacent to narrow waterbodies to create shade, create riparian strips, and remove pollution sources to prevent nutrient runoff.

Purple Loosestrife

Botanical Name
Lythrum salicaria

Family
Lythraceae family

Also known as
Bouquet-violet

Where is it originally from?
Europe and Asia

What does it look like?
Erect, hairy, summer-green perennial herb to 1-2 m (occasionally to 3m) with a taproot and fibrous roots that form dense surface mats and produce up to 50 stems per rootstock. Much-branched stems are 4-8 sided, pink at base and die off in winter. Narrow leaves (20-100 x 5-25 mm) are usually paired. From December to February a showy, densely hairy flowerhead spike (20-25 cm long) is produced, made up of purple-magenta flowers with 5-6 petals, which are followed by blackish seed capsules (3-5 mm long).

Are there any similar species?
No similar species grow this tall.

Why is it a pest?
Rapidly invades damp ground and shallow water. 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.

How does it spread?
Seed is spread by the movement of water and contaminated machinery, soil, livestock and hay.

What damage does it do?
Forms massive, tall, impenetrable stands, excluding all other species. Destroys wetland and marginal habitats and food sources for many fish and bird species, and causes blockages and flooding.

Which habitats is it likely to invade?
Invades wetlands, lakesides, streams, swamps, bogs that are damp in winter and drier in summer, and creeps onto dry margins.

What can I do to get rid of it?

Start control work at margins to prevent further seeding, and work downstream where possible.

1. Weedmat: kills whole patches. Start at top of infestation, leave 3-4 months.
2. Spray: glyphosate (10ml/L). Respray until eliminated.
3. Spray terrestrial sites: triclopyr 600 EC (30ml/10L) or triclopyr 120g/L (15ml/L). Follow up 3-monthly.
4. Lower water level if possible and mechanically remove.
5. Raise water level if possible for 2-3 weeks to drown the weed.

What can I do to stop it coming back?

Plant tall trees adjacent to infested margins to shade out weed, and deepen water if possible to prevent growth

Wild Ginger

Botanical Name

Hedychium gardnerianum / flavescens

Family

Zingiberaceae family

Also known as

kahili ginger, ginger lily

Where is it originally from?

South Africa

What does it look like?

Non-woody perennial to 2 m tall, ginger-scented. Massive, taro-like rhizomes are long, shallow rooted, much-branched, growing over each other close to the ground surface, and form deep beds. Each rhizome segment (4 x 10 cm) usually produces an aerial stem annually. Soft, erect stems (to 2 m) are unbranched and thicken to a short pinkish 'collar' at the base. Shiny, slightly hanging leaves (20-45 x 10-15 cm) are alternate. Flowerheads (25-45 cm tall) with many fragrant, lemon-yellow flowers with conspicuous red stamens are produced from January to March and develop into a fruiting spikes with fleshy orange fruits (15-20 mm long) containing many bright scarlet seeds.

Are there any similar species?

Canna species, and Zingiber spectabile are similar. Alternatives: A couple of nice natives you could try instead are Parataniwha (Elatosterma rugosum) or Rengarenga lily (Arthopodium cirratum).

Why is it a pest?

Extremely shade-tolerant, tolerates most soil types, good or poor drainage and fertility, and is drought and frost tolerant once established. Long-lived, fast growing and forms deep rhizome beds. Moderate amount of seed produced that are dispersed widely, and rhizomes resprout from any fragment and can survive immersion in the sea, crushing, and years away from soil. Wild ginger can grow within native bush. Nothing can grow up through the mats of tubers, and the dense leaves block light and smother natives.

How does it spread?

Seeds are spread by birds and possibly possums. Rhizomes spread slowly outward from clumps, and new plants are established from rhizome fragments spread in dumped vegetation and fill, and by soil movement, flooding, and contaminated machinery.

What damage does it do?

Dense rhizome beds replace all other species, and are shallow rooted, so when they become heavy with rain they can slip on steep sites and streambanks, causing erosion. Succeeded only by weedy vines.

Which habitats is it likely to invade?

Most habitats except dry rocky areas: damp forest and margins, streamsides, river systems, shrublands, fernland, and inshore islands. It is frost-tender but grows under canopy in cool forests.

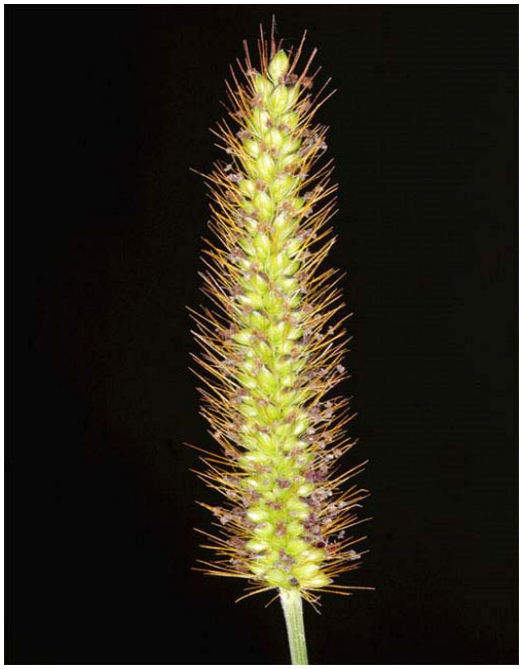
What can I do to get rid of it?

1. Cut down and paint stump (all year round): cut above pink 'collar' at base and apply or glyphosate (250ml/L) or metsulfuron-methyl 600g/kg (1g /L). Leave stems and leaves on site to rot down.
2. Dig or pull out small plants (all year round). Don't compost, leave on site to rot down or hang rhizomes in trees, as they survive indefinitely. Dispose of rhizomes at a refuse transfer station or by drying out and burning.
3. Spray (all year round): metsulfuron-methyl 600g/kg (5g/10L knapsack). Add penetrant in winter. For dense patches keep spray away from roots of vulnerable plants. Don't replant sprayed sites for 6 months.

What can I do to stop it coming back?

Seeds survive for 2-4 years so it is possible to eliminate this plant from sites. Maintain rolling front and check for seedlings annually.

Yellow Bristle Grass



Botanical Name

Setaria pumila

Family

Poaceae (grass)

Also known as

Yellow foxtail

Where is it originally from?

China

What does it look like?

Yellow bristle grass is an upright annual-seeding plant growing 25-45cm high. In open pasture its first leaves are typically parallel to the ground. The leaves are yellow-green to green in colour and usually red or purple at the base. They are flat, hairless, soft and twisted. The leaf sheath is flattened.

Are there any similar species?

Knot-root bristle grass, Rough bristle grass, Summer grass are all similar.

Why is it a pest?

Yellow bristle grass (YBG) is an aggressive annual-seeding plant which spreads rapidly through pasture, reducing pasture quality. Cows don't willingly eat it, leading to low pasture utilisation. Grazing avoidance leads to rapid re-infestation and an opening for other weeds.

How does it spread?

YBG reproduces only by seed. Seeds pass through the rumen and are spread around the farm in dung. Seeds are also spread by water, soil movement, animals and as contaminants of hay and maize. The barbed seeds stick to and are often carried in fur, feathers, or clothing.

What damage does it do?

Spreads rapidly through pasture, reducing pasture quality. Cows don't willingly eat it, leading to low pasture utilisation. Grazing avoidance leads to rapid re-infestation and an opening for other weeds.

Which habitats is it likely to invade?

Roadsides and waste areas, low quality pasture particularly in drought years.

What can I do to get rid of it?

If you think you have found Yellow Bristle Grass contact The West Coast Regional Council biosecurity staff.

What can I do to stop it coming back?

1. Better pasture competition: reduce or eliminate damage to pastures at the time when yellow bristle grass germinates, between October and December.
2. Elimination of seed production: remove seeds through early topping (before viable seed are set), heavy grazing or chemical spray topping.
3. Complete renovation: for poor pastures complete renovation is the best option, either by going through a summer crop such as chicory (where grass weeds are easily controlled) or by spraying out with glyphosate in early autumn. In either case a strong sward needs to be established before winter. If winter weeds are present they should be sprayed with 2,4-DB or MCPB herbicide, which won't damage clovers, so as not to leave gaps in the new pasture in early summer. Pasture grasses and clovers appropriate to local conditions should be used in the grass mixture.

Yellow Flag Iris

Botanical Name

Iris pseudacorus

Family

Iridaceae family

Where is it originally from?

Europe, Asia, North Africa

What does it look like?

Robust aquatic perennial to 1-2 m that grows in leafy clumps and forms dense rhizomes (up to 3 cm diameter). All parts are odourless when crushed. Stems are round, and several long sword-like leaves (1 m x 2-3 cm) emerge in fans from a reddish base. From October to December pale-yellow to golden-orange flowers (up to 12 cm diameter) are produced, followed by seed capsules (5 x 2 cm) containing many brown, flattened, 3-sided to disc-like seeds.

Are there any similar species?

Many Gladiolus and related species are similar, and there are four other exotic Iris species that appear in the wild. Iris pseudacorus is the only aquatic species that grows in clumps and has tall stems and yellow flowers.

Why is it a pest?

Rhizomes form dense floating mats, and it overtops native species that grow on margins of waterbodies Tolerant of saline, frost, flooding and drought, high-low fertility, many soil types, and damage. Poisonous, so usually not grazed by stock.

How does it spread?

Seeds and rhizome fragments are spread by water and contaminated machinery. It is a 'garden escape' plant that has spread from gardens and deliberate plantings into the environment.

What damage does it do?

Rhizome mats displace native plants, especially vulnerable species that live on the margins of waterbodies. It can cause flooding and changes in the water levels in swamps. Poisonous seeds may have an impact on birdlife.

Which habitats is it likely to invade?

Swampy ground, fresh or brackish water margins, lakes, salt marsh, and wet sandy areas.

What can I do to get rid of it?

1. Weed wipe (spring-autumn): glyphosate (333ml/L + penetrant).
2. Stem injection (all year round): 5 ml undiluted glyphosate into each stem at base.
3. Spray (spring-autumn): glyphosate (100ml/10L + penetrant) or metsulfuron-methyl 600g/kg (0.5g/10L).

What can I do to stop it coming back?

Plant tall shading species adjacent to sites, and exclude livestock. Prevent seeding, and ensure regular follow-up of sites that have been controlled, as rhizomes resprout and seed bank can reinfest bared sites.

Appendix 1D
Sustained Control Pest Plant Information Sheets

Broom

Botanical Name
Cytisus scoparius

Family
Fabaceae (pea) family

Also known as
English or Scotch broom, Sarothamnus scoparius

Where is it originally from?
Europe, Asia Minor, Russia

What does it look like?
Erect, much branched, almost leafless, deciduous shrub to 2.5 m with a woody rootstock. Silky-hairy young twigs mature into woody, flexible green stems that are 5-ribbed and hairless. Leaves are divided into three sections (each 5-20 mm) that readily fall off the stems. Single or paired, golden-yellow (occasionally reddish), pea-like flowers (15-25mm) are produced from September to April and are followed by oblong green pods (30-60 mm) that turn black as they mature and eventually disperse seeds explosively, leaving empty coils hanging from the plant. Broom is a common sight from Taupo in the North Island, right down to Southland.

Are there any similar species?
Montpellier, Spanish and white broom. Tree lucerne, Teline stenopetala, and native Carmichaelia species are all similar. Alternatives: Check with your local garden centre for non-weedy varieties of broom that you can plant instead of this weedy one, or use another species such as miniature toi toi (Chionochloa species) or small ornamental flaxes (Phormium species).

Why is it a pest?
Broom is a prolific seeder that spreads rapidly, matures quickly, and colonises large areas, forming pure stands that dominate habitats. As it is a legume and can fix nitrogen in the soil, it can change the types of plants which can survive where it has been growing, disturbing the ecology of an area. It is a particular problem on riverbanks and lakesides, roadsides, forest tracks and firebreak areas. Tolerates warm to very cold temperatures, most well drained soil types, grazing, fire, and high to low rainfall.

How does it spread?
Explosive seed mechanism spreads seed 1-5 m from the parent plant, and they are also spread by machinery, soil and water movement, and possibly birds and feral pigs. Common seed sources include quarries, roadsides, forest tracks, metal dumps, fire breaks, exotic forests, skid sites, riverbeds, domestic gardens, and disturbed land.

What damage does it do?
Can form pure stands in many habitat types. Dominates low canopy habitats, preventing the seedlings of native species from establishing. Increased nitrogen in gumlands and other impoverished soil types may result in changing habitats and plant species being present to the detriment of specialised plants eg orchids, ferns, herbs, kauri, or can lead to further weed invasion.

Which habitats is it likely to invade?

River systems, shrublands, forest margins, low canopy habitats, coastline, tussockland, fernland, wetland, consolidated sand dunes, gumlands, regenerating and disturbed forest, and bare land.

What can I do to get rid of it?

Firstly establish plant is not native broom. Control only where broom is a recent threat, of low incidence or poses a high ecological threat.

1. Introduce biocontrol agents where possible - contact your regional council for more information.
2. Pull or dig small plants (all year round). Ensure minimum soil disturbance. Leave on site to rot down.
3. Stump swab (all year round): triclopyr 600 EC (50ml/L) or Yates Hydrocotyl Killer (250ml/L) or metsulfuron-methyl 600g/kg (5g/L).
4. Wick wipe (spring-summer): triclopyr 600 EC (200ml/L).
5. Spray (spring-summer): metsulfuron-methyl 600g/kg (7.5g/15L + penetrant (knapsack) or 35g/100L + penetrant (spraygun)) or Tordon Brushkiller (90ml/15L (knapsack) or 200-300ml/100L + penetrant (spraygun)).

What can I do to stop it coming back?

Resprouts after slashing. Colonises bare areas, reinvades after non-selective spraying, fire or soil disturbance. Not long-lived, relying on seedling replacement. Light lover, so is succeeded in tall canopy habitats by taller native species where their seedlings exist (not in kauri or tanekaha forest). These sites can be left, regeneration can be speeded by slashing, selective spraying or replanting of shade-creating species. Clear roads, metal dumps, quarries. Maintain pest and livestock control, as broom is not browsed as readily as native species and recovers more quickly from browsing.

Giant Buttercup

Botanical Name

Ranunculus acris

Family

Ranunculaceae

Where is it originally from?

Europe

What does it look like?

Growing from a sturdy rhizome, Giant Buttercup becomes a hairy perennial up to 1m tall. Seedlings are initially hard to identify but once the plant begins growing strongly in the early spring, the characteristic adult large, pointed leaves, with deep incisions, make for ready identification. This is further confirmed when the 25mm diameter yellow flowers begin to open in November and December.

Are there any similar species?

Creeping buttercup

Why is it a pest?

Giant Buttercup is a pervasive, difficult to control pastoral weed, particularly on dairy farms where cows avoid it because of its bitter taste. Plant populations tend to increase under dairy grazing pressure. Giant Buttercup also thrives after fertilizer applications and in some areas has become resistant to phenoxy herbicides, such as 24-D, MCPA and MCPB, after repeated applications. Other newer forms of herbicide, whilst having a controlling effect, do not eradicate Giant Buttercup and progress on finding an effective biological control agent has been slow. With Giant Buttercup seed being easily spread on the hooves and coats of grazing animals, on mowers and haymaking equipment, and in hay made from paddocks containing the plant, sustained vigilance is far and away the best option for property owners. An infestation of Giant Buttercup causes both reduced farm productivity and ongoing control costs.

How does it spread?

Seed is easily spread on the hooves and coats of grazing animals, on mowers and haymaking equipment, and in hay made from paddocks containing the plant.

What damage does it do?

Dairy and other cattle avoid grazing the plant and its surrounding pasture thus it reduces the pasture's stock-carrying capacity in proportion to its coverage.

What can I do to get rid of it?

For Flumetsulam based herbicides (e.g. Preside)

This product must be under the care of an approved handler when applied in a wide dispersive manner or used by a commercial contractor. Records of use must be kept under certain circumstances.

- Apply in the warmer months of the year prior to flowering
- Apply 65 grams of Preside per hectare
- Enhance control by addition of Uptake spraying oil at 500 mls per 100 litres of water
- Ensure all plants are sprayed thoroughly

For MCPB based herbicides

- Apply in the warmer months of the year prior to flowering over a 2 year period
- Apply 6 litres of MCPB per hectare
- Ensure all plants are sprayed thoroughly
- Repeat treatment in the following spring

Gorse

Botanical Name

Ulex europaeus

Family

Fabaceae family

Where is it originally from?

Europe

What does it look like?

Sharply spiny shrub to 2-3 m tall with woody erect or spreading stems which are many-branched in younger plants but become bare at the base as the plant gets older. Leaves are reduced to spines, new leaves less so. Spines are deeply furrowed. Pea-like yellow flowers (13-20 mm long) appear from May to November (occasionally all year round), followed by hairy seed pods (13-25 mm long) which turn black when mature and explode to release seeds.

Are there any similar species?

No.

Why is it a pest?

Produces massive numbers of long-lived seeds, matures and grows rapidly, and is versatile about habitat. Tolerates hot to cold temperatures, high to low rainfall, wind, salt, damage and grazing, and all soil types.

How does it spread?

Explosion of seed pods spreads seed up to 5 m from the parent plant, and seed is also spread by soil movement and road graders, contaminated machinery, animals, boots, stock food and lime. Hedges, roadsides, waste land, farms, quarries, forest tracks, metal dumps, fire breaks, exotic forests, skid sites, and riverbeds are all common seed sources.

What damage does it do?

Forms pure associations temporarily in many habitats, inhibiting the establishment of native plant seedlings. Increased nitrogen in poor soil types (eg. gumland, sand dunes) may change the types of species present and nature of habitats to the detriment of specialised plants, eg herbs, orchids, low ferns. Can have positive impacts on bared ex-forest sites as it acts as a nursery crop for native species, adds nitrogen, humus, windbreak and shade, and opens up when older and disappears when overtopped. Succession to native species may be less likely on dry sites.

Which habitats is it likely to invade?

River systems, shrublands, forest margins, coastline, tussockland, fernland, wetland, consolidated sand dunes, gumlands, cliffs, disturbed forest, exotic plantations, poor pasture, and bare land.

What can I do to get rid of it?

1. Introduce biocontrol agents wherever possible - check with your regional council for more information on this.
2. Stump swab: glyphosate (250ml/L) or metsulfuron-methyl 600g/kg (2g/L) or triclopyr 600 EC (250ml/L) or Tordon Brushkiller (100ml/L) or Vigilant gel.
3. Spray (spring-summer): triclopyr 600 EC (20ml/10L) or triclopyr 300 EC (40ml/10L).
4. Spray (autumn-winter): metsulfuron-methyl 600g/kg (5g/10L+ penetrant - knapsack) or (20g/100L + penetrant - spraygun) or Tordon Brushkiller (250ml/100L spraygun).
5. Frilling: With a sharp chisel or axe, make a deep cut into the sapwood at regular intervals around the base of the tree, taking care not to ring-bark the plant. Immediately saturate each cut with undiluted Tordon Brushkiller.
6. Injection method: As each hole is drilled saturate it with undiluted Tordon Brushkiller using a sheep drench pack with a spraygun.

What can I do to stop it coming back?

Stumps resprout quickly. Reseeds profusely, especially after fire, disturbance or non-selective spraying. Do not burn or graze. Only use glyphosate spray when all vegetation on site is to be bared for replanting (generally not recommended). Maintain humus layer. Sites with appropriate tall forest species present can usually be left to be overtopped, can speed by selective slashing, stump swabbing or planting. Maintain roadsides, cuttings and other vectors, check road gravel and fill.

Ragwort

Botanical Name

Jacobaea vulgaris

Family

Asteraceae (daisy) family

Also known as

Senecio jacobaea, tansy ragwort, St James' wort

Where is it originally from?

Europe, West Asia

What does it look like?

Smelly biennial or perennial (occasionally annual) herb to 30-120 cm tall, with a tap root (crown) with numerous fibrous roots extending 30+ cm. Wavy, lobed leaves (5-20 x 4-6 cm) emerge initially from a basal rosette, and stem leaves are deeply cut, clasp the stem, and have no broad terminal lobes. Erect, rigid stems (50-120 cm) are single (multiple in perennial plants), usually purplish and usually branch above the middle. Yellow, daisy-like flowers (up to 2 cm diameter) with golden yellow centres are produced from November to April and have 11-13 yellow petal-like florets in compact, flat-topped clusters at the ends of stems. Seeds are like thistledown.

Are there any similar species?

Marsh ragwort (*Senecio aquaticus*) is a very similar exotic that has established in the wild. Also the native groundsel and fireweed Senecio species that are mostly unique to New Zealand are similar.

Why is it a pest?

Matures quickly, and produces massive numbers of viable, long-lived, widely dispersed seeds that can rapidly colonise bare spots, light gaps and margins in full or partial light. Tolerates very hot to very cold temperatures, very wet to moderately-dry conditions, most soil types, and a little shade.

How does it spread?

Wind spreads seeds over great distances, and they are also spread by water, soil movement, contaminated machinery, livestock, lime, clothing and hay.

What damage does it do?

Forms dense stands in disturbed and grazed areas, and can (usually temporarily) prevent the establishment of seedlings of native plant species.

Which habitats is it likely to invade?

Invades disturbed forest and shrubland, short tussockland, fernland, herbfield, wetlands, inshore and offshore islands, river systems, bare land, and coastal areas throughout New Zealand.

What can I do to get rid of it?

1. Weed wipe (spring-summer only): glyphosate (333ml/L + penetrant) or metsulfuron-methyl 600g/kg (5g/L + penetrant) or Tordon Gold (500ml/L).
2. Spray rosette plants (winter-spring only, before stem formed): 2,4-D (50ml/10 litres (knapsack) or 1-3 litres/ha in 300 litres water (boom spraying).
3. Spray: cut any seedheads and dispose of by burning or deep burial, apply glyphosate (100ml/10L knapsack) or metsulfuron-methyl 600 g/kg (5g/10L knapsack) ensuring entire plant is covered.
4. Granules (all year round): Cut seedheads and dispose of by burning or deep burial, apply Tordon 2G (2g/plant - a half level teaspoon) to the the crushed centre of each plant.
5. Grubbing or pulling ragwort is best done at full to late flowering stage, when the roots are less likely to regrow. Flower heads of pulled plants should be burned. Damaged plants (from cutting, digging, pugging, mowing or poor spraying) usually regrow, form large additional root crowns (multicrown) and become perennial, ie. flowering annually and not dying. These plants do not respond to 2,4-D herbicide, requiring tougher, more residual herbicides.

What can I do to stop it coming back?

Ragwort can be left in regenerating bush and shrubland (apart from obligations under Pest Management Strategies), as they will disappear as light levels fall. Longitarsus beetle gives good control but takes 2-5 years to attain sufficient numbers, so patience is required - check with your regional council for more information on this biological control agent.

Appendix 2
National Pest Plant Accord Species

Scientific name	Common name
Ailanthus altissima	Tree of heaven
Akebia quinata	Chocolate Vine
Alternanthera philoxeroides	Alligator weed
Anredera cordifolia	Madeira vine
Araujia hortorum	Moth plant
Aristea ecklonii	Aristea
Arundo donax	Giant reed
Asparagus aethiopicus	Bushy asparagus
Asparagus asparagoides	Smilax
Asparagus plumosus[3]	Asparagus fern
Asparagus scandens	Climbing asparagus
Berberis darwinii	Darwin's barberry
Bomarea multiflora	Bomarea
Bryonia cretica	White bryony
Calluna vulgaris (excluding double flowered cultivars)	Heather
Cardiospermum grandiflorum	Balloon vine
Cardiospermum halicacabum	Small balloon vine
Carpobrotus edulis	Ice plant
Carex pendula[3]	Dropping sedge
Celastrus orbiculatus	Climbing spindle berry
Cenchrus (all species, excluding C. clandestinus and C. americanus)	
Ceratophyllum demersum	Hornwort
Cestrum aurantiacum[3]	Orange cestrum
Cestrum elegans[3]	Red cestrum
Cestrum fasciculatum[3]	Red cestrum
Cestrum nocturnum[3]	Queen of the night
Cestrum parqui	Green cestrum
Chrysanthemoides monilifera	Boneseed
Clematis flammula	Clematis
Clematis vitalba	Old man's beard
Clerodendrum trichotomum[3]	Clerodendrum
Cobaea scandens	Cathedral bells
Cortaderia jubata	Purple pampas
Cortaderia selloana	Pampas
Cotoneaster simonsii	Khasia berry
Cotyledon orbiculata (and cultivars)	Pig’s ear
Crassula multicava	Pitted crassula
Cyathea cooperi	Australian tree fern
Dipogon lignosus	Mile-a-minute
Drosera capensis	Cape sundew
Eccremocarpus scaber	Chilean glory creeper
Egeria densa	Oxygen weed
Ehrharta villosa	Pyp grass

Scientific name	Common name
Eichhornia crassipes	Water hyacinth
Eomecon chionantha	Snow poppy
Equisetum (all species)	Horsetail
Eragrostis curvula	African love grass
Erigeron karvinskianus	Mexican daisy
Euonymus japonicus (excluding small-leaved cultivars such as 'Microphylla' and 'Emerald Gem')	Japanese spindle tree
Fallopia japonica (and hybrids)	Asiatic knotweed
Fallopia sachalinensis (and hybrids)	Giant knotweed
Ficus rubiginosa	Port Jackson fig
Fuchsia boliviana	Bolivian fuchsia
Gunnera tinctoria	Chilean rhubarb
Gymnocoronis spilanthoides	Senegal tea
Hedychium flavescens	Yellow ginger
Hedychium gardnerianum	Kahili ginger
Heracleum mantegazzianum	Giant hogweed
Homalanthus populifolius	Queensland poplar
Houttuynia cordata	Chameleon plant
Hydrilla verticillata	Hydrilla
Hydrocleys nymphoides	Water poppy
Hypericum androsaemum	Tutsan
Ipomoea indica	Blue morning glory
Iris pseudacorus	Yellow flag
Jasminum humile	Italian jasmine
Juglans ailantifolia[3]	Japanese walnut
Kennedia rubicunda[3]	Dusky coral pea
Lagarosiphon major	Lagarosiphon
Lamium galeobdolon	Aluminium plant
Lantana camara	Lantana
Ligustrum lucidum	Tree privet
Lilium formosanum	Formosa lily
Lonicera japonica	Japanese honeysuckle
Ludwigia peploides subsp. montevidensis	Primrose willow
Lythrum salicaria	Purple loosestrife
Macfadyena unguis-cati	Cat's claw creeper
Maytenus boaria[3]	Chilean mayten
Megathyrsus maximus var. pubiglumis	Guinea grass
Menyanthes trifoliata	Bogbean
Moraea flaccida	Cape tulip
Myoporum insulare and hybrids	Tasmanian ngaio
Myrica faya	Fire tree
Myricaria germanica	False tamarisk
Myriophyllum aquaticum	Parrot's feather
Nassella (all species)	Nassella

Scientific name	Common name
Nephrolepis cordifolia	Tuber ladder fern
Nuphar lutea	Yellow water lily
Nymphaea mexicana	Mexican water lily
Nymphoides geminata	Marshwort
Nymphoides peltata	Fringed water lily
Ochna serrulata	Mickey Mouse plant
Osmunda regalis	Royal fern
Passiflora apetala[3]	Bat-wing passion flower
Passiflora caerulea	Blue passion flower
Passiflora tarminiana	Northern banana passionfruit
Passiflora tripartita (all subspecies)	Banana passionfruit
Phragmites australis	Phragmites
Pilosella (all species)	Hawkweed
Pinus contorta	Lodgepole pine
Pistia stratiotes	Water lettuce
Pithecoctenium crucigerum[3]	Monkey's comb
Pittosporum undulatum	Sweet pittosporum
Plectranthus ciliatus	Plectranthus
Polygala myrtifolia (excluding cultivar 'Grandiflora')	Sweet pea shrub
Polypodium vulgare[3]	Polypody
Potamogeton perfoliatus	Clasped pondweed
Prunus serotina	Rum cherry
Pyracantha angustifolia	Firethorn
Rhamnus alaternus	Rhamnus
Rhododendron ponticum	Wild rhododendron
Sagittaria montevidensis	Arrowhead
Sagittaria platyphylla	Sagittaria
Sagittaria sagittifolia	Arrowhead
Salix cinerea	Grey willow
Salix fragilis	Crack willow
Salvinia molesta	Salvinia
Schinus terebinthifolius	Christmas berry
Schoenoplectus californicus	Californian bulrush
Selaginella kraussiana	African club moss
Solanum marginatum	White edged nightshade
Solanum mauritianum	Woolly nightshade
Syzygium smithii	Monkey apple
Tradescantia fluminensis	Wandering Willie
Tropaeolum speciosum	Chilean flame creeper
Tussilago farfara	Coltsfoot
Typha latifolia	Great reedmace
Utricularia arenaria	Bladderwort
Utricularia gibba	Bladderwort
Utricularia livida	Bladderwort

Scientific name	Common name
Utricularia sandersonii	Bladderwort
Vallisneria australis	Eelgrass
Zantedeschia aethiopica 'Green Goddess'	Green goddess
Zizania latifolia[4]	Manchurian wild rice