



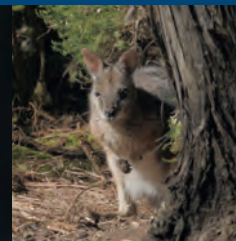
# Regional Pest Management Plan for the Bay of Plenty Region

## Te Mahere Patu Kīrearea ā-Rohe e Marohitia Ana mō Toi Moana

2020 – 2030

Bay of Plenty Regional Council  
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# Bay of Plenty Regional Pest Management Plan

## Update Record

Date	Change/Update	Provisions Affected
26 June 2023	Minor amendments approved by Regional Council 4 May 2023.	<ul style="list-style-type: none"> <li>• Section 2.3 Relationship with other pest management plans</li> <li>• Table 1 Organisms classified as pests</li> <li>• Table 2 Exclusion programme pests</li> <li>• Table 3 Management regime for the exclusion programme</li> <li>• Table 4 Eradication programme pests</li> <li>• Rule 7</li> <li>• Glossary</li> <li>• Appendix 2 Quick reference to all rules included in this RPMP</li> <li>• Appendix 3 Delivering the strategic direction</li> </ul>
7 December 2021	Modifications in accordance with the directions of the Environment Court in its decision dated 23 September 2021.	<ul style="list-style-type: none"> <li>• Table 1 Organisms classified as pests</li> <li>• 6.1 Exclusion programme</li> <li>• 6.4 Sustained Control programme</li> <li>• Table 10 Management regime for the Sustained Control programme</li> <li>• Table 14 Allocation of funding</li> <li>• Glossary</li> <li>• Appendix 1: Advisory pests</li> </ul>



**BAY OF PLENTY REGIONAL COUNCIL  
TOI MOANA**

**BAY OF PLENTY REGIONAL PEST MANAGEMENT PLAN  
2020-2030**

Pursuant to section 77 of the Biosecurity Act 1993 and in accordance with the directions of the Environment Court in its decision dated 23 September 2021, the Regional Pest Management Plan for the Bay of Plenty 2020–2030 has been modified and is now made fully operative.

The Common Seal of the **BAY OF PLENTY REGIONAL COUNCIL** was affixed hereto this 7th day of December 2021 in the presence of:



Douglas Leeder  
**Chairman**



Fiona McTavish  
**Chief Executive**





**BAY OF PLENTY REGIONAL COUNCIL  
TOI MOANA**

**BAY OF PLENTY REGIONAL PEST MANAGEMENT PLAN  
2020-2030**

Pursuant to section 77 of the Biosecurity Act 1993, it is hereby certified that the Regional Pest Management Plan for the Bay of Plenty 2020–2030 is made in part and commences on 17th December 2020, excluding the advisory pest plants in Appendix 1 which is subject to an application to the Environment Court.

The Common Seal of the **BAY OF PLENTY REGIONAL COUNCIL** was affixed hereto this 17th day of December 2020 in the presence of:



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Douglas Leeder  
Chairman



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Fiona McTavish  
Chief Executive





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# Council's Pest Management Strategic Direction/Te Aronga Rautaki Patu Kīrearea a Toi Moana

This Regional Pest Management Plan (RPMP) is the key policy document to direct the management of pests in the Bay of Plenty region and demonstrate regional leadership on pest management.

The Biosecurity Act 1993 requires regional councils to 'provide regional leadership in pest management'. Pest management encompasses activities that '*...prevent, reduce, or eliminate adverse effects from harmful organisms that are present in New Zealand*' (section 12(B) Biosecurity Act 1993).

Provisions within this RPMP are the regulatory part of the pest management toolbox. The RPMP by nature of the legislative requirements represents a species led approach to pest management. That means the RPMP lists specific pests, prescribes the level of management required to meet the objectives for that pest and identifies who is responsible for managing the pest.

A number of well-established pests that did not meet the thresholds prescribed by the Biosecurity Act 1993 to be included in the RPMP's pest management programmes have been added as Advisory pests in Appendix 1.

The table below sets out Council's overall biosecurity objectives and aspirations and illustrates how the Council intends to achieve them, including leading pest management responses, supporting other agencies and initiatives and providing advice.

The pest threats that Council needs to manage are constantly changing. There is the constant threat of new pests arriving in the region and the risk of existing pests moving into new areas. Now it is generally acknowledged that climate change is a contributing factor to pest incursions, this is increasing these pest threats. Council intends to address this changing pest landscape through its focus on prevention, detection and early intervention.

While a number of Council's core activities contribute directly to the management of pests, in some cases a targeted approach to pest management is required. For example, to protect high value sites such as biodiversity areas, a site led approach is most effective. Rather than focusing on individual pest species, all pests within a high value site need to be managed. In some cases this may include pests additional to those regulated by the RPMP.

There are no good neighbour rules in the RPMP. Boundary control of pests is managed both through regulation and agreed understandings between neighbours, the Crown and Council.

Strategic direction	Council will achieve this by:
<b>Prevent pests entering and establishing in the Bay of Plenty.</b>	<ul style="list-style-type: none"> <li>• Greater surveillance of 'new to region' pests.</li> <li>• Leading eradication of 'new to region' pests, if feasible.*</li> <li>• Utilising Biosecurity Act 1993 provisions to manage new incursions including partial review of RPMP and small scale eradication.</li> </ul>
<b>Manage pests when it is practical and cost effective to do so, using Council's regulatory and/or operational roles.</b>	<ul style="list-style-type: none"> <li>• Prioritising which pests need Council intervention.*</li> <li>• Leading management of pests where eradication is a feasible option and/or would be of regional benefit.*</li> <li>• Maintaining progressive containment efforts where good progress has been, and can be, made.*</li> </ul>
<b>Support the efforts of landowners/occupiers and communities to manage established pests and prevent pest spread.</b>	<ul style="list-style-type: none"> <li>• Supporting pest management initiatives that protect regional biodiversity.</li> <li>• Providing pest management education and advice on the management of pests.</li> <li>• Embedding pest management considerations into Council decisions and agreements with landowners and occupiers.</li> <li>• Requiring that some pests are destroyed and over time their population/infestation levels are reduced.*</li> <li>• Regulating boundary control for the management of some pests based on equal effort between neighbours.*</li> <li>• Regulating the movement, distribution or release of pests.*</li> <li>• Promoting a pathway management approach initially through education and advice and later through pathway management plans.</li> </ul>
<b>Work in partnership with other parties that have pest management responsibilities and interests.</b>	<ul style="list-style-type: none"> <li>• Supporting national, inter-regional and industry led pest management initiatives and contribute resources where appropriate.</li> <li>• Participating in the National Pest Plant Accord by enforcing a national ban on the sale, propagation and distribution of recognised harmful plants, which have been declared 'unwanted organisms'.</li> <li>• Supporting Māori pest management initiatives.</li> <li>• Supporting agencies that have clear pest management leads.</li> <li>• Promoting on-farm biosecurity.</li> <li>• Promoting marine farm/aquaculture biosecurity.</li> <li>• Participating in collective approaches across pest management agencies.</li> <li>• Working with the Crown to establish agreed understanding around potential boundary pests.</li> <li>• Supporting ongoing science to advance effective pest management including actions to monitor and adapt to climate change impacts on pest species.</li> <li>• Partnering in the delivery of National Pest Management Plans and Pathway Management Plan responses.</li> </ul>
<p><i>*These activities are supported by regulatory provisions in the RPMP.</i></p>	

Council will monitor how this pest management strategic direction is progressing through its annual reporting requirements. Appendix 3 shows how the Council's pest management strategic direction is being delivered at the time this RPMP was completed.

# Plan establishment/ Te whakatū i te mahere

## 1 Introduction/Kupu whakataki

### 1.1 Purpose/Kaupapa

The purpose of the RPMP is to outline Council's pest management framework to efficiently and effectively manage or eradicate specified organisms in the Bay of Plenty region. Doing so will:

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

Many organisms in the Bay of Plenty region 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 has prerequisite criteria that must be met to justify such intervention. The RPMP identifies those organisms classified as pests to be managed through the RPMP.

The RPMP will empower the Bay of Plenty Regional Council to exercise the relevant advisory, service delivery, regulatory and funding functions available under the Biosecurity Act 1993 to deliver the specific objectives identified in Part Four: Pest Management of this RPMP.

### 1.2 Coverage/Te whānui

The RPMP operates within the administrative boundaries of the Bay of Plenty region and covers a total area 21,836 km<sup>2</sup> comprising 12,253 km<sup>2</sup> of land and 9,583 km<sup>2</sup> of coastal marine area.

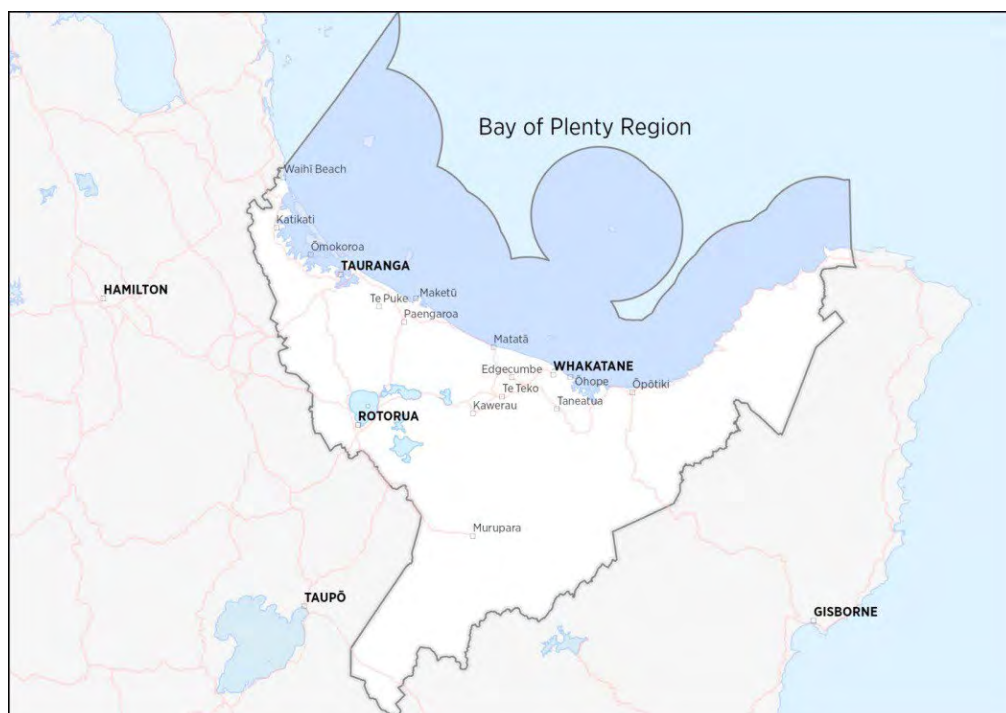


Figure 1 Map of the Bay of Plenty Region.

### 1.3 Duration/Te roa

The RPMP will take effect on the date that it becomes operative under section 77(5) of the Biosecurity Act 1993. It will remain in force for 10 years from that date. The RPMP may cease at an earlier date if the Bay of Plenty Regional Council declares by public notice that the RPMP has achieved its purpose.

A Council can make minor amendments to the RPMP without needing a review. Any minor amendment:

- must not significantly affect any person's rights and obligations, and
- must not be inconsistent with the National Policy Direction for Pest Management 2015.

The Bay of Plenty Regional Council may review the RPMP or any part of it, if it believes circumstances or management objectives have changed sufficiently. A review may result in no change to the RPMP, the RPMP being amended, revoked or the duration extended.

Council must review the RPMP when it has been in force for 10 years.



## 2 Planning and statutory background/Te whakarite mahere me te whakamāramatanga ā-ture

### 2.1 Strategic background/He whakamāramatanga rautaki

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/Te pou tarāwaho haumarukoiora a te Kaunihera

As illustrated in Figure 2 below, regional pest management sits within a biosecurity framework for the 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 often through biodiversity protection works or pest management activities. Links between biosecurity and biodiversity activities are cemented in the Council's pest management strategic direction (see pages 1-2).

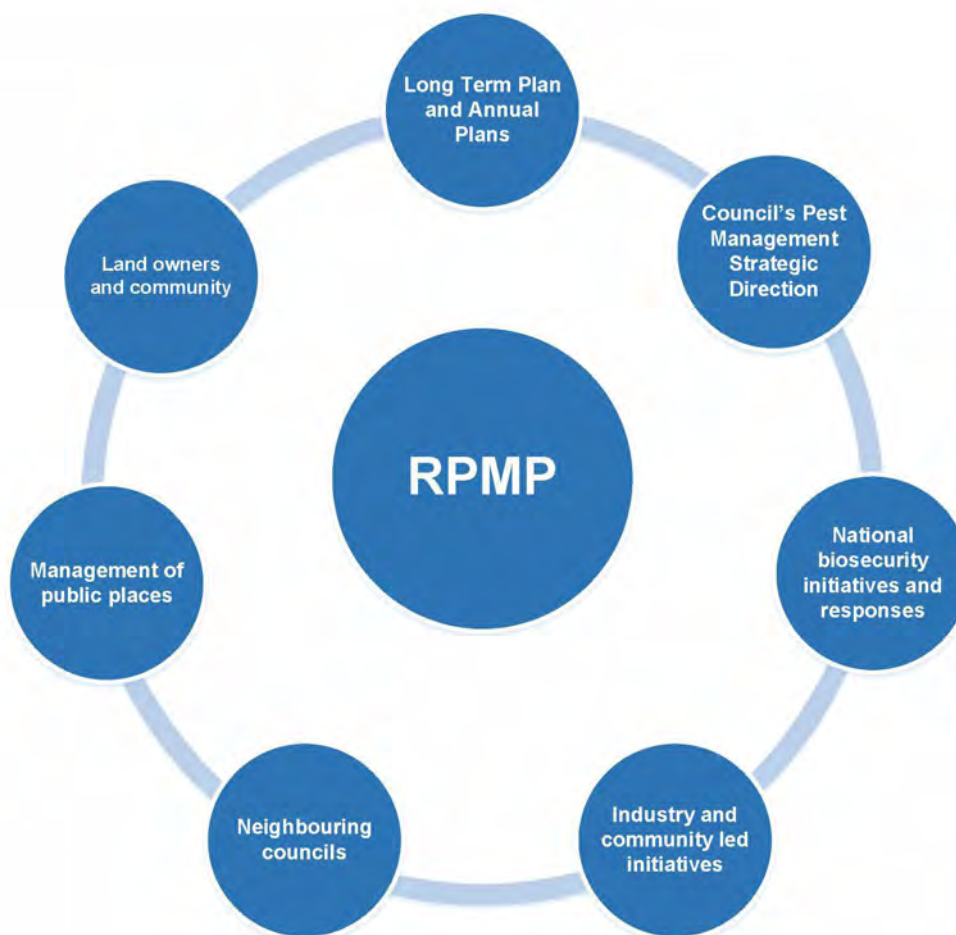


Figure 2 Internal biosecurity instruments.

## **Regional Policy Statement**

The Regional Policy Statement (RPS) for the Bay of Plenty region promotes the sustainable management of natural and physical resources.

Sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while:

- sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations, and
- safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
- avoiding, remedying, or mitigating any adverse effects of activities on the environment.

The Resource Management Act 1991 requires the Council to prepare a RPS for the Bay of Plenty region. The RPS recognises that biosecurity incursions present a threat to the rural production sector, the regional economy and the region's biodiversity. The RPS, Policy IR 9B, requires an integrated approach to biosecurity.

Biosecurity and biodiversity protection are inherently linked. The RPS contains a range of objectives, policies and methods aimed at providing for biodiversity maintenance through both regulatory and non-regulatory approaches.

## **Regional plans**

Regional plans developed under the RMA must give effect to the RPS.

The Regional Natural Resources Plan and the Regional Coastal Environment Plan contain provisions that promote integrated management and require consideration of pest species and how they might be managed. Regional plan provisions to manage air quality also need to be considered during pest management operations, for example, weed spraying.

## **Long Term Plan and Annual Plan**

Section 93 of the Local Government Act 2002 requires Council, at all times, to have a Long Term Plan (LTP). The LTP is the key planning tool for councils and its purpose is to:

- Describe the Council's activities and the community outcomes it aims to achieve.
- Provide integrated decision-making and coordination of the resources of Council.
- Demonstrate accountability to the community.
- Provide an opportunity for public participation in council decision-making processes.

Council's LTP sets the vision and values and outlines Council's activities, how they fit together and how they will be funded. Effective pest management directly contributes to the *healthy environment* community outcome in the Council's LTP, Te Mahere Wa-Roa, 2018-2028.

## **Surveillance and monitoring programme**

Council undertakes routine monitoring and surveillance of pests already in the region as well as looking out for 'new to region' pests. The purpose of this monitoring and surveillance is to fully understand risks to the region, the impact of pests, how pests are distributed, how fast they are spreading, where these pests are likely to come from and future threats. This informs the management response and helps to determine how effective the current management responses are.

### **Operational plans and procedures**

An operational plan is required by the Biosecurity Act 1993 and sets out how the RPMP will be implemented. The Biosecurity Act 1993 requires Council to report annual progress on the RPMP Operational Plan.

One tool Council uses to encourage legal protection of biodiversity sites and ecological restoration is financial grants. The Biodiversity Grants Policy prioritises funding to protect biodiversity sites.

### **Landowners and/or occupiers, industry and the wider community**

Everyone in the Bay of Plenty region has a role to play in biosecurity. Council's pest management strategic direction (as set out on pages 1-2) supports the efforts of landowners/occupiers, industry and communities to manage pests and prevent their spread.

## **2.1.2 Biosecurity framework outside Council**

An effective biosecurity framework works both at a regional and a national level.

Central Government is responsible for preventing pests from entering New Zealand, providing leadership and coordinating or implementing incursion management where eradication from New Zealand remains attainable. Rapid response initiatives and national pest management accords, registers and strategies are examples of the instruments it employs. The Ministry for Primary Industries' (MPI) website, [www.mpi.govt.nz](http://www.mpi.govt.nz), outlines the details of those instruments.

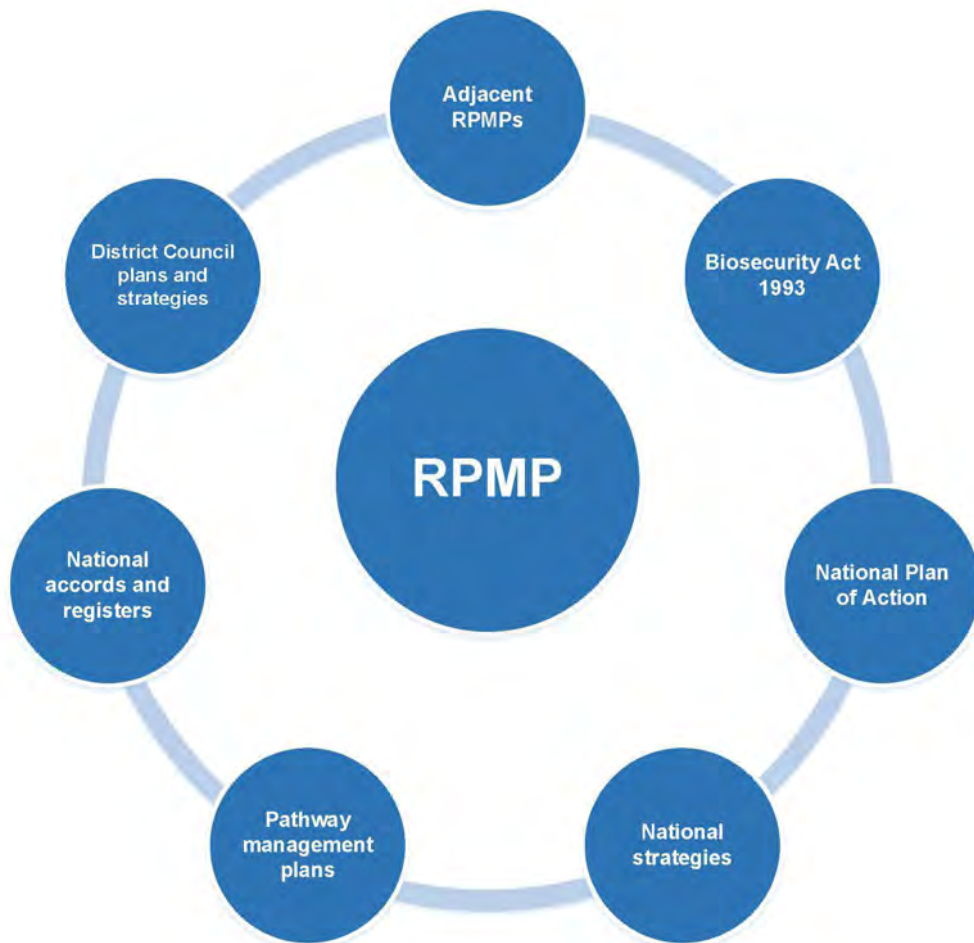


Figure 3 External biosecurity instruments.

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

## 2.2 Legislative background/He whakamāramatanga mō ngā ture

Regional councils undertake 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 used the Biosecurity Act 1993 for pest management by preparing and operating RPMPs.

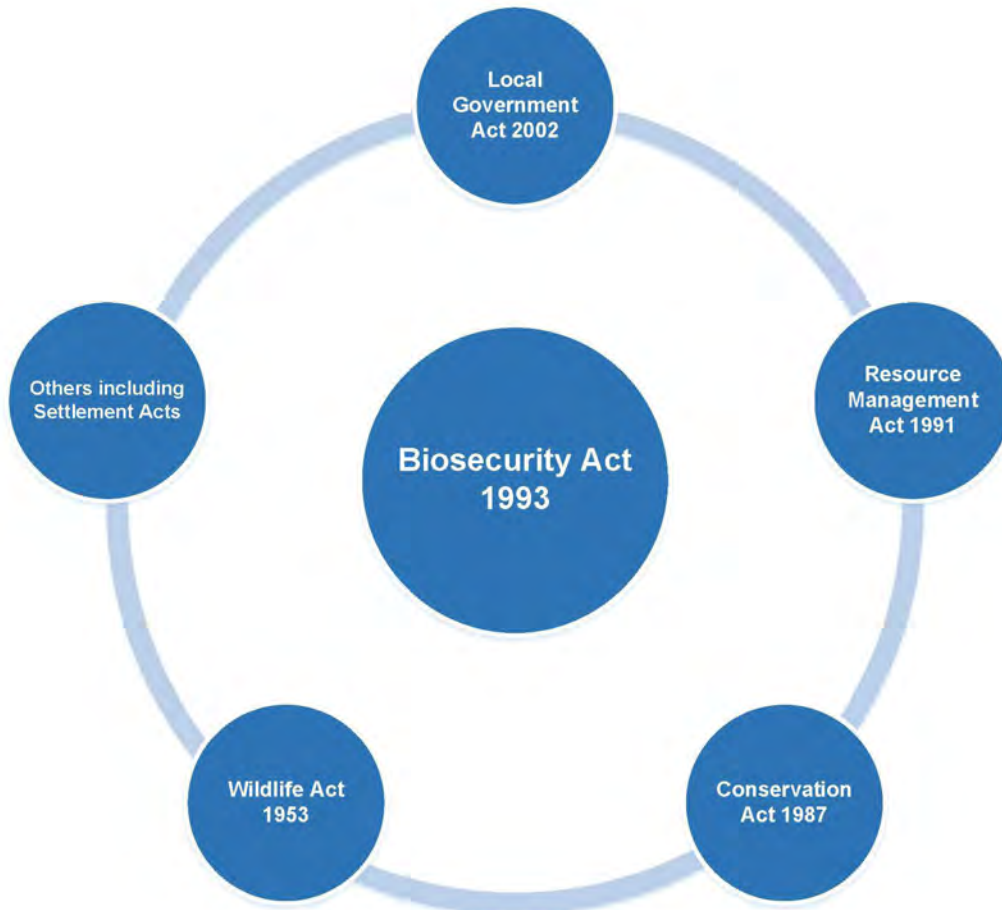


Figure 4 Biosecurity legislation.

### 2.2.1 Biosecurity Act 1993

Under the Biosecurity Act 1993 a regional council can 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 unless it chooses to do so. As such, the Biosecurity 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. As noted in Section 1.1 above, the Biosecurity Act 1993 has prerequisite criteria that must be met to justify such intervention.

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

Regional councils are mandated under Part 2 (functions, powers and duties) of the Biosecurity Act 1993 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 can be summarised as:

- 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. review, amend, revoke or replace a plan).

## ***Part 5: Managing pests and harmful organisms***

Part 5 of the Biosecurity Act 1993 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 ss69-78 of the Biosecurity Act 1993). 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.

Once operative, an RPMP is supported by parts of Part 5 of the Biosecurity Act 1993. For example, a regional council must assess any other proposal for an RPMP, must prepare an operational plan for any RPMP and must prepare an annual report on the operational plan.

## ***Changes to the Biosecurity Act since 1993***

The Biosecurity 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 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 National Policy Direction for Pest Management 2015 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).

The Biosecurity Act 1993 is currently being reviewed again and could be further amended.

## **2.2.2 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. These responsibilities include sustaining the potential of natural and physical resources, safeguarding life-supporting capacity and protecting areas of significant indigenous vegetation and significant habitats of indigenous fauna (ss5(2) and 6(c)).

The RMA sets out the functions of regional councils in relation to the maintenance and enhancement of ecosystems in the water bodies and the CMA of the region (s30(1)(c)(iia)), 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 1993 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.

A National Policy Statement to protect indigenous biodiversity is currently being prepared by central Government under the RMA that will further support Council's pest management activities.

The Biosecurity Act 1993 cannot override any controls imposed under the RMA, for example, bypassing resource consent requirements.

## **2.2.3 Local Government Act 2002**

The purpose of the Local Government Act 2002 (LGA) is to:

- state the purpose of local government,
- provide a framework and powers for local authorities to decide which activities they undertake and the manner in which they will undertake them,
- promote the accountability of local authorities to their communities, and
- provide for local authorities to play a broad role in promoting the social, economic, environmental, and cultural well-being of their communities, taking a sustainable development approach.

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 Regional Council's biosecurity function and related programmes are funded through the long term planning process defined in the LGA.

## **2.2.4 Wild Animal Control Act 1977 (and Wild Animal Control Amendment Act 1997) and the Wildlife Act 1953**

Activities in this RPMP must also comply with other legislation. Two such Acts are the Wild Animal Control Act 1977 (and Wild Animal Control Amendment Act 1997) and the Wildlife Act 1953. Particular relevant requirements are noted below:

- (a) Some animals in the region such as wild deer, wild goats and wild pigs are defined as wild animals under the Wild Animal Control Act 1977. This Act controls the hunting and release of wild animals and regulates deer farming and the operation of safari parks. It also gives local authorities the power to destroy wild animals under operational plans that have the Minister of Conservation's consent. Council will present the RPMP Operational Plan for the

management of wild goats to the Minister for consideration prior to commencing work on feral goats.

- (b) The Wildlife Act 1953 controls and protects wildlife not subject to the Wild Animal Control Act 1977. It defines wildlife which are not protected (e.g. feral cattle, feral cats, feral dogs), and which are to be game (e.g. mallard ducks, black swan), partially protected or are injurious. It authorises certain unprotected wildlife to be kept and bred in captivity even if they are declared pests under a pest management plan (e.g. ferret). The Director-General of Conservation must approve any plans to control injurious birds (e.g. rooks). If Council intends to manage any injurious birds it will submit its operation plans to the Director General of Conservation for approval.

### 2.2.5 Other legislation

Other legislation (such as the Reserves Act 1977 and the Conservation Act 1987) contains provisions that support pest management within a specific context. As set out in the Council's pest management strategic direction (see pages 1-2), Council will participate in collective approaches across pest management agencies.

While perch and tench are defined as pests under this RPMP it is acknowledged that they are also sports fish under Part 5A of the Conservation Act 1987. Fish and Game are responsible for managing sports fish under the Conservation Act 1987 and the associated Freshwater Fisheries Regulations 1983. The taking or killing of any sports fish is managed through Angler's Notices developed by Fish and Game annually under this legislation, or by special licence issued by Fish and Game under section 4A of the Freshwater Fisheries Regulations 1983.

Council will engage with and seek to work in collaboration with Eastern Fish and Game to manage any perch or tench in the Bay of Plenty that are present due to any release that has not been legally authorised under either section 26ZM of the Conservation Act 1987 or Regulation 62 of the Freshwater Fisheries Regulations 1983.

As iwi settlements progress and Acts are passed by central Government, there may be implications for agencies involved in pest management in the Bay of Plenty region. For example, the control and management of aquatic plant pests in the Rotorua Te Arawa Lakes is primarily the responsibility of Land Information New Zealand (LINZ), on behalf of the Crown, as a result of the Deed of Settlement of the Te Arawa Lakes Historical Claims and Remaining Annuity Issues.

## 2.3 Relationship with other pest management plans/Hononga ki ētahi atu mahere patu kīrearea

### ***Biosecurity 2025 Direction Statement***

In November 2016 the Government outlined its vision for biosecurity management in New Zealand through the release of the Biosecurity 2025 Direction Statement. This outlines five strategic directions necessary to strengthen the parts of the national biosecurity system that are working well, to drive change where it is needed, and to harness opportunities to work more effectively:

- 1 "A biosecurity team of 4.7 million." A collective effort across the country: every New Zealander becomes a biosecurity risk manager and every business manages its own biosecurity risks.
- 2 "A toolbox for tomorrow." Harnessing science and technology to transform the way we do biosecurity.
- 3 "Smart, free-flowing information." Tapping into the wealth of data available, building intelligence and using powerful data analysis to underpin risk management.
- 4 "Effective leadership and governance." System-wide leadership and inclusive governance arrangements supporting all system participants in their roles.
- 5 "Tomorrow's skills and assets." A capable and sustainable workforce and world-class infrastructure providing the foundation for an effective system.

The Council's pest management strategic direction and pest management programmes in this RPMP align with the above directions, emphasising the shared responsibilities for pest

management. The preparation and implementation of this RPMP is core to taking regional leadership, combined with other pest management related programmes undertaken by the Council.

A RPMP must not be inconsistent with any:

- National pest management plan (NPMP) or RPMP that is focused on the same organism;
- Pathway management plan; or
- Regulation.

At the time of writing this RPMP\*, several NPMPs in New Zealand are in operation:

- NPMP for Bovine Tuberculosis (which is given legal effect by the Biosecurity (National Bovine Tuberculosis Pest Management Plan) Order 1998,
- NPMP for American foulbreed disease, and
- National Psu-V Pest Management Plan, developed in 2013 by Kiwifruit Vine Health, to ensure the entire industry worked together to overcome the impacts of Psu-V.

As far as Council understands, this RPMP is not inconsistent with any of these NPMPs.

\*Since the RPMP became operative, a National Pest Management Plan (NPMP) for the protection of kauri came into force (2 August 2022). The NPMP sets out mechanisms which will be used to increase protection for kauri, as well as ten new rules/regulations to help protect kauri from the PA pathogen.

The Bay of Plenty Regional Council shares a boundary with Gisborne District Council, Hawkes Bay Regional Council and Waikato Regional Council. It is in the interests of efficient and effective pest management that the pest management objectives between neighbouring councils are not inconsistent with each other. In developing this RPMP, Council has given regard to the aims and objectives of the pest management strategies of these neighbouring councils.

Council is currently working with other councils on initiatives to manage specific pests (for example, marine pests, wallabies, goats and wilding conifers). Council is also aware of, and has given regard to, the control of unwanted organisms that are under the auspices of central government agencies.

The Bay of Plenty Regional Council, Waikato Regional Council, Northland Regional Council, Auckland Council and Biosecurity New Zealand are jointly working together to develop an Inter-Regional Marine Pathway Management Plan (IRMPMP). The IRMPMP is currently in the development phase. This RPMP is consistent with the key deliverables and outcomes of the IRMPMP.

Council considers this RPMP is not inconsistent with the management intent of the Freshwater Fisheries Regulations 1983 in the Bay of Plenty region with regards to the management of perch, tench and rudd.

## 2.4 Relationship with Māori/Ngā hononga me te Māori

Ko tētahi kaupapa whāiti o te RPMP i raro i te Ture he tiaki i te hononga o te Māori ki ōna whenua tupu, me ōna wai, wāhi, wāhi tapu, me ngā taonga, ā, me te tiaki i aua āhuatanga mai i te pānga o ngā kīrearea. He mea nui te whai wāhi atu o te Māori ki ngā mahi haumarū-koiōra i raro i tōna mana kaitiakitanga. He nui tonu ngā mahi patu kīrearea a te Māori mō te āhuatanga ki ō rātau pānga ōhanga rāngai matua, ka mutu hei ariki whenua, hei kainoho hoki.

E herea ana te Kaunihera e te LGA ki te whakamana me te whakaute i ngā kawenga a te Karauna i raro i te Tiriti o Waitangi. E herea ana hoki ngā kaunihera ki te whakaū haere tonu me te whakapai ake i ngā whai wāhitanga o te Māori ki te tautoko i ngā tukanga whakatau tikanga. Kei roto i tēnei ko te whiriwhiri i ngā āhuatanga e taea ai e te Māori te tautoko. I whakatutukihia ēnei kawenga me ngā whakaritenga i a mātau e whakariterite ana i tēnei mahere, ā, ka haere tonu i muri i te whakamanatanga.



I tahuri te Kaunihera ki te rapu whakaaro mai i te Māori i roto i te whakairotanga o tēnei RPMP.

I ōrite te puta mai i roto i ēnei whakaaro i kohikohia, ā, me Ngā Mahere Whakahaerenga ā-lwi ko ngā pānga mātau o te patu kīrearea mō ngā iwi:

- He mea nui te patu kīrearea whitake hei tiaki i ngā uara Māori me ngā wāhi me mātua manaaki.
- Kei te hiahia ngā iwi ki te whakauru atu ki ngā whakahaere patu kīrearea, tae atu ki ngā whakamōhiotanga tōtika o ngā mōrea kīrearea me ngā mahi patu kīrearea.
- Me whai whakaaro anō ki ngā raruraru kīrearea mauroa ina whakarite ana i te patu kīrearea.
- Te tautoko i te kaupapa aukati i te ara kuhu mai, otirā mō ngā warapi (me ētahi atu kīrearea) e nui nei te tūpono mōrea ka urutomo atu ki ngā wāhi whakahirahira e tiakina ana.
- Kei reira anō te huarahi ki te whakakotahi i ngā mahi kaingākau me ngā mahi patu kīrearea (hei tauira, te aruaru).
- Te tautoko i ngā kaupapa patu kīrearea i runga i ngā whenua Māori.
- Kia nui ake ngā mahi patu kīrearea e pai ana mō te taiao (hei tauira, kua e ruia mai i te rangi).
- He huarahi kei reira mō ngā iwi ki te whakarato i ngā ratonga patu kīrearea.

Ko te aronga rautaki e rārangi ana i te wāhanga xx ka hāpai i te whakawhitiwhititanga me te hunga Māori whai pānga i te taumata rautaki, mahi hoki o te whakatinanatanga o te mahere.

One specific purpose of a RPMP under the Biosecurity Act 1993 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 during the development of this RPMP and will continue after it takes effect.

Council actively sought feedback from Māori through the development of this RPMP.

Echoed through feedback received and Iwi Management Plans are some insightful implications of pest management for iwi:

- Effective pest management is essential to protecting Māori values and high value conservation areas.
- Iwi want to be involved in pest management including appropriate notification of pest threats and pest control operations.
- Legacy pest issues should be acknowledged when requiring pest management.
- Support for the pathway management approach, particularly in respect of the threat of wallabies (and other pests) where they are at risk of invading high value conservation areas.
- Potential to combine recreation and mahinga kai interests with pest control (e.g. hunting).
- Support for pest control initiatives on Māori land.
- Environmentally friendly pest management operations.
- Potential for iwi to provide pest management services.

The pest management strategic direction (see pages 1-2) embraces engagement with Māori at both the strategic and operational level of plan implementation.



## 2.5 Relationship with the National Policy Direction/Hononga ki te aronga kaupapahere ā-mōtū

In September 2015, the National Policy Direction for Pest Management came into force.

The stated purpose of the National Policy Direction for Pest Management 2015 is to ensure that activities under Part 5 of the Biosecurity Act 1993 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.

As required by law, Council needed to determine consistency between the current RPMP and the National Policy Direction for Pest Management 2015 and if there were any inconsistencies how they would be resolved. Through this process, Council determined that the Regional Pest Management Plan for the Bay of Plenty 2011-2016 was inconsistent with the National Policy Direction for Pest Management 2015 and therefore needed to be revoked and replaced by a new RPMP (which is this RPMP).

The following table sets out the National Policy Direction for Pest Management 2015 (NPD) requirements and the steps taken to comply with them.

NPD requirements	Steps taken to comply
<b>Programme is described</b>	The types of programmes in this RPMP comply with clause 5 of the NPD.
<b>Objectives are set</b>	The objectives in this RPMP comply with Clause 6 of the NPD.
<b>Benefits and costs are analysed</b>	The cost and benefit assessment is set out in <i>Regional Pest Management Plan for the Bay of Plenty region: Meeting the Biosecurity Act 1993 requirements</i> .
<b>Funding rationale is noted</b>	The funding rationale described in section 9 of the RPMP has been developed in line with clause 7 of the NPD.

### **3 Responsibilities and obligations/Kawenga me ngā herenga**

#### **3.1 The management agency/Te tari whakahaere**

Bay of Plenty Regional Council is the management agency responsible for implementing this RPMP. As such, Bay of Plenty Regional Council is satisfied that it meets the requirements of s100 of the Biosecurity Act 1993 in that it:

- (a) is accountable to the plan funders, including Crown agencies, through the requirements of the LGA,
- (b) is acceptable to the funders and those persons subject to the RPMP's management provision because it implemented previous Regional Pest Management Strategies/Plans, and
- (c) has the capacity, competency and expertise to implement the RPMP. Bay of Plenty Regional Council will:
  - (i) within three months of the Plan being made and becoming operative, prepare an operational plan for implementing the RPMP,
  - (ii) review the operational plan each year, and, if it thinks fit, amend it,
  - (iii) prepare a report on the operational plan and its implementation no later than five months after the end of each financial year, and
  - (iv) make copies of the operational plan and the report on its implementation available to the public.

Future operational plans will set out how Bay of Plenty Regional Council will undertake its management responsibilities to implement the RPMP.

#### **3.2 Compensation and disposal of receipts/Te tuku paremata**

The RPMP does not provide for compensation to be paid to any persons meeting their obligations under its implementation. However, should the disposal of a pest or associated organism provide any net proceeds, a person will be paid disbursement in the manner noted under section 100I of the Biosecurity Act 1993.

#### **3.3 Responsibilities of landowners and/or occupiers/Ngā kawenga a ngā ariki whenua, kainoho hoki/rānei**

Pest management is an individual's responsibility in the first instance because generally occupiers contribute to the pest problem and in turn benefit from the control of pests. Occupiers also have a stewardship responsibility to manage the pests on their land for the wider benefits of the natural and social environment.

The term 'occupier' has a wide definition under the Biosecurity Act 1993 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 Biosecurity Act 1993, '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 rule requirements, they may face legal action. They must never sell, propagate, distribute or keep pests.

A landowner and/or occupier cannot stop an authorised person from entering a place<sup>1</sup>, at any reasonable time, to:

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

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

This RPMP treats all private land equitably and emphasises the responsibilities and obligations of all land occupiers, including Māori. Council acknowledges the complex and variable relationships of Māori land ownership 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 landowners and/or occupiers are unknown, the Māori Land Court or the Registrar of Companies may help to identify and communicate with them.

### 3.4 Crown agencies and entities/Ngā tari Karauna

Crown agencies and entities in the Bay of Plenty region (including Department of Conservation (DOC), Waka Kotahi NZ Transport Agency, LINZ and KiwiRail) are responsible for pest management on Crown land, road and rail corridors. LINZ is also responsible for restoration of the Rotorua Lakes.

The way Council works with these agencies is set out in the Council's pest management strategic direction (see pages 1-2). Although there are no good neighbour rules in this RPMP, the Council has signed memoranda with DOC and Waka Kotahi NZ Transport Agency to confirm how pests will be managed on and in places that these organisations are responsible for. Provision has been made for all occupiers to work with Council through the written agreement provisions in the rules of this RPMP.

#### ***Department of Conservation***

The Department of Conservation administers approximately 267,096 ha, 22% of the total land area (excluding ocean area) in the Bay of Plenty region. It is an occupier for public conservation land under the Reserves Act 1977 and the Conservation Act 1987. The Department of Conservation has particular interest and expertise in the area of pest threats to indigenous biodiversity values.

#### ***Waka Kotahi NZ Transport Agency***

Waka Kotahi NZ Transport Agency is the roading authority for state highways. Waka Kotahi NZ Transport Agency manages approximately 2,455 ha of road and roadside verges in the Bay of Plenty region.

#### ***Land Information New Zealand***

Land Information New Zealand administers vacant and non-rateable land. Land Information New Zealand also has responsibility for alienated Crown land in the region, surplus railway land and restoration of the Rotorua Lakes under the Deed of Settlement. Land Information New Zealand has confirmed its intent to manage pests within the Bay of Plenty region.

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<sup>1</sup> This does not include a dwelling house, marae or building associated with a marae unless specified conditions are complied with (section 109(2))

## ***KiwiRail***

KiwiRail is a state owned enterprise and is responsible for managing rail corridors within the region.

### **3.5 Territorial authorities/Ngā mana Kaunihera**

There are seven territorial authorities, wholly or partly, within the Bay of Plenty region. They are:

- Kawerau District Council
- Opotiki District Council
- Rotorua Lakes Council
- Taupo District Council
- Tauranga City Council
- Western Bay of Plenty District Council
- Whakatane District Council

Territorial authorities are bound by the RPMP and are required to control pests on land that they occupy in accordance with the rules of this RPMP. Each territorial authority must meet the costs of complying with this RPMP.

### **3.6 Roothing authorities/Ngā whenua rāhui ā-rori**

Road reserves include the land on which the formed road lies and the verge area that extends to adjacent property boundaries. The Biosecurity Act 1993 allows the option of making either roading authorities (Waka Kotahi NZ Transport Agency and district/city councils) or adjoining land occupiers responsible for pest management in road reserves (see s6(1) of the Biosecurity Act 1993).

As such, roading authorities are responsible for controlling pests within their road reserve boundaries. Where the road reserve boundary is unknown this will be taken as 10 m from the road centreline. Except where a rule prevents occupier control, adjacent landowners are responsible for controlling pests on road reserves in the following situations:

- unformed paper roads that they occupy,
- where fences encroach onto a surveyed road reserve, the occupier adjoining the road reserve shall be responsible for pests within that fenced area, and
- where adjacent occupiers do not support the use of toxins to control pests (e.g. organic farming practices), the occupier adjoining the road reserve shall be responsible for pest control in the road reserve as well.

# Pest management/Te patu kīrearea

## 4 Organisms classified as pests/Ngā rauropi kua kīia he kīrearea

The organisms listed in Table 1 are classified as pests.

It should be noted that under s52 and s53 of the Biosecurity Act 1993 any person is banned 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) of the Act.

Table 1 Organisms classified as pests.

Common name	Scientific name	Programme	Page*	Map**
<b>Plant kingdom</b>				
<b>African club moss</b>	<i>Selaginella kraussiana</i>	Sustained control	79	
<b>African feather grass</b>	<i>Cenchrus macrourus</i>	Progressive containment	58	
<b>Alligator weed</b>	<i>Alternanthera</i>	Exclusion	33	1
	<i>philoxeroides</i>	Eradication	46	
		Progressive containment	59	
<b>Apple of sodom</b>	<i>Solanum linnaeanum</i>	Progressive containment	59	
<b>Asiatic knotweed</b>	<i>Fallopia japonica</i>	Progressive containment	60	
<b>Banana passionfruit</b>	<i>Passiflora tarminiana,</i>	Sustained control	79	
	<i>Passiflora tripartita</i>			
<b>Bat-winged passionflower</b>	<i>Passiflora apetela</i>	Exclusion	34	
<b>Blackberry</b>	<i>Rubus fruticosus agg.</i>	Sustained control	80	
<b>Boneseed</b>	<i>Chrysanthemoides monilifera</i>	Progressive containment	60	
<b>Cape ivy</b>	<i>Senecio angulatus</i>	Sustained control	80	
<b>Cathedral Bells</b>	<i>Cobaea scandens</i>	Sustained control	81	
<b>Chilean flame creeper</b>	<i>Tropaeolum speciosum</i>	Exclusion	35	
<b>Chilean needle grass</b>	<i>Nassella neesiana</i>	Exclusion	36	
<b>Chilean rhubarb</b>	<i>Gunnera tinctoria</i>	Sustained control	81	
<b>Chinese windmill palm</b>	<i>Trachycarpus fortunei</i>	Sustained control	82	
<b>Chocolate vine</b>	<i>Akebia quinata</i>	Sustained control	82	
<b>Climbing asparagus</b>	<i>Asparagus scandens</i>	Sustained control	83	

Common name	Scientific name	Programme	Page*	Map**
<b>Plant kingdom</b>				
<b>Climbing spindle berry</b>	<i>Celastrus orbiculatus</i>	Progressive containment	61	13
		Sustained control	83	
<b>Coast tea tree</b>	<i>Leptospermum laevigatum</i>	Eradication	47	
<b>Coastal banksia</b>	<i>Banksia integrifolia</i>	Sustained control	84	
<b>Cotoneaster</b>	<i>Cotoneaster glaucophyllus</i>	Sustained control	84	
<b>Creeping gloxinia</b>	<i>Lophospermum erubescens</i>	Eradication	47	
<b>Darwin's barberry</b>	<i>Berberis darwinii</i>	Exclusion	37	3
		Progressive containment	63	
<b>Egeria</b>	<i>Egeria densa</i>	Exclusion	38	4
		Progressive containment	64	
<b>Elodea</b>	<i>Elodea canadensis</i>	Exclusion	39	5
		Sustained control	85	
<b>English Ivy</b>	<i>Hedera Helix</i>	Sustained control	85	
<b>Field horsetail</b>	<i>Equisetum arvense</i>	Exclusion	39	
<b>Gorse</b>	<i>Ulex europaeus</i>	Sustained control	86	
<b>Himalayan fairy grass</b>	<i>Miscanthus nepalensis</i>	Sustained control	86	
<b>Hornwort</b>	<i>Ceratophyllum demersum</i>	Exclusion	40	6
		Eradication	48	
		Progressive containment	65	
<b>Horse nettle</b>	<i>Solanum carolinense</i>	Eradication	49	
<b>Italian buckthorn</b>	<i>Rhamnus alaternus</i>	Exclusion	40	7
		Progressive containment	65	
<b>Kauri dieback disease</b>	<i>Phytophthora agathidicida (PA)</i>	Exclusion	41	
<b>Kudzu vine</b>	<i>Pueraria lobata</i>	Eradication	50	
<b>Lagarosiphon</b>	<i>Lagarosiphon major</i>	Exclusion	42	8
		Progressive containment	66	
<b>Lantana</b>	<i>Lantana camara</i>	Eradication	50	10
		Progressive containment	66	
		Sustained control	87	
<b>Male fern</b>	<i>Dryopteris filix-mas</i>	Sustained control	87	



Common name	Scientific name	Programme	Page*	Map**
<b>Plant kingdom</b>				
<b>Marshwort</b>	<i>Nymphoides geminata</i>	Exclusion	42	
<b>Mile-a-minute</b>	<i>Dipogon lignosus</i>	Sustained control	88	
<b>Mistflower</b>	<i>Ageratina riparia</i>	Sustained control	88	
<b>Monkey apple</b>	<i>Syzygium smithii</i>	Sustained control	89	
<b>Moth plant</b>	<i>Araujia hortorum</i>	Sustained control	89	
<b>Nassella tussock</b>	<i>Nassella trichotoma</i>	Eradication	51	
<b>Noogoora bur</b>	<i>Xanthium strumarium</i>	Eradication	51	
<b>Old man's beard</b>	<i>Clematis vitalba</i>	Progressive containment	67	
		Sustained control	90	14
<b>Palm grass</b>	<i>Setaria palmifolia</i>	Sustained control	91	
<b>Periwinkle</b>	<i>Vinca major</i>	Sustained control	91	
<b>Phoenix palm (See Self-propagated Phoenix Palm)</b>				
<b>Purple loosestrife</b>	<i>Lythrum salicaria</i>	Eradication	52	
<b>Ragwort</b>	<i>Jacobaea vulgaris</i>	Sustained control	92	
<b>Reed sweet grass</b>	<i>Glyceria maxima</i>	Sustained control	92	
<b>Rough horsetail</b>	<i>Equisetum hyemale</i>	Sustained control	93	
<b>Royal fern</b>	<i>Osmunda regalis</i>	Sustained control	93	
<b>Sagittaria</b>	<i>Sagittaria platyphylla/Sagittaria montevidensis</i>	Eradication	53	
<b>Self-propagated Phoenix Palm</b>	<i>Phoenix canariensis</i>	Sustained control	94	
<b>Senegal tea</b>	<i>Gymnocoronis spilanthoides</i>	Eradication	54	
<b>Spartina</b>	<i>Spartina spp.</i>	Eradication	54	
<b>Spiny emex</b>	<i>Emex australis</i>	Progressive containment	68	
<b>Stout bamboo grass</b>	<i>Austrostipa ramosissima</i>	Eradication	55	
<b>Strawberry dogwood</b>	<i>Cornus capitata</i>	Sustained control	94	
<b>Sydney golden wattle</b>	<i>Acacia longifolia</i>	Sustained control	95	
<b>Taiwan cherry</b>	<i>Prunus campanulata</i>	Sustained control	95	
<b>Variiegated thistle</b>	<i>Silybum marianum</i>	Progressive containment	69	
<b>Water poppy</b>	<i>Hydrocleys nymphoides</i>	Eradication	55	
<b>White edged nightshade</b>	<i>Solanum marginatum</i>	Eradication	56	

Common name	Scientific name	Programme	Page*	Map**
<b>Plant kingdom</b>				
<b>Wild ginger</b>	<i>Hedychium gardnerianum</i> and <i>Hedychium flavescens</i>	Sustained control	96	
<b>Wild kiwifruit</b>	<i>Actinidia spp.</i>	Progressive containment	70	
<b>Wilding conifers</b>		Progressive containment		
<b>Lodgepole pine</b>	<i>Pinus contorta</i>		73	
<b>Scots pine</b>	<i>Pinus sylvestris</i>		72	
<b>Dwarf mountain pine</b>	<i>Pinus mugo</i>		71	
<b>Mountain pine</b>	<i>Pinus uncinata</i>		71	
<b>European larch</b>	<i>Larix decidua</i>		72	
		Sustained control		
<b>Douglas fir</b>	<i>Pseudotsuga menziesii</i>		98	
<b>Bishops pine</b>	<i>Pinus muricata</i>		97	
<b>Maritime pine</b>	<i>Pinus pinaster</i>		98	
<b>Ponderosa pine</b>	<i>Pinus ponderosa</i>		99	
<b>Corsican pine</b>	<i>Pinus nigra</i>		97	
<b>Radiata pine</b>	<i>Pinus radiata</i>		99	
<b>Woolly nightshade</b>	<i>Solanum mauritianum</i>	Progressive containment	73	12
		Sustained control	100	
<b>Yellow flag iris</b>	<i>Iris pseudacorus</i>	Progressive containment	71	

Common name	Scientific name	Programme	Page*	Map**
<b>Animal kingdom</b>				
<b>Asian paddle crab</b>	<i>Charybdis japonica</i>	Progressive containment	60	
<b>Australian droplet tunicate</b>	<i>Eudistoma elongatum</i>	Exclusion	34	
<b>Catfish (Brown bullhead)</b>	<i>Ameiurus nebulosus</i>	Exclusion	35	2
		Progressive containment	61	
<b>Clubbed tunicate</b>	<i>Styela clava</i>	Progressive containment	62	
<b>Feral goat</b>	<i>Capra hircus</i>	Eradication	48	9
		Progressive containment	64	
<b>Koi carp</b>	<i>Cyprinus rubrofucus</i>	Exclusion	41	15
		Eradication	49	
<b>Mediterranean fanworm</b>	<i>Sabella spallanzanii</i>	Progressive containment	67	
<b>Perch</b>	<i>Perca fluviatilis</i>	Exclusion	43	16
		Eradication	52	
<b>Pyura</b>	<i>Pyuridae - Pyura praeputialis</i>	Exclusion	44	
<b>Rooks</b>	<i>Corvus frugilegus</i>	Eradication	53	
<b>Rudd</b>	<i>Scardinius erythrophthalmus</i>	Exclusion	44	17
		Progressive containment	68	
<b>Tench</b>	<i>Tinca tinca</i>	Exclusion	43	18
		Progressive containment	69	
<b>Wallaby</b>	<i>Macropus eugenii</i>	Eradication	55	11
		Progressive containment	70	
*Page references are to pest descriptions. The management regime and rules that apply to these pests are grouped according to their pest programme.				
**Maps are only provided for pests that have split programme classifications. For all other pests, Figure 1, page 7 shows the regional boundaries for which provisions in this RPMP apply.				

### **Unwanted organisms**

In addition to the pests listed in Table 1, the release, sale, breeding, multiplying and propagation of any Unwanted Organism (UWO) (as recognised and registered by a Chief Technical Officer employed under the State Sector Act 1988) is controlled under the Biosecurity Act 1993. The UWO register maintained by the Ministry for Primary Industries contains a long list of plants and animals including insects and other invertebrates, as well as diseases - not all of which appear in this RPMP. The Bay of Plenty Regional Council will support agencies that have clear pest management leads (as set out in the Council's pest management strategic direction on pages 1-2).

Newly imported organisms are regulated under the Hazardous Substances and New Organisms Act 1996 by the Environmental Protection Authority.

While the Biosecurity Act 1993 has requirements for pests that are included in programmes and managed under an RPMP, there are many other organisms that Council and the community consider as pests.

If these organisms have not been included in the RPMP it may be because those pests are managed by another agency or they are now so widely established that regional intervention (e.g. requiring pest removal) would not be practicable or affordable.

Council considers these other organisms to be part of the wider biosecurity framework in the region. The other organisms have been termed Advisory pests and are listed in the RPMP in Appendix 1. Council will continue to provide management advice relating to Advisory pests as part of its pest management strategic direction.

Rules in regional and district plans and provisions in land management agreements that refer to pests specified or listed in the RPMP apply to Advisory pests included in Appendix 1 as well as other pests directly managed under this RPMP.

### ***Unlisted organisms***

Bay of Plenty Regional Council's management programme is guided by, but not limited to, the pests that have established viable or persistent populations in the region, at the time of writing.

The Biosecurity Act 1993 allows regional councils to carry out small-scale eradication or control programmes for unwanted organisms, which are not already named in their RPMP, by developing a Small Scale Management Programme (SSMP). A SSMP allows Council to use certain powers under the Biosecurity Act 1993 to assist with the management of a pest.

SSMPs are the primary response tool available to regional councils for managing incursions of unwanted organisms not classified in the RPMP. Powers to manage the unwanted organism can only be activated by having a formalised programme in place.

Before Council can declare a SSMP, the Biosecurity Act 1993 requires it must be satisfied that:

- The pest could cause adverse effects unless early action is taken to control it.
- The pest can be eradicated or controlled within three years.
- The SSMP is not inconsistent with and is developed in accordance with the National Policy Direction for Pest Management 2015.
- The costs of the programme are likely to cost less than \$500,000.
- Implementing the programme is unlikely to cause significant monetary loss to any person (other than a person who has contributed to spreading the pest by not complying with biosecurity law).

## 5 Pest management framework/Te pou tarāwaho patu kīrearea

### 5.1 Objectives/Ngā whāinga

Objectives have been set for each pest or class of pests. As required by the National Policy Direction for Pest Management 2015, the objectives include:

- the particular adverse effect/s (s54(a) of the Biosecurity Act 1993) 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).

The objectives for each pest or class of pest are contained in section 6 as part of the management regime for each pest or class of pests.

#### 5.1.1 Adverse effects to be managed

The Biosecurity Act 1993 requires that Council be satisfied that the pests are capable of causing at some time an adverse effect on at least one of a number of values including economic wellbeing, the environment, human health, enjoyment of the natural environment, or the relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu, and taonga.

Council has grouped the values into three broad categories:

***Production pests*** – those pests that affect:

- the value of economic wellbeing, or
- animal welfare.

***Environmental pests*** – those pests that affect:

- the viability of threatened species,
- indigenous plants or animals,
- the sustainability of natural ecosystems, ecological processes and biodiversity, or
- soil resources and water quality.

***Public pests*** – those pests that affect:

- human health,
- social wellbeing,
- cultural wellbeing,
- the enjoyment, access and recreational value of the natural environment, or
- the relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu, and taonga.

These effects are reported in more detail for each pest under the different programmes.

## 5.2 Pest management programmes/Ngā kaupapa patu kīrearea

One or more pest management programme will be used to control pests and any other organisms covered by this RPMP. The types of programme are defined by the National Policy Direction for Pest Management 2015 and reflect outcomes in keeping with:

- the extent of the infestation, and
- whether it is possible to achieve the desired control levels for the pests.

The intermediate outcomes for the National Policy Direction for Pest Management 2015 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 overtime.
- 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.

The National Policy Direction for Pest Management 2015 also identifies “Protecting Values in Places” as an intermediate outcome.

Bay of Plenty Regional Council has opted to use non-regulatory approaches to protecting specific values in specific places and so site-led rules do not feature in this RPMP. The non-regulatory site-led approach specifically for protecting biodiversity is supported through the Council’s pest management strategic direction (see pages 1-2).

## 5.3 Principal measures to manage pests/Ngā whakaritenga matua hei patu kīrearea

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 and/or occupiers or other persons may be required to act where RPMP rules dictate:

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

## **2 Council inspection**

Inspection by Council may include staff or contractors:

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

## **3 Service delivery**

Council may deliver the service:

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

## **4 Advocacy and education**

Council may:

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

## **5 Additional principal measure: Partnerships**

Council may develop a Memorandum of Understanding with agencies (including Crown agencies) with pest management responsibilities to establish agreed levels of services to control pests, or to defer enforcement actions in this RPMP in preference for pragmatic pest management that contributes to achieving RPMP objectives.

## 5.4 Rules/Ngā ture

Rules play an integral role in securing many of the pest management outcomes sought by the 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.

Section 73 of the Biosecurity Act 1993 prescribes the matters that may be addressed by rules, and the need to:

- (i) specify if the rule is to be designated as a 'Good Neighbour Rule',
- (ii) specify if breaching the rule creates an offence under the Act,
- (iii) specify if an exemption to the rule, or any part of it, is allowable or not, and
- (iv) explain the purpose of the rule.

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

Under this RPMP:

- no rules are designated as Good Neighbour Rules,
- a breach of any rules creates an offence under section 154N(19) of the Biosecurity Act 1993. Exemptions may apply to any or all of the rules contained within this RPMP on written application to Bay of Plenty Regional Council. Bay of Plenty Regional 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. Exemptions may or may not be subject to conditions, each rule has an accompanying explanation.




## 6 Pest descriptions/Ngā whakaahuatanga o ngā kīrearea

The accompanying Regional Pest Management Plan for the Bay of Plenty region: Meeting the Biosecurity Act requirements report provides detail for each pest supporting their inclusion in the RPMP.

### 6.1 Exclusion programme/Te kaupapa aukatinga

The Exclusion programme covers species that Bay of Plenty Regional Council has opted to be the lead agency or partner for managing new incursions into the region. At the time of writing this RPMP, these pests are not known to be present in our region or parts of the region.

Table 2 Exclusion programme pests.

Exclusion programme pests					
Pest	Pest description	Adverse effects to be managed			
<p><b>Alligator weed</b> <i>Alternanthera philoxeroides</i></p>  <p>Map 1 shows the area of the region that Alligator weed is to be managed as an exclusion pest. Alligator weed is also managed as an Eradication and progressive containment pest in other parts of the region.</p>	<p>Marginal aquatic perennial native to Brazil which can also grow in pastures and crops. First discovered in New Zealand in 1906, it has long, creeping, hollow, green or red tinged stems and waxy green leaves. The flowers are white and clover-like.</p> <p><b>Risk areas:</b> Moist banks, swampy places, damp pasture, cropping land, drains, ponds, lakes, rivers and streams.</p>	<p>As a terrestrial weed alligator weed grows rapidly and can out-compete crops and pastures. Alligator weed will take up heavy metals from the soil and is known to be toxic to some livestock. Aquatic alligator weed can rapidly spread in streams and drainage canals, forming floating mats that trap sediments, increasing risk of flooding. In natural wetland areas alligator weed is a threat to native flora and fauna and is extremely difficult to eradicate once established in such a habitat.</p> <table border="1" data-bbox="1442 995 2078 1056"> <tr> <td>Production</td> <td>Environmental</td> <td>Public</td> </tr> </table>	Production	Environmental	Public
Production	Environmental	Public			

## Exclusion programme pests

### Australian droplet tunicate

*Eudistoma elongatum*



A sea squirt that forms long cylindrical tubes. Cream coloured with light brown specks, specks becoming orange when reproductive. Habitat is intertidal and subtidal. Found attached to hard structures in sheltered bays.

Australian droplet tunicate have a rapid and dense growth that smothers native organisms.

Production

Environmental

Public

### Bat-winged passionflower

*Passiflora apetela*



A shade tolerant vine. It has leaves with two large lobes (that resemble a bat wing). Some have pale green stripes along the midribs. It has small yellow/green coloured flowers and produces small black berries about the size of a small grape. The berries are attractive to birds.

**Risk areas:** regenerating native forest and scrub, home gardens, hedges and fence lines.

Bat-winged passionflower is a vigorous grower and abundant fruiter. It spreads easily and quickly smothers native plants.

Production

Environmental

Public

## Exclusion programme pests

### Catfish (Brown bullhead catfish)

*Ameiurus nebulosus*



Map 2 shows the area of the region that catfish are to be managed as an exclusion pest. Catfish are also managed as a progressive containment pest in other parts of the region.

The North American brown bullhead catfish have been present in New Zealand since the late 1800s and for many years, were rarely encountered. They were first recorded in Lake Taupo in 1985. Accidental introductions via boat trailers and especially nets used for eeling is continuing to spread this species around New Zealand.

Dark brown to olive green with paler sides and bellies. In addition to the eight distinctive barbells around their mouth, catfish also have relatively small eyes and a smooth skin. The leading edge on their dorsal and pectoral fins has a sharp spine. Catfish are an extremely robust fish and can survive for long periods out of water. They commonly grow to 200 mm–300 mm in length.

**Risk areas:** Although adaptable, prefer slow and still freshwater.

Catfish will adversely impact freshwater ecosystems. They are carnivorous and use their barbells to probe for insects, crustaceans, molluscs and small fish. Freshwater crayfish/koura are a major prey species. They are highly tolerant of poor water quality and may contribute to water quality decline.

Production	Environmental	Public
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### Chilean flame creeper

*Tropaeolum speciosum*



Vigorous perennial vine with slender stems and blue-green five-fingered leaves. Coiling tendrils and long leaves die off over winter. Tubular scarlet flowers with five irregular petals in summer, followed by thin fleshy, deep blue berries in autumn.

**Risk areas:** Disturbed forest and shrubland.

Chilean flame creeper invades forest margins and disturbed sites, climbing high into tree canopies, suppressing growth and replacing native species by shading and smothering.

Production	Environmental	Public
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## Exclusion programme pests

### Chilean needle grass

*Nassella neesiana*



An erect, tussocky perennial grass that can grow up to 1 m in height. Primarily a production pest plant, affecting pastoral and arable farming, but capable of invading indigenous ecosystems

**Risk areas:** Dry, low fertility open areas, indigenous ecosystems.

Chilean needle grass seed attaches easily to stock, particularly sheep wool, and is able to dig through the pelt and muscle, downgrading pelts and meat as well as wool for export. The seed is also able to penetrate eyes of lambs causing blindness and sometimes even death.

Production

Environmental

Public

## Exclusion programme pests

### Darwin's barberry

*Berberis darwinii*



Map 3 shows the area of the region that Darwin's barberry is to be managed as an exclusion pest. Darwin's barberry is also managed as a progressive containment pest in other parts of the region.

Originally from Chile, the plant became established in New Zealand in 1946. A spiny shrub, 1 m-3 m tall, its leaves are shiny dark green and spiny (but smaller than holly) and the stems are tough, woody and hairy with five-pronged needle sharp spines.

It has drooping clusters of deep orange flowers (5 mm-7 mm in diameter) from July through to February, which develop into hanging groups of oval purple-black berries with a white bloom or coating.

The plant is spread mostly from birds and possums eating the berries but can also revegetate from root suckers.

**Risk areas:** Disturbed forest and bush margins, pasture, tussock land and wasteland.

Darwin's barberry is invasive in forests, riparian areas and in degraded pasture. It is considered a threat to forestry and native species and ecosystems. In the Waikato it is a real concern as without control it will move into farmland and areas of indigenous forest.

Production

Environmental

Public

## Exclusion programme pests

### Egeria

*Egeria densa*



Map 4 shows the area of the region that Egeria is to be managed as an exclusion pest. Egeria is also managed as a progressive containment pest in other parts of the region.

A bottom-rooted, vigorous aquatic perennial. One of the oxygen weeds, denser and broader than Elodea and Lagarosiphon, with distinctive white flowers produced at the water surface in summer.

**Risk areas:** Still waters of swamps, ponds and lakes.

Forms vast underwater 'meadows', shades out smaller native species, and prevents seedlings of native species establishing.

Production	Environmental	Public
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## Exclusion programme pests

### Elodea

*Elodea canadensis*



Map 5 shows the area of the region that Elodea is to be managed as an exclusion pest. Elodea is also managed as a sustained control pest in other parts of the region.

Wholly submerged, dark green, aquatic perennial. One of the oxygen weeds, often forming tall dense masses in freshwater to 10 m deep.

**Risk areas:** Ponds, lakes, drains and slow moving streams.

Can form deep underwater meadows, shading out smaller native species and prevents seedlings of native species establishing.

Production	Environmental	Public
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### Field horsetail

*Equisetum arvense*



A temperate northern hemisphere perennial plant preferring damp areas. It has differing sterile and fertile stems. Fertile stems are produced in early spring and are whitish to light brown, ending in a yellowish to brownish cone. Sterile stems start to grow after the fertile stems have wilted, and persist through summer until the first autumn frosts. Sterile stems are green, very rough to touch and resemble pine seedlings.

**Risk areas:** Bare damp land, pastures, river and stream sides, especially silty, sandy or gravelly sites.

Field horsetail is extremely hard to control once established. It reduces crop yields drastically and is toxic to horses, sheep and cattle, according to overseas reports. It forms dense stands in a wide range of damper habitats, blocking waterways and contributing to flooding and siltation.

Production	Environmental	Public
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## Exclusion programme pests

### Hornwort

*Ceratophyllum demersum*



Map 6 shows the area of the region that Hornwort is to be managed as an exclusion pest. Hornwort is also managed as a progressive containment and an eradication pest in other parts of the region.

Hornwort is currently considered New Zealand's worst submerged weed. The narrow, bright green leaves are finely divided. Modified leaves anchor the plant in bottom sediments up to 16 m deep.

**Risk areas:** Ponds, marshes and quiet streams.

Grows in a wide range of waterbodies with growth to deeper depths than other weed species. Hornwort does not set seed in New Zealand, but reproduces from broken-off fragments that are easily moved to new sites on boats, boat trailers, fishing gear.

Production

Environmental

Public

### Italian buckthorn

*Rhamnus alaternus*



Map 7 shows the area of the region that Italian buckthorn is to be managed as an exclusion pest. Italian buckthorn is also managed as a progressive containment pest in other parts of the region.

Native to the Mediterranean, an evergreen shrub up to 5 m tall. Young shoots are purplish, angled and hairy. Leaves (up to 6 cm long and 3 cm wide) are egg-shaped, leathery, glossy on top and may be toothed along the edges. Flowers (May to November) are green, 3 mm-4 mm in diameter, fragrant and have no petals. Fruit is dark red and glossy, turning black when ripe.

**Risk areas:** Coastal areas, cliffs, forest margins, open areas, all types of forest and gardens.

Italian buckthorn forms dense stands and prevents the establishment of native plant seedlings.

Production

Environmental

Public



## Exclusion programme pests

### Kauri dieback disease

*Phytophthora agathidicida* (PA)

Previously known as *Phytophthora taxon agathis* (PTA)



The pathogen can sense a kauri tree's roots and swim towards them using a tail-like flagella. Spread by soil and soil-water movement, through underground root-to-root contact, or human and animal vectors. Kauri dieback is also known as collar rot, which refers to the bleeding lesions at the bottom of the tree trunk. Cleaning footwear every time you enter or leave a forest area, avoiding kauri roots and keeping dogs on leads can help to slow the spread of this disease.

**Risk areas:** Any habitat where kauri are present.

Damages tissues that carry nutrients and water within the tree, eventually leading to starvation.

Production	Environmental	Public
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### Koi carp

*Cyprinus rubrofuscus*



Superficially resemble goldfish except that they grow to larger sizes (up to 10 kg and 75 cm long) and have two pairs of barbels, at the corner of their mouths.

Highly variable in colour, often accompanied with irregular blotching of black, red, gold, orange or pearly white.

**Risk areas:** Still waters in lakes, or backwaters in rivers.

Koi carp eat a wide range of food, including insects, fish eggs, juvenile fish of other species and a diverse range of plants and other organic matter. Koi carp cause habitat loss for plants, native fish, invertebrates and waterfowl.

They are highly tolerant of poor water quality and contribute to water quality decline.

Production	Environmental	Public
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Map 15 shows the area of the region that Koi carp are to be managed as an exclusion pest. Koi carp are also managed as an eradication pest in other parts of the region.

## Exclusion programme pests

### Lagarosiphon

*Lagarosiphon major*



Map 8 shows the area of the region that Lagarosiphon is to be managed as an exclusion pest. Lagarosiphon is also managed as a progressive containment pest in other parts of the region.

Wholly submerged, vigorous freshwater perennial up to 4 m tall, growing to depths of 6 m. One of the oxygen weeds.

**Risk areas:** Clear, still or slow-moving, low fertility freshwater ponds, lakes, streams and rivers.

Grows rapidly in waterbodies and smothers, excludes and replaces native vegetation. It also reduces the availability of oxygen to fish.

Production

Environmental

Public

### Marshwort

*Nymphoides geminata*



Water lily-like perennial aquatic with floating, bright green, heart-shaped leaves (up to 10 cm across) with pinkish undersides. Bright yellow flowers with fringed edges from November to April.

Grows rapidly and forms dense floating mats across waterways. Spread through fragmentation and creeping stems.

Production

Environmental

Public

## Exclusion programme pests

### Tench

*Tinca tinca*



Native to Europe, tench are a medium size, stocky fish, light to deep olive green in colour with brick orange eyes, small scales, rounded fins and a single pair of barbells. Tench are tolerant of both low oxygen and brackish environments. Widespread in Auckland and Northland, known populations also exist in Waikato, Wellington, Nelson, Canterbury and Oamaru. No known presence in the Bay of Plenty.

**Risk areas:** Slow or still water environments.

Tench are carnivorous bottom dwellers posing a risk to native crustaceans, molluscs and insect larvae.

Production	Environmental	Public
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Map 18 shows the area of the region that tench are to be managed as an exclusion pest. Tench are also managed as a progressive containment pest in other parts of the region.

### Perch

*Perca fluviatilis*



European, freshwater, deep-bodied fish between 1 kg-2 kg with two large, erect dorsal fins - the first having up to 17 sharp spines. Olive-green back with tiger stripes running down to a silver/white belly. Rear fins and the lower half of their tails are orange-red.

**Risk areas:** Slow or still water environments.

Perch are carnivorous, eating insect larvae and other fish including native fish.

Production	Environmental	Public
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Map 16 shows the area of the region that perch are to be managed as an exclusion pest. Perch are also managed as an eradication pest in other parts of the region.

## Exclusion programme pests

### Pyura

*Pyuridae - Pyura praeputialis*



South American sea squirt up to 60 mm long and 30 mm-50 mm in diameter. Body is tough and covered with sand and algal filaments, appearing green and sandy. When out of water, two large mounds indicate the location of the siphons. When submerged, siphons are visible and a bright reddish orange. Habitat is intertidal, attaching to hard platforms. Appears to prefer rocky coastlines.

The pyura sea squirt is an aggressive competitor for space and has the potential to significantly alter the structure and composition of intertidal communities.

Production	Environmental	Public
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### Rudd

*Scardinius erythrophthalmus*



Map 17 shows the area of the region that Rudd are to be managed as an exclusion pest. Rudd are also managed as a progressive containment pest in other parts of the region.

Rudd are a type of carp native to Europe, Asia and Russia. They were illegally imported to New Zealand in 1967.

A stocky, deep bodied fish appearing similar to goldfish with distinctive red fins and large, shiny scales that range from silver to pale orange in colour. Rudd will normally grow to about 25 cm in length and weigh about 500 g.

**Risk areas:** Slow or still water environments.

Rudd are often referred to as the 'possums of the waterways', adult rudd feed preferentially on native aquatic plants, while juvenile rudd feed voraciously on zooplankton (tiny aquatic animals). These feeding habits endanger native plant species, destroy indigenous habitat, remove food sources for native fish and invertebrate species, and potentially impact negatively on water quality by stirring up bottom sediments and muddying the water.

Production	Environmental	Public
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Table 3 Management regime for the exclusion programme

<b>Objective</b>	Over the duration of this RPMP, prevent the establishment of exclusion pests (as listed in Table 2) in the Bay of Plenty region to avoid adverse effects on production, environmental and public values.
<b>Principal measures</b>	
<i>Requirement to act</i>	Generic rules 6, 7 and 8 (see Table 12) will support the eradication of pests listed in Table 2 should an incursion occur. Although Council will lead management of exclusion programme pests, s122 (Power to give directions) of the Biosecurity Act 1993 requires that certain action may be required from occupiers to support a control operation. The authorised person shall determine which reasonable steps are most appropriate to remove the target pest(s), taking into account pest management cost to occupiers and their capability to undertake pest management action.
<i>Service delivery</i>	Council (including its agents as set out in the definition) will undertake control of these pests should they arrive in the region unless there is a management agency responsible for delivering a National Pest Management Plan.
<i>Council inspection</i>	Council will conduct surveillance in places it believes are vulnerable to invasion by the subject species.
<i>Advocacy and education</i>	Council will carry out programmes to increase public awareness of the exclusion programme and the threat posed by these pests. Council will continue to work with other agencies on pests of mutual interest or supporting other agencies who have a clear leadership role in managing particular pests. Council will support ongoing science to advance effective exclusion programmes.
<b>Monitoring</b>	
<i>Indicators</i>	Number of exclusion pests found in our region. Number of surveillance plans in place.
<i>Method of monitoring</i>	Inspection of places vulnerable to invasion.
<i>Frequency of monitoring</i>	Annually (or more frequently if a new incursion is detected).
<i>Frequency of reporting</i>	Annually (or more frequently if a new incursion is detected).
<b>Outcomes</b>	No pests in the exclusion programme are established in the region. Adverse effects to production, environmental and public health values from the presence of these pests are avoided.

## 6.2 Eradication programme/Te kaupapa whakakore

The eradication programme covers species which would be more effective or efficient for Council to be the lead agency or partner for eradicating the organisms from the region i.e. there is regional benefit from managing these pests that far out-weighs the benefits to the landowner. These pests are present in the region but are limited in their size or extent of infestation and their eradication is feasible and a cost-effective solution to protecting production, environmental and human health values into the future.

Table 4 Eradication programme pests.

Eradication programme pests					
Pests	Pest description	Adverse effects to be managed			
<p><b>Alligator weed</b> <i>Alternanthera philoxeroides</i></p>  <p>Map 1 shows the area of the region that Alligator weed is to be managed as an eradication pest. Alligator weed is also managed as an Exclusion and progressive containment pest in other parts of the region.</p>	<p>Marginal aquatic perennial native to Brazil which can also grow in pastures and crops. First discovered in New Zealand in 1906, it has long, creeping, hollow, green or red tinged stems and waxy green leaves.</p> <p>The flowers are white and clover-like.</p> <p><b>Risk areas:</b> Moist banks, swampy places, damp pasture, cropping land, drains, ponds, lakes, rivers and streams.</p>	<p>Alligator weed is a terrestrial weed that grows rapidly and can out-compete crops and pastures. Alligator weed will take up heavy metals from the soil and is known to be toxic to some livestock. Aquatic alligator weed can rapidly spread in streams and drainage canals, forming floating mats that trap sediments, increasing risk of flooding. In natural wetland areas alligator weed is a threat to native flora and fauna and is extremely difficult to eradicate once established in such a habitat.</p> <table border="1" data-bbox="1435 890 2051 954"> <tr> <td>Production</td> <td>Environmental</td> <td>Public</td> </tr> </table>	Production	Environmental	Public
Production	Environmental	Public			

## Eradication programme pests

### Coast tea tree

*Leptospermum laevigatum*



Australian woody shrub or small twisted tree up to 6 m tall. Older branches have thin brown bark, shed in long strips. Leaves are similar to, but larger than, New Zealand mānuka. Five petalled white flowers, similar to New Zealand mānuka and kanuka. Fruit is in hard, domed woody capsules with seven to ten cells. New Zealand mānuka capsules have five cells.

Currently present on Matakana Island.

**Risk areas:** Coastal areas, behind sand dunes.

Coast tea tree is very tolerant of salt spray. It displaces native vegetation on sand dunes and can eventually dominate them.

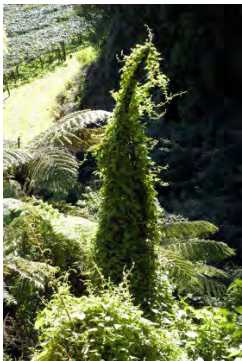
Production

Environmental

Public

### Creeping gloxinia

*Lophospermum erubescens*



Sprawling, perennial vine native to Mexico, climbing to over 4 m. Soft, hairy triangular leaves with toothed margins. White, purple or rose coloured, tubular flowers (October-March). Round fruit capsules with winged seeds.

**Risk areas:** Forest margins.

Creeping gloxinia smothers native plants.

Production

Environmental

Public

## Eradication programme pests

### Feral goat

*Capra hircus*



Map 9 shows the area of the region that feral goats are to be managed as an eradication pest. Feral goats are also managed as progressive containment pests in other parts of the region.

Goats were introduced to New Zealand in the early days of European settlement for food, to establish a commercial fibre industry, and for weed control on developing land.

Colour-wise, they can be white, brown or black, or any combination of these. In New Zealand both sexes have horns. All males and some females are bearded as adults. Males are the largest sex, with clearly heavier forequarters, shaggier coats and larger horns.

**Risk areas:** Introduced and native grasslands, scrub and forest.

Goats cause two-fold damage by eating native plants and by trampling large areas of vegetation and compactable soils.

Production

Environmental

Public

### Hornwort

*Ceratophyllum demersum*



Map 6 shows the area of the region that Hornwort is to be managed as an eradication pest. Hornwort is also managed as an Exclusion and Progressive containment pest in other parts of the region.

Hornwort is currently considered New Zealand's worst submerged weed. The narrow, bright green leaves are finely divided. Modified leaves anchor the plant in bottom sediments up to 16 m deep.

**Risk areas:** Ponds, marshes and quiet streams.

Grows in a wide range of waterbodies with growth to deeper depths than other weed species. Hornwort does not set seed in New Zealand, but reproduces from broken-off fragments that are easily moved to new sites on boats, boat trailers, fishing gear.

Production

Environmental

Public



## Eradication programme pests

### Horse nettle

*Solanum carolinense*



Horse nettle is not a true nettle. In fact it is part of the nightshade family. This North American perennial has conspicuous spines on leaves and stems. Stems become woody with age. Flowers occur in clusters and are star-shaped with five white to violet petals and a yellow centre. The fruit is a green berry when immature, turning yellow and wrinkled with maturity. Extremely invasive and very difficult to kill.

Present in the Bay of Plenty.

**Risk areas:** Pasture, roadsides, forest margins and amenity areas.

All parts of the plant are poisonous to varying degrees. While ingesting any part of the plant can cause fever, headache, scratchy throat, nausea, vomiting and diarrhoea, ingesting the fruit can cause abdominal pain, circulatory and respiratory depression, or even death.

Production

Environmental

Public

### Koi carp

*Cyprinus rubrofuscus*



Superficially resemble goldfish except that they grow to larger sizes (up to 10 kg and 75 cm long) and have two pairs of barbels, at the corner of their mouths.

Highly variable in colour, often accompanied with irregular blotching of black, red, gold, orange or pearly white.

**Risk areas:** Still waters in lakes, or backwaters in rivers.

Koi carp eat a wide range of food, including insects, fish eggs, juvenile fish of other species and a diverse range of plants and other organic matter. Koi carp cause habitat loss for plants, native fish, invertebrates and waterfowl.

They are highly tolerant of poor water quality and contribute to water quality decline.

Production

Environmental

Public

Map 15 shows the area of the region that Koi carp are to be managed as an eradication pest. Koi carp are also managed as an exclusion pest in other parts of the region.

## Eradication programme pests

### Kudzu vine

*Pueraria montana var. lobata*



South East Asian high-climbing vine with large tuberous roots. Compound leaves 15 cm-20 cm long with three individual leaflets up to 7 cm-10 cm long. Hanging clusters of pea-like, purple to red flowers.

**Risk areas:** Roadsides, forest margins, native bush.

Kudzu vine is fast growing with a dense, smothering habit that can kill native plants.

Production	Environmental	Public
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### Lantana

*Lantana camara*



Native to Central America. A many-branched, scrambling shrub 2 m-3 m tall, with scattered recurved prickles on the stems. Oval leaves, 5 cm-8 cm long, serrated and usually covered in rough hairs. Flower colours range from pink, yellow to orange and red.

**Risk areas:** Low and disturbed forest, open areas, coastal areas, forest margins, geothermal areas, pasture and exotic forests.

Lantana is a toxic plant that colonises coastal areas, forming dense thickets and displacing native vegetation. It is shade tolerant and may dominate the undergrowth of open forest.

Production	Environmental	Public
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Map 10 shows the area of the region that Lantana is to be managed as an eradication pest. Lantana is also managed as a progressive containment and sustained control pest in other parts of the region.

## Eradication programme pests

### Nassella tussock

*Nassella trichotoma*



South American densely-tussocky perennial grass with fine, wiry leaves which are rough to the touch. Flower head is an open-branched loose panicle of subtle purple spikelets.

**Risk area:** Grazing land.

Nassella tussock is a production pest that overruns desirable pasture. Stock cannot digest this grass, and it forms balls in their stomachs. Sheep avoid grazing older plants but may feed on young plants. Poor nutritional value causing ill-thrift and potentially death.

Production

Environmental

Public

### Noogoora bur

*Xanthium strumarium*



Australian annual herb, single stemmed or bushy up to 2 m high, with coarsely toothed leaves, similar to grape.

**Risk areas:** Maize paddocks, pasture.

Noogoora bur forms clusters of burs at leaf nodes that can stick to animal fur and clothing. Seeds are toxic to stock, particularly pigs and cattle. Also causes dermatitis in animals and humans.

Production

Environmental

Public

## Eradication programme pests

### Perch

*Perca fluviatilis*



Map 16 shows the area of the region that perch are to be managed as an eradication pest. Perch are also managed as an exclusion pest in other parts of the region.

European, freshwater, deep-bodied fish between 1 kg-2 kg with two large, erect dorsal fins - the first having up to 17 sharp spines. Olive-green back with tiger stripes running down to a silver/white belly. Rear fins and the lower half of their tails are orange-red.

**Risk areas:** Slow or still water environments.

Perch are carnivorous, eating insect larvae and other fish including native fish.

Production

Environmental

Public

### Purple loosestrife

*Lythrum salicaria*



Erect, perennial herb. Square stems, smooth or hairy. Stalkless leaves that grow either opposite or in whorls from the stem, heart-shaped at base but lance-shaped overall. Numerous magenta flower spikes (Dec-Feb). Mature plants can produce hundreds of thousands seeds per year.

**Risk areas:** Wetlands, drains, riparian areas, lake margins, ditches, streams, drier open areas.

Highly aggressive invader of natural and disturbed wetlands. Major pest in North America, capable of taking over millions of hectares of wetlands. Prevents access for wetland birds and recreational users, out-competes native vegetation, decreasing overall species diversity.

Production

Environmental

Public

## Eradication programme pests

### Rooks

*Corvus frugilegus*



Large bird native to Europe that was introduced to New Zealand in 1860 to control pests. Plumage is glossy black with a slightly purple tint. On their forehead and throat area is a greyish/white piece of scaly skin, which extends from the base of the bill to the nostrils. Adult birds grow to 50 cm long and weigh between 400 g-500 g. They have a distinct, harsh 'kaah' or 'caw' call.

**Risk areas:** Pine, eucalyptus stands, shelterbelts pasture.

Rooks have become a risk to newly sown crops, particularly cereals, peas, maize and squash, often pulling young plants from the ground to get the seeds. They can also damage pasture by tearing it up when searching for grubs.

Production

Environmental

Public

### Sagittaria

*Sagittaria platyphylla*



North American aquatic plant, *Sagittaria platyphylla* leaves are lance-shaped, above the water and strap shaped below the water. White/pink flowers from November-March are produced on spikes and sit at the same level as the emergent leaves.

The aquatic *Sagittaria montevidensis* has large glossy arrow-shaped leaves on stalks that stand up to 1 m above the water. White, three-petalled flowers with a purple blotch at the base from November- March.

**Risk areas:** Static or slow moving fresh water.

Both species have the potential to choke waterways, clog irrigation systems, aggravate flooding, displace native plants and animals and degrade fishing, swimming and other recreation opportunities.

Production

Environmental

Public

*Sagittaria montevidensis*



## Eradication programme pests

### Senegal tea

*Gymnocoronis spilanthoides*



South American semi-aquatic herb up to 1.5 m tall. Leaves are shiny, dark green with serrated edges. Mature stems are six sided and hollow between the nodes. Clover like flowers are white, 15 mm-22 mm in diameter.

**Risk areas:** Wet marshy soils, water margins and drains.

Senegal tea out competes and excludes all other species in marginal and shallow freshwater habitats and forms mats over deep water. It prevents seedlings of native species establishing, causes flooding, and rotting vegetation ruins water quality.

Production

Environmental

Public

### Spartina

*Spartina spp.*



North American robust, clump forming grass up to 1 m tall with an extensive root system. Leaf blade up to 60 cm long and 15 mm wide.

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

**Risk areas:** Saline wetlands, coastal drains and estuaries

Spartina traps sediment, raising the level of the ground above the high tide mark and destroying the inter-tidal zone and habitat. Other weedy grasses succeed spartina, 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.

Production

Environmental

Public

## Eradication programme pests

### Stout bamboo grass

*Austrostipa ramosissima*



Native to Eastern Australia. Tufted perennial grass with whorled branches giving it a bamboo-like appearance. Growing 1 m-2.5 m tall, it produces large quantities of feathery heads throughout the year.

**Risk areas:** Moist, well drained gullies, near forest or woodland margins.

Production

Environmental

Public

### Wallaby

*Macropus eugenii*



Released near Lake Ōkāreka in 1912, dama wallaby are one of the smallest wallaby species, standing up to half a metre tall and weighing from 5 kg-7 kg. They are grey-brown in colour with a paler grey underbelly. A thin white-silver stripe runs from under the eye to the nose. Mature animals may have a patch of reddish brown colouring at the shoulder.

**Risk areas:** Pasture, native and exotic forest.

Wallabies feed on native tree seedlings, grasses and ferns to such an extent that over time they will limit the regeneration of some species, potentially altering the structure and composition of our native forests. In exotic plantations they can damage pine and eucalyptus seedlings. On farmland they compete with stock for pasture.

Production

Environmental

Public

Map 11 shows the area of the region that wallaby are to be managed as an eradication pest. Wallaby are also managed as a progressive containment pest in other parts of the region.

### Water poppy

*Hydrocleys nymphoides*



South American aquatic perennial with long, creeping stems. The leaves are thick and shiny, 7 cm long and 6 cm wide, with an inflated, buoyant mid-rib. Flowers are short lived (one to two days) and are pale yellow, three-petaled and poppy shaped.

**Risk areas:** Ponds, streams, farm dams and lake margins.

Water poppy has dense growth that chokes streams, shallow ponds and lake margins, causing flooding. It shades out other plants, reduces nutrient availability and alters the habitat for other organisms.

Production

Environmental

Public

## Eradication programme pests

### White edged nightshade

*Solanum marginatum*



Native to North Africa. A perennial shrub which grows to 5 m. Spiky, lobed, white-ribbed leaves with long prickles, white flowers which bloom in clusters and toxic fruit that is yellow and tomato-like in appearance.

**Risk areas:** Plants are usually found in warm situations in higher rainfall areas on poor, rough land and wasteland.

Forms dense stands which displace pasture and can become impenetrable to both humans and stock.

Production

Environmental

Public




Table 5 Management regime for the eradication programme.

<b>Objective</b>	<b>Over the duration of this RPMP, eradicate pests (listed in Table 4) in the Bay of Plenty region and eliminate the adverse effects they have on production, environmental and public values.</b>
<b>Principal measures</b>	
<i>Requirement to act</i>	<p>Generic rules 6, 7 and 8 (see Table 12) will support the eradication of pests listed in Table 4.</p> <p>Although Council will lead management of Eradication programme pests, s122 (Power to give directions) of the Biosecurity Act 1993 requires that certain action may be required from occupiers to support a control operation. The authorised person shall determine which reasonable steps are most appropriate to remove the target pest(s), taking into account pest management cost to occupiers and their capability to undertake pest management action.</p>
<i>Service delivery</i>	<p>Council will undertake control of these pests (or any exclusion pests listed in Table 2 that enter the region). In the case of managing scheduled sports fish, Council will consult with Eastern Fish and Game and obtain the appropriate permissions under the Conservation Act 1987 and the Freshwater Fisheries Regulations 1983 prior to commencing any management work.</p> <p>Council will continue to work with other agencies on pests of mutual interest or support other agencies who have a clear leadership role in managing particular pests.</p>
<i>Council inspection</i>	<p>Council will conduct searches in places it believes are vulnerable to invasion by the subject species.</p> <p>Where new incursions are discovered, attempts will be made to trace and confirm vectors. Where feasible, management of these vectors will be implemented.</p> <p>Council will carry out programmes to increase public awareness of the eradication programme and the threat posed by these pests.</p>
<i>Advocacy and education</i>	<p>Council will continue to work with other agencies on pests of mutual interest or supporting other agencies who have a clear leadership role in managing particular pests.</p> <p>Council will advocate for and support industry led codes of practice that address effective eradication.</p> <p>Council will support ongoing science to advance effective eradication programmes.</p>
<b>Monitoring</b>	
<i>Indicators</i>	<p>Number of new incursions detected and under management.</p> <p>Eradication pests have had densities and distributions reduced.</p> <p>Number of incursions where eradication has been achieved.</p> <p>Number of management plans in place.</p>
<i>Method of monitoring</i>	Inspection of places vulnerable to invasion.
<i>Frequency of monitoring</i>	<p>Annually where pest is present.</p> <p>Annually for five years after zero-density has been achieved and then bi-annual inspections after that.</p>
<i>Frequency of reporting</i>	Annually.
<b>Outcomes</b>	<p>All known or new pest infestations are controlled to zero density within the duration of this RPMP.</p> <p>Adverse effects to production, environmental and public health values are eliminated.</p>

### 6.3 Progressive containment programme/Te kaupapa aukati i te hōrapatanga

The progressive containment programme covers species that are established to the point that eradication is not feasible, but it is feasible to prevent the pest from spreading to other parts of the region to reduce the distribution within the region or to eradicate the pest from parts of the region.

Table 6 Progressive containment programme pests.

Progressive containment programme pests					
Pest	Pest description	Adverse effects to be managed			
<p><b>African feather grass</b> <i>Cenchrus macrourus</i></p> 	<p>A robust, tussock-forming, perennial grass. The yellow/purple flower heads are a bristly spike 10 cm-30 cm long. It is a prolific seeder with vigorous creeping root system.</p> <p><b>Risk areas:</b> Swamps, streambanks, sand dunes, roadsides, waste places and pasture.</p>	<p>African feather grass grows to form dense stands which exclude other vegetation. It can become a major problem in pasture as stock avoid it. African feather grass may also become a problem on roadsides, parks and forestry. It will survive regular mowing.</p> <table border="1" data-bbox="1458 719 2072 778"> <tr> <td>Production</td> <td>Environmental</td> <td>Public</td> </tr> </table>	Production	Environmental	Public
Production	Environmental	Public			

## Progressive containment programme pests

### Alligator weed

*Alternanthera philoxeroides*



Map 1 shows the area of the region that Alligator weed is to be managed as progressive containment pest. Alligator weed is also managed as an Exclusion and an eradication pest in other parts of the region.

Marginal aquatic perennial native to Brazil which can also grow in pastures and crops. First discovered in New Zealand in 1906, it has long, creeping, hollow, green or red tinged stems and waxy green leaves. The flowers are white and clover-like.

**Risk areas:** Moist banks, swampy places, damp pasture, cropping land, drains, ponds, lakes, rivers and streams.

As a terrestrial weed alligator weed grows rapidly and can out-compete crops and pastures. Alligator weed will take up heavy metals from the soil and is known to be toxic to some livestock. Aquatic alligator weed can rapidly spread in streams and drainage canals, forming floating mats that trap sediments, increasing risk of flooding. In natural wetland areas alligator weed is a threat to native flora and fauna and is extremely difficult to eradicate once established in such a habitat.

Production

Environmental

Public

### Apple of sodom

*Solanum linnaeanum*



South African, strongly-spined shrub up to 2 m tall. Leaves are lobed, dark green and downy on the underside. Part of the nightshade family, the flowers are mauve or violet.

**Risk areas:** Grazing land, coastal areas and scrub margins.

Apple of sodom has the ability to spread prolifically. Its fruit is a toxic mottled green and white berry that turns yellow when mature.

Production

Environmental

Public

## Progressive containment programme pests

### Asian paddle crab

*Charybdis japonica*



Shell width up to 12 cm. Six prominent spines on each side of its shell. Flattened swimming paddles on back legs with colour varying between pale green, dark green, brown and purple.

Habitat is intertidal and sub-tidal to 15 m deep. Primarily estuarine rather than coastal. Aggressive defender of its territory.

Asian paddle crab predates on populations of commercially important bivalves and flatfish and can carry diseases that affect commercial crustacean fisheries.

Its nip could be problematic for recreationalists in the harbour.

Production

Environmental

Public

### Asiatic knotweed

*Fallopia japonica*



Thicket-forming with multitudes of arching reddish cane-like stems growing to 2 m or taller. Oval leaves and small white flowers in drooping sprays. Stems have a zig-zag pattern.

Asiatic knotweed grows to form dense thickets which expand rapidly.

**Risk areas:** Roadsides, railway corridors, wasteland, riverbanks and forest margins.

Asiatic knotweed may choke waterways, damage building foundations and roads, as the thickets completely displace any other vegetation.

Production

Environmental

Public

### Boneseed

*Chrysanthemoides monilifera*



South African, densely-branched evergreen shrub, up to 3 m tall. Woolly young stems become smoother as they mature. Bright green, leathery leaves and yellow daisy-like flowers followed by hard, oval green fruit which ripen to black.

**Risk areas:** Coastal areas, cliffs, forest margins and wasteland.

Rapidly replaces virtually all native species under 2 m tall and prevents the establishment of native plant seedlings.

Production

Environmental

Public

## Progressive containment programme pests

### Catfish (Brown bullhead catfish)

*Ameiurus nebulosus*



Map 2 shows the area of the region that catfish are to be managed as progressive containment. Catfish are also managed as an exclusion pest.

The North American brown bullhead catfish have been present in New Zealand since the late 1800s and for many years, were rarely encountered. They were first recorded in Lake Taupo in 1985. Accidental introductions via boat trailers and especially nets used for eeling is continuing to spread this species around New Zealand. Dark brown to olive green with paler sides and bellies. Catfish are an extremely robust fish and can survive for long periods out of water. They commonly grow to 200 mm–300 mm in length.

**Risk areas:** Although adaptable, prefer slow and still freshwater.

Catfish will adversely impact freshwater ecosystems. They are carnivorous and use their barbells to probe for insects, crustaceans, molluscs and small fish. Freshwater crayfish/koura are a major prey species.

They are highly tolerant of poor water quality and may contribute to water quality decline.

Production	Environmental	Public
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### Climbing spindle berry

*Celastrus orbiculatus*



Map 13 shows the area of the region that Climbing spindle berry is to be managed as a progressive containment pest. Climbing spindle berry is also managed as a sustained control pest in other parts of the region.

Native to Eastern Asia. A vigorous, deciduous, climber with sucker roots. Young green twigs often have sharp spines. Roundish, finely serrated leaves. Pale green, insignificant flowers followed by round yellow/orange seed capsules that split to expose scarlet centres.

**Risk areas:** Forest margins, disturbed native bush and roadsides.

The stems of climbing spindle berry strangle hosts and climb to the top of most canopies, causing them to collapse. Stems become dense, forming impenetrable thickets.

Production	Environmental	Public
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## Progressive containment programme pests

### Clubbed tunicate

*Styela clava*



Native to the North West Pacific. Sea squirt with a long, club-shaped body on a tough stalk. Its surface is tough, leathery, ruffled and knobby. They can be brownish-white, yellowish-brown, or reddish-brown. They grow rapidly, reaching densities of up to 500-1,500 individuals per square metre. They can live for up to two years and grow up to 160 mm long.

This sea squirt competes for space and food with native and aquaculture species (e.g. mussels, oysters). It can also be a nuisance by fouling marine farming lines, vessel hulls and other structures.

Production

Environmental

Public

## Progressive containment programme pests

### Darwin's barberry

*Berberis darwinii*



Map 3 shows the area of the region that Darwin's barberry is to be managed as a progressive containment pest. Darwin's barberry is also managed as an exclusion pest in other parts of the region.

Originally from Chile, the plant became established in New Zealand in 1946. A spiny shrub, 1 m-3 m tall, its leaves are shiny dark green and spiny (but smaller than holly) and the stems are tough, woody and hairy with five-pronged needle sharp spines.

It has drooping clusters of deep orange flowers (5 mm-7 mm in diameter) from July through to February, which develop into hanging groups of oval purple-black berries with a white bloom or coating.

The plant is spread mostly from birds and possums eating the berries but can also revegetate from root suckers.

**Risk areas:** Disturbed forest and bush margins, pasture, tussock land and wasteland.

Darwin's barberry is very invasive in forests, riparian areas and in degraded pasture. It is considered a threat to forestry and native species and ecosystems. In the Waikato it is poised to become a serious forestry pest, as without control it will move into farmland and areas of indigenous forest.

Production	Environmental	Public
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## Progressive containment programme pests

### Egeria

*Egeria densa*



Map 4 shows the area of the region that Egeria is to be managed as a progressive containment pest.

Egeria is also managed as an exclusion pest in other parts of the region.

A bottom-rooted, vigorous aquatic perennial. One of the oxygen weeds, denser and broader than *Elodea* and *Lagarosiphon*, with distinctive white flowers produced at the water surface in summer.

**Risk areas:** Still waters of swamps, ponds and lakes.

Forms vast underwater meadows, shades out smaller native species, and prevents seedlings of native species establishing.

Production	Environmental	Public
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### Feral goat

*Capra hircus*



Map 9 shows the area of the region that Feral goats are to be managed as a progressive containment pest. Feral goats are also managed as an eradication pest in other parts of the region.

Goats were introduced to New Zealand in the early days of European settlement for food, to establish a commercial fibre industry, and for weed control on developing land.

Colour-wise, they can be white, brown or black, or any combination of these. In New Zealand both sexes have horns. All males and some females are bearded as adults. Males are the largest sex, with clearly heavier forequarters, shaggier coats and larger horns.

**Risk areas:** Introduced and native grasslands, scrub and forest.

Goats cause two-fold damage by eating native plants and by trampling large areas of vegetation and compactable soils.

Production	Environmental	Public
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## Progressive containment programme pests

### Hornwort

*Ceratophyllum demersum*



Map 6 shows the area of the region that Hornwort is to be managed as a progressive containment pest. Hornwort is also managed as an Exclusion and Eradication pest in other parts of the region.

Hornwort is currently considered New Zealand's worst submerged weed. The narrow, bright green leaves are finely divided. Modified leaves anchor the plant in bottom sediments up to 16 m deep.

**Risk areas:** Ponds, old manes and quiet streams.

Grows in a wide range of waterbodies with growth to deeper depths than other weed species.

Hornwort does not set seed in New Zealand, but reproduces from broken-off fragments that are easily moved to new sites on boats, boat trailers, fishing gear.

Production	Environmental	Public
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### Italian buckthorn

*Rhamnus alaternus*



Map 7 shows the area of the region that Italian buckthorn is to be managed as a progressive containment pest. Italian buckthorn is also managed as an exclusion pest in other parts of the region.

Native to the Mediterranean, an evergreen shrub up to 5 m. Young shoots are purplish, angled and hairy. Leaves (up to 6 cm long and 3 cm wide) are egg-shaped, leathery, glossy on top and may be toothed along the edges. Flowers (May to November) are green, 3 mm-4 mm in diameter, fragrant and have no petals. Fruit is dark red and glossy, turning black when ripe.

**Risk areas:** Coastal areas, cliffs, forest margins, open areas, all types of forest and gardens.

Italian buckthorn forms dense stands and prevents the establishment of native plant seedlings.

Production	Environmental	Public
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## Progressive containment programme pests

### Lagarosiphon

*Lagarosiphon major*



Map 8 shows the area of the region that Lagarosiphon is to be managed as a progressive containment pest. Lagarosiphon is also managed as an exclusion pest in other parts of the region.

Wholly submerged, vigorous freshwater perennial up to 4 m tall, growing to depths of 6 m. One of the oxygen weeds.

**Risk areas:** Clear, still or slow-moving, low fertility freshwater ponds, lakes, streams and rivers.

Grows rapidly in waterbodies and smothers, excludes and replaces native vegetation. It also reduces the availability of oxygen to fish.

Production	Environmental	Public
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### Lantana

*Lantana camara*



Map 10 shows the area of the region that Lantana is to be managed as a progressive containment pest. Lantana is also managed as an Eradication and a sustained control pest in other parts of the region.

Native to Central America. A many-branched, scrambling shrub 2 m-3 m tall, with scattered recurved prickles on the stems. Oval leaves, 5 cm-8 cm long, serrated and usually covered in rough hairs. Flower colours range from pink, yellow to orange and red.

**Risk areas:** Low and disturbed forest, open areas, coastal areas, forest margins, geothermal areas, pasture and exotic forests.

Lantana is a toxic plant that colonises coastal areas, forming dense thickets and displacing native vegetation. Is shade tolerant and may dominate the undergrowth of open forest.

Production	Environmental	Public
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## Progressive containment programme pests

### Mediterranean fanworm

*Sabella spallanzanii*



Large, tube-dwelling, aquatic worm, measuring up to 20 mm wide and 800 mm long. It has a prominent crown of feeding tentacles that extend out of the tube and can be 150 mm wide. The crown is often banded orange, purple or white. The tubes are leathery, flexible and muddy looking and are generally found on hard sub-tidal structures, but can also be buried up to 10 cm deep in soft substrates.

Generally found in shallow subtidal areas in depths from 1 m-30 m. It attaches to a range of solid surfaces and is a common fouling species on moored vessels.

Mediterranean fanworm forms dense beds that are likely to out-compete other species and interfere with biological processes. Specifically, it has the potential to compete with native filter-feeding organisms for food and space and in high densities is likely to impact commercially important species (mussels, oysters, scallops, etc.).

Production

Environmental

Public

### Old man's beard

*Clematis vitalba*



Native to Europe and South West Asia. A large, climbing vine up to 30 m high. Compound leaves with five oval leaflets. Flowers are greenish-white and fragrant and the seed heads are grey fluffy balls that persist over winter.

**Risk areas:** Rock areas, all types of forest, forest margins, open areas, home gardens, orchards.

Old man's beard smothers and kills all plants to the highest canopy, and prevents the establishment of native plant seedlings. Readily invades established forest and causes canopy collapse.

Production

Environmental

Public

Map 14 shows the area of the region that Old man's beard is to be managed as a progressive containment pest. Old man's beard is also managed as a sustained control pest in other parts of the region.

## Progressive containment programme pests

### Rudd

*Scardinius erythrophthalmus*



Map 17 shows the area of the region that Rudd is to be managed as a progressive containment pest. Rudd is also managed as an exclusion pest in other parts of the region.

Rudd are a type of carp native to Europe, Asia and Russia. They were illegally imported to New Zealand in 1967.

A stocky, deep bodied fish appearing similar to goldfish with distinctive red fins and large, shiny scales that range from silver to pale orange in colour. Rudd will normally grow to about 25 cm in length and weigh about 500 g.

**Risk areas:** Slow or still water environments.

Rudd are often referred to as the 'possums of the waterways', adult rudd feed preferentially on native aquatic plants, while juvenile rudd feed voraciously on zooplankton (tiny aquatic animals). These feeding habits endanger native plant species, destroy indigenous habitat, remove food sources for native fish and invertebrate species, and potentially impact negatively on water quality by stirring up bottom sediments and muddying the water.

Production	Environmental	Public
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### Spiny emex

*Emex australis*



The leaves are dull green and are very similar to docks in shape. Flowers are inconspicuous and are produced in clusters in between the leaves and stem. Fruits (or burrs) are in clusters, with each of the three-cornered burrs forming in the forks of the leaves. Ripe burrs, when shed, lie with one sharp spike upwards.

**Risk areas:** Sandy soils in coastal areas, cultivated paddocks, along roadsides and in waste places.

The fruit from spiny emex can injure animals and humans and cause lameness. Wool can be downgraded when containing the seeds. Spiny emex contains oxalate levels which are high enough to poison sheep if they eat substantial amounts.

Production	Environmental	Public
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## Progressive containment programme pests

### Tench

*Tinca tinca*



Map 18 shows the area of the region that tench are to be managed as a progressive containment pest. Tench are also managed as an exclusion pest in other parts of the region.

Native to Europe, tench are a medium size, stocky fish, light to deep olive green in colour with brick orange eyes, small scales, rounded fins and a single pair of barbells. Tench are tolerant of both low oxygen and brackish environments. Widespread in Auckland and Northland, known populations also exist in Waikato, Wellington, Nelson, Canterbury and Oamaru. No known presence in the Bay of Plenty.

**Risk areas:** Slow or still water environments.

Tench are carnivorous bottom dwellers posing a risk to native crustaceans, molluscs and insect larvae.

Production	Environmental	Public
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### Variegated thistle

*Silybum marianum*



Native to Southern Europe, an erect biennial thistle up to 2.5 m tall. The glossy, rosette leaves are variegated with distinctive white blotches and veins and can grow up to 60 cm long. The large, purple flowers are surrounded by many sharp spines.

**Risk areas:** Pastures, roadsides and amenity wasteland.

Prickles from variegated thistle damage stock and can cause nitrate poisoning in sheep and cattle.

Production	Environmental	Public
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## Progressive containment programme pests

### Wallaby

*Macropus eugenii*



Map 11 shows the area of the region that wallaby are to be managed as a progressive containment pest.

Wallaby are also managed as an eradication pest in other parts of the region.

Released near Lake Ōkāreka in 1912, dama wallaby are one of the smallest wallaby species, standing up to half a metre tall and weighing from 5 kg-7 kg. They are grey-brown in colour with a paler grey underbelly. A thin white-silver stripe runs from under the eye to the nose. Mature animals may have a patch of reddish brown colouring at the shoulder.

**Risk areas:** Pasture, native and exotic forest.

Wallabies feed on native tree seedlings, grasses and ferns to such an extent that over time they will limit the regeneration of some species, potentially altering the structure and composition of our native forests. In exotic plantations they can damage pine and eucalyptus seedlings. On farmland they compete with stock for pasture.

Production	Environmental	Public
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### Wild kiwifruit

*Actinidia spp.*



Originating in China, seeds were first introduced in 1904, and large-scale commercial farming began in the 1970s. It took some 50 years from its arrival in the country for kiwifruit to appear in the wild and since the late 1970s, increasing numbers of wild plants have been recorded.

Vigorous hairy climber. Large, broadly oval leaves, white hairs underneath and red hairs on veins. White flowers (October-December) in small clusters. Distinctive green, oval, hairy fruit.

**Risk areas:** Bush, pine forest, shelter belts and gullies. Mostly found near orcharding areas.

Wild kiwifruit rapidly forms a dense, heavy blanket of growth, which smothers and eventually kills, or topples, trees and shrubs beneath. It is a significant threat to native bush and forestry.

Production	Environmental	Public
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## Progressive containment programme pests

### Wilding conifer

#### Dwarf mountain pine

*Pinus mugo*



A distinctively sprawling, growing outwards as much as up, pine tree with two short needles which grow between 3 cm-7 cm in length. Cones are 3 cm-5 cm in length with no spines, some are hooked back like a bunch of bananas, and are retained on the tree. Historically it was planted in alpine areas and while it has spread slowly it is very hard to kill. Seeds are dispersed by wind, similar invasion profile to *Pinus contorta*.

**Risk areas:** Indigenous and introduced scrub, tussock grassland, pasture and open forest.

Effects on soil by changing the soil nutrient cycles and therefore altering the plants which thrive in the soil following pine. *Pinus mugo* harms biodiversity particularly at high densities. For *Pinus mugo* invading alpine scree sites, it can stabilise the scree slopes, altering the natural erosion processes. Because they are fire-adapted species and therefore burn quickly and readily in dry conditions, *Pinus mugo* poses a fire risk. Particularly in water sensitive catchments, wilding pines lower water yields.

Production	Environmental	Public
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### Mountain pine

*Pinus uncinata*



Considered by many taxonomists to be a sub-species of *Pinus mugo*, mountain pine is distinguishable from dwarf mountain pine by cone characteristics. The cones are asymmetrical and some cone scales are elongated downwards. A tree 12-20 m tall with dense foliage and dark green rigid leaves. Leaves arranged in fascicles of two, 3 cm-7 cm long by 1 mm-1.5 mm wide. Seed wing oblong, approximately 1 cm long. Seeds are dispersed by wind, similar invasion profile to *Pinus contorta*.

**Risk areas:** Indigenous and introduced scrub, tussock grassland, pasture and open forest.

Effects on soil by changing the soil nutrient cycles and therefore altering the plants which thrive in the soil following pine. *Pinus uncinata* harms biodiversity particularly at high densities. Because they are fire-adapted species and therefore burn quickly and readily in dry conditions, wilding pines pose a fire risk. Particularly in water sensitive catchments, wilding pines lower water yields.

Production	Environmental	Public
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## Progressive containment programme pests

### European larch

*Larix decidua*



European larch is the most common of the larch species. It is a deciduous tree that is open branching and can grow to 40 m in height. Needles are green approximately 4 cm in length and are held in dense clusters of 40-65 needles on the side shoots of branches. Male cones are yellow, and drooping on the lower sides of branches, female cones are crimson red, maturing to brown, upright and 4 cm in length and dispersed by wind.

**Risk areas:** European larch prefers sites with low fertility including montane and subalpine habitats, including tussock.

Similar to pines, European larch alters the soil nutrient cycling in areas where it invades. It also harms biodiversity particularly at high densities, altering ecosystems and forcing other species out.

Production	Environmental	Public
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### Scots pine

*Pinus sylvestris*



Scots pine is a medium to large sized tree, growing to 35 m tall, with a flattened crown in mature trees, it has fissured grey to reddish bark. It has needle like leaves up to 7 cm long which are rigid, often twisted, bluish green, and arranged in groups of two. Separate male and female cones are produced on the same plants. Male cones are about 5 mm long and in dense clusters, while the female cones are 3 cm-6 cm long, more or less symmetrical, with short and recurved stalks, they are wind dispersed.

Effects on soil by changing the soil nutrient cycles and therefore altering the plants which thrive in the soil following pine. *Pinus sylvestris* harms biodiversity particularly at high densities. Because they are fire-adapted species and therefore burn quickly and readily in dry conditions, wilding pines pose a fire risk. Particularly in water sensitive catchments, wilding pines lower water yields.

Production	Environmental	Public
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## Progressive containment programme pests

### Lodgepole pine

*Pinus contorta*



Native to North America. A small to medium sized tree with straight or contorted branches. Twigs are green in the first year, becoming orange and brown with age. Leaves are in pairs, 2.5 cm-7 cm long, rigid and dark green. Cones are yellowish brown, 2 cm-6 cm long and 2 cm-3 cm wide, narrowly oval and shining.

Lodgepole Pine is the most invasive introduced conifer species and represents a significant proportion of all wilding conifers and original sources of wilding conifer spread.

Lodgepole pine forms dense, often pure stands, especially on poor soils. Plantations remove groundwater in summer, fail to retain it in winter, causing drought and flooding. Leaf litter affects water quality, can destroy freshwater habitats.

**Risk areas:** Indigenous and introduced scrub, tussock grassland, pasture and open forest.

Lodgepole Pine is the most invasive introduced conifer species and represents a significant proportion of all wilding conifers and original sources of wilding conifer spread.

Lodgepole pine forms dense, often pure stands, especially on poor soils. Plantations remove groundwater in summer, fail to retain it in winter, causing drought and flooding. Leaf litter affects water quality and can destroy freshwater habitats.

Production	Environmental	Public
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### Woolly nightshade

*Solanum mauritianum*



Map 12 shows the area of the region that Woolly nightshade is to be managed as progressive containment pest. Woolly nightshade is also managed as a sustained control pest in other parts of the region.

Native to South America. Spreading, 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. Dense clusters of mauve to purple flowers, followed by clusters of round berries that ripen from green to dull yellow.

**Risk areas:** Forest margins, shrublands, coastal and estuarine margins, consolidated sand dunes, wasteland, wetlands and roadsides.

Aggressive and fast growing woolly nightshade forms dense, often pure stands. Inhibits or prevents establishment of native plant seedlings and slows regeneration rate of native forests.

The dust from the leaves and stems can irritate the skin, eyes, nose and throat. The berries are poisonous to humans if eaten, particularly to children, but also to cattle and pigs.

Production	Environmental	Public
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## Progressive containment programme pests

### Yellow flag iris

*Iris pseudacorus*



Native to Europe, Asia and North Africa. A branched, perennial iris with a strong root system that grows up to 2 m tall. Broad, flat sword shaped leaves with a distinctive mid-rib. The large, yellow flowers are typically iris-like in form with the production of poisonous seeds.

**Risk areas:** Along streams, rivers, drains, swampy ground, wasteland, ponds and lakes.

Roots from yellow flag iris form mats displacing 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.

Production

Environmental

Public

Table 7 Management regime for the progressive containment programme.

Objective	Over the duration of this RPMP, reduce impacts to production, environmental and public values by containing and, where practicable, reducing the geographic distribution of pests (listed in Table 6) in the Bay of Plenty region.
<b>Principal measures</b>	
<i>Requirement to act</i>	<p>Generic rules 6, 7 and 8 (see Table 12) will support the progressive containment of pests listed in Table 6.</p> <p>Council will enforce progressive containment rules as set out in Table 8. Occupiers are responsible for the destruction of prescribed pest species on property they occupy.</p> <p>Council and occupiers may develop pest management agreements.</p>
<i>Service delivery</i>	<p>Council will maintain control and management of:</p> <ul style="list-style-type: none"> <li>• African feather grass</li> <li>• Alligator weed</li> <li>• Asian paddlecrab</li> <li>• Asiatic knotweed</li> <li>• Catfish</li> <li>• Clubbed tunicate</li> <li>• Feral goats</li> <li>• Rudd</li> <li>• Spiny emex</li> <li>• Tench*</li> <li>• Wallaby</li> <li>• Yellow flag iris</li> </ul> <p>These pests are high risk (but will not meet the eradication objective) and do not lend themselves to occupier control responsibilities.</p> <p>*Note Council will need to obtain appropriate permission under the Conservation Act 1987 to manage tench as they are scheduled sports fish and subject to the Conservation Act 1987 and Freshwater Fisheries Regulations 1983.</p> <p>Council may provide service delivery for some other progressive containment pests to protect environmental, public or production values.</p> <p>Council may provide service delivery for some progressive containment pests in accordance with mapped containment areas as shown in operational plans.</p> <p>Council will work in partnership with other parties that have pest management responsibilities and interests.</p>
<i>Council inspection</i>	<p>Council will monitor the success of progressive containment of these pests by recording the extent and/or density of the subject pest in the areas where it is present.</p> <p>Council will work with crown agencies and entities for the progressive containment of these pests on crown owned/managed land.</p>
<i>Advocacy and education</i>	<p>Council will advocate for the progressive containment of these pests through its biodiversity protection agreements.</p> <p>Council will carry out programmes to increase public awareness of these pests and provide advice on how to contain them.</p> <p>Council will advocate for and support industry led codes of practice that will contribute towards the progressive containment of these pests.</p> <p>Council will support ongoing science to advance effective progressive containment.</p>

<b>Monitoring</b>	
<i>Indicators</i>	Rate that progressive containment pests have had densities and distributions reduced. Number of pest management agreements initiated (including Memoranda of Understandings with Crown agencies and Crown entities).
<i>Method of monitoring</i>	Inspection of places vulnerable to invasion. Inspection of properties within containment areas. Monitoring of containment areas. Complaints received.
<i>Frequency of monitoring</i>	As appropriate for each pest.
<i>Frequency of reporting</i>	Annually.
<b>Outcomes</b>	Reduction in extent and density of these pests. Areas that are clear of these pests will remain so. The spread of these pests between properties will be reduced. The spread of these pests throughout the region will be stopped.

Table 8 Rules for progressive containment pests.

<b>Rules for progressive containment pests</b>	
<b>Rule 1</b>	The occupier in charge of a craft moving to or within Bay of Plenty waters must ensure the hull is sufficiently cleaned and antifouled so that the hull has no more than a slime layer and/or barnacles. This is to support the progressive containment of clubbed tunicate and Mediterranean fanworm.
<b>Rule 2</b>	All aquaculture equipment (including ropes and floats) used within Bay of Plenty waters must not have been used outside Bay of Plenty waters or used within a known pest incursion zone in the Bay of Plenty. This is to support the progressive containment of clubbed tunicate and Mediterranean fanworm.
<b>Rule 3</b>	<p>Occupiers must destroy the following pests in areas where these pests are included as progressive containment pests:</p> <ul style="list-style-type: none"> <li>• Apple of sodom (entire region)</li> <li>• Boneseed (entire region)</li> <li>• Climbing spindle berry (Map 13)</li> <li>• Darwin's barberry (Map 3)</li> <li>• Egeria densa (Map 4)</li> <li>• Hornwort (Map 6)</li> <li>• Italian buckthorn (Map 7)</li> <li>• Lagrosiphon major (Map 8)</li> <li>• Lantana (Map 10)</li> <li>• Lodgepole pine (entire region)</li> <li>• Scots pine (entire region)</li> <li>• Dwarf mountain pine (entire region)</li> <li>• Mountain pine (entire region)</li> <li>• European larch excluding sterile hybrids (entire region)</li> <li>• Old man's beard (Map 14)</li> <li>• Variegated thistle (entire region)</li> <li>• Wild kiwifruit</li> <li>• Woolly nightshade (Map 12)</li> </ul> <p>Occupiers must comply with Rule 3 unless a property specific pest management agreement has been agreed and signed between the occupier and the Council.</p>
To manage progressive containment programme pests, generic rules 6, 7, 8 and 9 also apply.	
<b>Advisory note</b>	A breach of any rules for progressive containment programme pests creates an offence under section 154N (19) of the Biosecurity Act 1993.

## Rules for progressive containment pests

### Explanation

Rules 1 and 2 will support the protection of productive and environmental values in the marine space by targeting the movement of vessels and marine industry equipment. The marine industry and craft owners have a responsibility to take measures to avoid marine pest spread. These rules will support best practice codes within the marine industry.

Best practice measures include:

- regularly cleaning and antifouling your vessel's hull and niche areas.
- ensure antifouling paint is in good condition and working effectively.
- cleaning hull and niche areas when your vessel has been stationary for periods of time.
- keeping biofouling management information in one place, like the vessel's logbook. This will help to show you have been managing your biofouling.

This rule aligns with the Ministry for Primary Industries Craft Risk Management Standard for Biofouling.

The Regional Coastal Environment Plan manages the establishment of new marine farms including consideration of pest spread and management.

Rule 3 requires the destruction of the listed plant species as this is the most effective way to contain and reduce the geographical distribution of these species. This rule places pest management responsibility on occupiers.

However, in some instances pest management agreements may offer a more pragmatic alternative approach and provide for joint pest management. These agreements may take into account:



- complexity and equitability issues associated with the history and timing of plant pest infestation and sources. For example, many original *contorta* sources are legacy Crown plantings or historic shelter and amenity plantings and some wilding conifer sources have been legally established (under the RMA) with no legal obligation to manage wilding conifer spread.
- some pest infestations are due to the actions/inactions of previous occupiers.
- in some areas it may be unreasonable to expect adjoining landowners to control pests (e.g. steep topography).
- complex land ownership issues.

Progressive containment pests that are not managed by Rules 1, 2 and 3 are still subject to provisions in the Biosecurity Act 1993 as they are listed as pests in this RPMP and also managed through rules 6, 7, 8 and 9 of this RPMP.

## 6.4 Sustained control programme/Te kaupapa pupuri whakauka

Where a pest is well established and preventing its spread is no longer a realistic objective, management of the pest focuses on reducing the general impacts of the pest. This is sustained control.

Table 9 Sustained control programme pests.

Sustained control programme pests					
Pest	Pest description	Adverse effects to be managed			
<p><b>African club moss</b> <i>Selaginella kraussiana</i></p> 	<p>A small, carpet forming fern ally groundcover with fine, long roots and slender, irregular branched stems the root at nodes. Leaves are 2 mm-3 mm and in rows. Spores and stem fragments are spread by boots, livestock, water movement and dumped vegetation. It can disperse widely and quickly and grows on the ground or on the trunks of other plants. It can tolerate hot or cold, and light to deep shade but does require damp to wet substrate.</p> <p><b>Risk areas:</b> Disturbed forest and shrubland, streamsides and fernland.</p>	<p>It invades the forest floor inhibiting the establishment of native plant seedlings and leads to the succession of other more aggressive weeds.</p> <table border="1"> <tr> <td>Production</td> <td>Environmental</td> <td>Public</td> </tr> </table>	Production	Environmental	Public
Production	Environmental	Public			
<p><b>Banana passionfruit</b> <i>Passiflora tarminiana, Passiflora tripartita</i></p> 	<p>Evergreen climbing vine. Long, densely haired stems with many spiraling tendrils. Leaves have three lobes, with longer middle lobe, serrated edges and downy undersides. Pink hanging flowers with a central tube appear from January to December, shortly followed by hanging, thin-skinned fruit which change from green to orange as they ripen. Fruit has a sweet edible orange pulp and dark red seeds.</p> <p><b>Risk areas:</b> Disturbed and open forest, light wells and margins on intact bush, river and stream banks, coastline, cliffs, consolidated sand dunes, inshore islands.</p>	<p>It forms large masses, growing rapidly and smothering the forest canopy, preventing other plants from establishing.</p> <table border="1"> <tr> <td>Production</td> <td>Environmental</td> <td>Public</td> </tr> </table>	Production	Environmental	Public
Production	Environmental	Public			

## Sustained control programme pests

### Blackberry

*Rubus fruticosus agg.*



Native to Europe, a tall, scrambling shrub with arching stems and very sharp backward pointing thorns. Leaves usually have five to seven oval leaflets, with prickly stalks and mid-ribs. Flowers are white or pink, 2 cm-3 cm in diameter, each with five petals and many stamens. Edible berries are red at first and purple-black when ripe.

**Risk areas:** Pasture, exotic forests, open areas, roadsides, wasteland, sand dunes and streambanks.

Can invade poorly maintained pasture, reducing the stock-carrying capacity and is a problem in forest plantations and other disturbed areas. Blackberry can also restrict access to recreation areas and provide a habitat for animal pests (rabbits).

Production	Environmental	Public
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### Cape ivy

*Senecio angulatus*



A scrambling perennial that often forms a dense tangled shrub that can grow to 2 m-3 m tall, with wiry to woody stems that are sparingly branched. Very fleshy, leathery leaves have one to three 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. Produces many long lived seeds that are dispersed a long way from parent plants via wind or soil movement and dumped vegetation. Moderate growth rate and layering stems, scrambles over shrubs and ground, forms dense, tall thickets. Tolerates salt, wind, drought, semi-shade and damage.

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

Smothers ground and low-growing plants, forms dense, long-lived mats that prevent the establishment of native seedlings.

Production	Environmental	Public
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## Sustained control programme pests

### Cathedral bells

*Cobaea scandens*



Fast-growing, evergreen climber with strong tendrils. Leaves are arranged alternately on stems, and are made up of 3 pairs of oval leaflets 2 cm-4 cm in length. Deep purple bell-shaped flowers appear from December to May. Green seed capsule containing winged seeds is 5 cm-9 cm in length. Seeds are dispersed by wind, though dumping of waste vegetation is thought to be the main source of spread.

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

Smothers other plants and prevents the establishment of seedlings.

Production	Environmental	Public
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### Chilean rhubarb

*Gunnera tinctoria*



A large perennial herb up to 2 m. Massive, rough and wrinkled umbrella-sized leaves (80 cm x 1 m) on sturdy stalks have five to seven lobes and raised veins beneath. Both leaves and leaf stalks are covered in rubbery red prickles. The inflorescence is a spike of 50 cm-75 cm, up to 10 cm in diameter, bearing very small flowers. It produces an abundance of viable seed (approximately 250,000 seeds in a year). Seeds are spread by water and birds. Spreads vegetatively by growth of rhizomes and regrowth from rhizome fragments.

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

Forms dense colonies with the large leaves shading out and suppressing native vegetation.

Production	Environmental	Public
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## Sustained control programme pests

### Chinese windmill palm

*Trachycarpus fortunei*



Palm tree with a single straight trunk without branches. Dead leaves hang from top of trunk, forming a skirt. Upper trunk is covered with remains of old leaf stalk bases. Lower, mature trunk develops lumpy ringed bark. Leaves are round fan-shaped, and divided into narrow, pleated leaflets that droop at the tips. Leaf stalks are long (about 1 m) with stout, sharp teeth along the margins. Many small yellow flowers are held on a large, branched and drooping spike from November to January. Small, slightly flattened yellow berries follow in March and ripen to blue-black. It is a large, long-lived tree that is hardy, fast-growing and produces prolific seeds which are spread by birds and gravity.

**Risk areas:** Disturbed forests, forest and shrubland margins, river and stream edges, wetlands and islands in warmer areas.

Forms tall stands that compete with native plants for light, space, water and nutrients.

Production	Environmental	Public
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### Chocolate vine

*Akebia quinata*



Climber with slender stems that are green when young, turning brown as they mature. Leaves often described as 'hand-shaped' with a purple tinge that becomes blue-green when mature. Clusters of brown-purple flowers with a vanilla fragrance from August to October. Fruits are purple-violet flattened sausage-like pods. Spreads via stem fragments and bird-dispersed seeds.

**Risk areas:** Prefers partial shade and well-drained yet moist soil. Tolerant to a wide range of conditions but prefers riparian zones, forest edges, wetlands and urban areas.

Grows rapidly, forming a thick, smothering mat that prevents establishment of seedlings and native plants.

Production	Environmental	Public
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## Sustained control programme pests

### Climbing asparagus

*Asparagus scandens*



A slender, scrambling or climbing perennial with green multi-branched stems up to 2 m long which twine readily. Leaves are narrow and lance-shaped. Tiny whitish flowers appear from September to December, followed from October to February by round berries (8 mm diameter) that ripen from green to orange-red and contain one to two seeds each. Forms dense patches on the ground and in the sub-canopy in most forest types with tough, long-lived tubers that re-sprout easily, particularly through dumped vegetation and contaminated soil. Seeds are bird-dispersed.

Can ringbark and kill soft-barked shrubs and trees, and invades areas where epiphytes are usually found.

Production	Environmental	Public
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### Climbing spindle berry

*Celastrus orbiculatus*



Native to Eastern Asia. A vigorous, deciduous, climber with sucker roots. Young green twigs often have sharp spines. Roundish, finely serrated leaves. Pale green, insignificant flowers followed by round yellow/orange seed capsules that split to expose scarlet centres.

**Risk areas:** Forest margins, disturbed native bush and roadsides.

Stems from climbing spindle berry strangle host and climb to the top of most canopies, causing them to collapse. Stems become dense, forming impenetrable thickets.

Production	Environmental	Public
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Map 13 shows the area of the region that Climbing Spindle berry is to be managed as a sustained control pest. Climbing spindle berry is also managed as a progressive containment pest in other parts of the region.

## Sustained control programme pests

### Coastal banksia

*Banksia integrifolia*



Fast growing large shrub or small tree up to 15 m high, with upright, cone shaped greenish-yellow inflorescences from March to April that give rise to hard wooden cones with many seeds. The seeds are spread by birds. Narrow, elliptic leaves, deep glossy green on upper with silvery felted undersides. Forms dense thickets in open areas. Tolerant of wide range of habitats from estuaries to dunes and subalpine tussock.

**Risk areas:** Preferred habitat is within 50 km of the coastline, ranging from coastal dunes to sub-alpine tussock grassland. Threatens well-drained sites especially sand dunes.

Forms dense stands that compete with native plants for light, space, water and nutrients.

Production

Environmental

Public

### Cotoneaster

*Cotoneaster glaucophyllus*



Spreading evergreen shrub or small tree, 2 m-5 m tall. Young stems covered in downy hairs but becoming hairless and dark reddish-purple when mature. Often covered in sooty mould. Pale blue-green leaves when young. Clusters of 15-60 small white flowers appear from October to January followed by scarlet or orange berries from February to August. Birds distribute the seed widely.

**Risk areas:** Coastline and inshore islands, dry forest and shrubland, forest margins, bluffs, rocky sites, slips and riverbeds.

Produces large amounts of viable seed, matures quickly, is long-lived and forms dense often pure stands outcompeting native species.

Production

Environmental

Public

## Sustained control programme pests

### Elodea

*Elodea Canadensis*



Map 5 shows the area of the region that Elodea is to be managed as a sustained control pest. Elodea is also managed as an exclusion pest in other parts of the region.

Wholly submerged, dark green, aquatic perennial. One of the oxygen weeds, often forming tall dense masses in freshwater to 10 m deep.

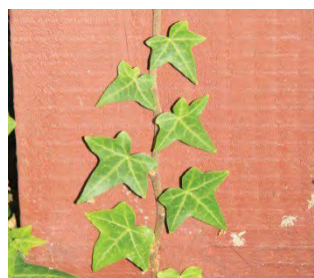
**Risk areas:** Ponds, lakes, drains and slow moving streams.

Can form deep underwater meadows, shading out smaller native species and prevents seedlings of native species establishing.

Production	Environmental	Public
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### English Ivy

*Hedera Helix*



Rampant, evergreen climber with stout woody stems that become erect at flowering, attaching to whatever is supporting it with aerial rootlets. Hairless dark green or variegated ivory-white leaves are variably shaped. Tiny, insignificant yellowish-green flowers are produced from March to May, followed by purple to black berries containing seeds with low viability. Birds readily spread seed when it is produced, but most spread is through pieces dumped with green waste.

**Risk areas:** Open lowland and montane forest and forest margins. Rocky land, fernland, coastline, cliffs, shrublands and tussockland.

Clings to and climbs almost any surface, can grow over forest floor, sub-canopy and canopy to great heights, forming dense, long-lived masses at a moderate to fast growth rate and completely smothering tree trunks and branches.

Production	Environmental	Public
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## Sustained control programme pests

### Gorse

*Ulex europaeus*



Introduced from Western Europe as a windbreak plant in the very early stages of European settlement, its spread and development as a weed was rapid. Settlers failed to recognise the threat. Gorse seed continued to be imported and plantings deliberately established into the 1900s.

Large, very prickly, woody, evergreen shrub growing up to 2 m-4 m tall with the shoots and leaves modified into green spines. Bright yellow pea-like flowers. Long purplish-brown seed pods which split explosively to disperse seeds. Very hardy and quick to both populate and regenerate.

**Risk areas:** River systems, shrublands, forest margins, coastline, tussock land, fernlands, wetlands, consolidated sand dunes, gumlands, cliffs, disturbed forest, exotic plantations, wasteland, poor pasture and bare land.

Gorse forms dense stands that exclude stock and replace pasture. It competes with plantation trees and old gorse is a fire risk, burning very easily and fiercely.

Production	Environmental	Public
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### Himalayan fairy grass

*Miscanthus nepalensis*



A tall tufted perennial grass which can grow up to 1m tall with stiff, gradually tapering leaf blades, rough margins, and an obvious pale green mid-rib. Drooping, fanshaped, golden-brown flowerheads (10 cm-20 cm long) are on a long stem and develops into a mass of wind-spread seeds (1 mm-1.5 mm). Himalayan fairygrass spreads easily from seed and from fragments of its root system, and forms dense infestations that crowd out other plants and prevent native species germinating. It spreads into natural areas from roadsides and wasteland, and also grows well on open cliffs. Forms dense infestations, and develops extensive root systems below the ground, making it hard to control.

**Risk areas:** Waste areas, roadsides, forest margins and open cliffs.

It can rapidly colonise disturbed or open areas, and can invade large areas of bushland after fire, outcompeting all native species.

Production	Environmental	Public
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## Sustained control programme pests

### Lantana

*Lantana camara*



Map 10 shows the area of the region that Lantana is to be managed as a sustained control pest. Lantana is also managed as an Eradication and progressive containment pest in other parts of the region.

Native to Central America. A many-branched, scrambling shrub 2 m-3 m tall, with scattered recurved prickles on the stems. Oval leaves, 5 cm-8 cm long, serrated and usually covered in rough hairs. Flower colours range from pink, yellow to orange and red.

**Risk areas:** Low and disturbed forest, open areas, coastal areas, forest margins, geothermal areas, pasture and exotic forests.

Lantana is a toxic plant that colonises coastal areas, forming dense thickets and displacing native vegetation. Is shade tolerant and may dominate the undergrowth of open forest.

Production	Environmental	Public
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### Male fern

*Dryopteris filix-mas*



Male fern is an erect fern with fronds approximately 150 cm in length, with the stipe (frond stalk) being less than 40cm in length and the lamina (leafy part of frond) being less than 125 cm long. The mid rib has scattered pale brown scales, the lamina are dark green above, paler below and are bi-pinnate (twice divided). The smallest leaflets (secondary pinnae) are toothed and round ended. Male fern is dispersed by water, soil and wind.

**Risk areas:** River and stream margins, rocky sites, regenerating shrublands, forest, pasture and plantations.

It outcompetes and replaces native fern and groundcover, and affect regeneration and succession.

Production	Environmental	Public
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## Sustained control programme pests

### Mile-a-minute

*Dipogon lignosus*



Evergreen, climbing vine with rounded, moderately hairy stems that are woody towards their base. Leaves are made up of three heart-shaped leaflets. Flowers are pea-like, coloured white to pink, lavender and white or reddish purple. The pods contain three to five seeds. Seeds drop near parent plants though most spread is via dumped vegetation. Birds can also spread seeds when they use the vine for nesting material.

Can rapidly smother low growing shrubs and regenerating forest canopy, eventually taking over completely.

Production

Environmental

Public

**Risk areas:** Forest margins, coastlines, cliffs, shrublands and limestone areas.

### Mistflower

*Ageratina riparia*



Erect or sprawling many-stemmed herb to 0.5 m-1.5 m with a perennial fibrous rootstock. Stems are usually purple and covered in purple-striped non-sticky hairs. They become woody with age. Willow-like leaves are coarsely serrated except near their base. From August to January clusters of small white flowers are produced, followed by black 5-angled seeds. Is long-lived, matures quickly and produces a number of highly viable, well-dispersed seed. Seed is spread long-distance by wind and water.

Grows very densely and overtops groundcover often causing sediment build up and impeding water flow.

Production

Environmental

Public

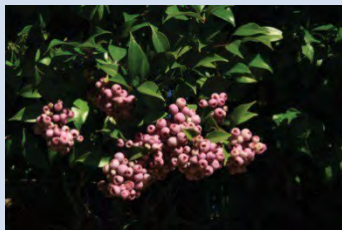
**Risk areas:** Damp forest and forest margins, intact or disturbed bush, light gaps, shrublands, wetlands, river and stream banks, islands, slips, alluvial flats, coastal and estuarine areas, and occasionally places where low growing epiphytes would usually grow.



## Sustained control programme pests

### Monkey apple

*Syzygium smithii*



An evergreen tree, 6 m-15 m high, with fragrant white flowers in late spring, followed by clusters of white to purple fruits. The leaves release an aromatic fragrance when crushed. A long-lived tree (100+ years) that produces a lot of seed that is well dispersed by birds (especially pigeons), soil movement also contributes to its spread.

**Risk areas:** Disturbed (occasionally intact) forests, shrublands and fernlands, often under pigeon roosts.

Forms dense carpets of seedlings which can grow to create pure stands of permanent canopy.

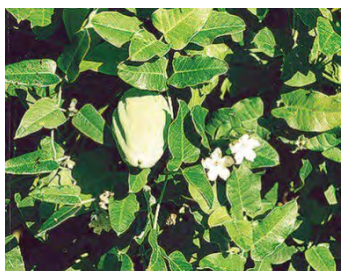
Production

Environmental

Public

### Moth plant

*Araujia hortorum*



Rampant, evergreen vine up to 10 m tall. Broken parts ooze a smelly, sticky, milky sap. White, fragrant, bell-shaped flowers develop into large, smooth, pear-shaped pods which contain many fluffy-headed, wind-borne, black seeds. Grows rapidly to canopy, forming large, heavy, long-lived masses. Produces masses of viable seed that can drift long distances in the wind which is the main form of spread.

**Risk areas:** Intact and disturbed forest and forest margins, tracks, coastline, cliffs, shrublands, mangroves, islands, almost any frost-free habitat.

Smothers and kills plants up into the canopy and prevents the establishment of native seedlings. Impacts butterflies by gumming up their feeding parts which can lead to starvation.

Production

Environmental

Public

## Sustained control programme pests

### Old man's beard

*Clematis vitalba*



Map 14 shows the area of the region that Old man's beard is to be managed as a sustained control pest. Old Man's beard is also managed as a progressive containment pest in other parts of the region.

Native to Europe and South West Asia. A large, climbing vine up to 30 m high. Compound leaves with five oval leaflets. Flowers are greenish-white and fragrant and the seed heads are grey fluffy balls that persist over winter.

**Risk areas:** Rock areas, all types of forest, forest margins, open areas, wasteland, home gardens, orchards.

Old man's beard smothers and kills all plants to the highest canopy, and prevents the establishment of native plant seedlings. Readily invades established forest.

Production	Environmental	Public
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## Sustained control programme pests

### Palm grass

*Setaria palmifolia*



Palm grass is a dense palm-like grass with dense root mass and tough rhizomes and rounded stems. It tolerates moderately cool temperatures, wind, salt, occasional submersion, wet and dry spots and is drought tolerant. It is spread by rhizomes and seed, occasionally aided by water movement. Slower spread occurs from gardens and through dumped garden waste. Often found in disturbed and open forest, shrubland, herbfield and bare harsh, hanging palm-like leaves are pleated and taper toward the point. Narrow seedheads with fuzzy, foxtail-like tips on long arching stems grow between December to March. It has tough rhizomes, is long-lived and forms pure stands. It can tolerate full sun to moderate shade and heavy to light soils.

It forms total ground cover and prevents growth establishment of other plants.

Production

Environmental

Public

**Risk areas:** Disturbed and open forest, shrublands, herbfields, bare land, semi-epiphyte niches and tree roots, mainly in low-frost areas.

Smothers ground in dense, long-lived stands.

Production

Environmental

Public

### Periwinkle

*Vinca major*



Prostrate, scrambling, hairless, evergreen perennial with trailing stems that can take root wherever they come into contact with the soil. Glossy, dark green or occasionally variegated leaves. Solitary, blue-violet, five-petalled flowers on short uprising stems are produced from January to December. Rhizomes, stem fragments and seeds are spread through dumped green waste and soil, and occasionally by water movement.

**Risk areas:** Margins of disturbed bush and shrublands, streamsides, coastlines, fernland, and rocky and bare land.

## Sustained control programme pests

### Ragwort

*Jacobaea vulgaris*



Native to Europe, Asia and Siberia. First recorded in New Zealand in 1874. A robust biennial or perennial, with deeply lobed leaves and bright yellow flowers occurring in dense, flat-topped clusters at the end of the stems.

**Risk areas:** Pasture, riverbeds, open forest, swamps, wasteland, amenity areas.

Alkaloid compounds in ragwort are poisonous and damage the liver of horses, cattle and deer. Generally well tolerated by sheep, although damage can occur after long exposure. The alkaloids also cause milk and honey taint.

Production	Environmental	Public
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### Reed sweet grass

*Glyceria maxima*



**Pest description:** Reed sweet grass is an aggressive, perennial, mat-forming grass which grow up to 2 m tall with fibrous roots and rhizomes and an erect or lax stem. It has soft, light green leaves (30 cm-60 cm in length and 2 cm in width) that have a membranous ligule. Its much-branched flowerhead has numerous spikelets that contains many seeds.

**Risk areas:** Wetlands, bogs, freshwater margins, lakes and streams in open frost-free areas.

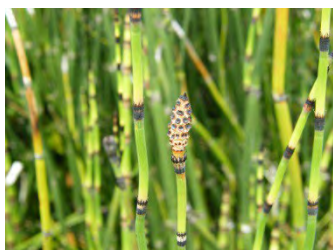
Forms dense monoculture in nutrient-rich bogs and water. It matures quickly, has rapid growth and overtops competitors. Forming dense mats it replaces other species and degrades habitats for native flora and fauna. Causes silt accumulation and flooding, and attracts cattle into wetlands causing further degradation.

Production	Environmental	Public
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## Sustained control programme pests

### Rough horsetail

*Equisetum hyemale*



Primitive fern, this plant stands erect with rigid hollow stems that feel hard and rough. Stems break easily at their joints. Leaves form spear-heads that encircle the joints with a distinctive black collar at the base of the joint. Spreads rapidly, resprouting from rhizomes that are hard to control. Is resistant to most herbicides.

**Risk areas:** Prefers moist areas such as gravel areas and pond/lake margins. Once established it will adapt to a wide range of conditions. It can even be found growing in the cracks of concrete.

Forms stands that block out native seedlings from establishing. Can grow into and over watercourses, sometimes altering them and leading to flooding.

Production	Environmental	Public
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### Royal fern

*Osmunda regalis*



Deciduous fern with short woody trunk up to 1.5 m. Fronds are tough, leathery and yellow green in colour. Spores are light brown and densely cover the plant. It tolerates frost, wet, shade and poor, acidic soils. Spores are widely distributed by wind.

**Risk areas:** Royal fern will grow in wetlands, swamps, and other damp areas.

It competes with native species in these niche environments. Significant issue in wetlands.

Production	Environmental	Public
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## Sustained control programme pests

### Self-propagated Phoenix palm

*Phoenix canariensis*



Phoenix palm is a large palm that can grow to 18 m tall. It has a thick, non-branching trunk with a diamond shaped pattern from old leaf scars and a large crown of foliage at the top of the trunk. It's long, stiff leaves (up to 1.8 m long) are made up of many leaflets that are dark green, lance shaped, pointed and the leaf stalk is covered with sharp spines (which can injure humans and animals) with a feathery appearance. Branched clusters of creamy yellow-white flowers open from a husk-like structure (October–November) and are followed by fleshy, date-like fruit, ripening from orange-yellow to dark purple in summer. It thrives in a variety of habitats and soil types, tolerating cold, drought, floods, shade and sun and salt spray, though it prefers sandy soils around coastal areas. It is spread by birds and water and has also been a popular landscaping plant in the past.

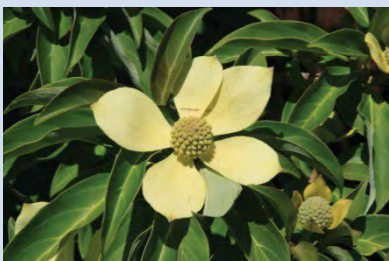
It displaces native trees through its sheer size and the growth of seedling can produce an impenetrable, long-lived sub-canopy. It reduces the water table and can alter dune form through sand build up around its roots and resulting in erosion elsewhere.

Production	Environmental	Public
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**Risk areas:** Sandy soil and other coastal sites, islands, urban areas (near amenity plantings), native habitats near urban areas where the species is common and water courses.

### Strawberry dogwood

*Cornus capitata*



A small evergreen tree up to 12 m tall with hairy branches when young that become hairless in time. Produces plentiful, pale-yellow flowers consisting of four large petal-like bracts from January to February, followed by large spherical fruit that ripen from pink to red. Grows rapidly, matures quickly and can produce a large number of seeds that are widely dispersed by birds.

Grows into dense thickets, crowding out understory species.

Production	Environmental	Public
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**Risk areas:** Shrublands, forest edges, disturbed forests, wetlands, riparian zones, grasslands and urban areas.

## Sustained control programme pests

### Sydney golden wattle

*Acacia longifolia*



Fast growing perennial shrub or small tree with sharply angled, hairless or sparsely angled twigs. Numerous small, puffy, pale golden flowers appear in cylindrical spikes from July–August, followed by cup-shaped seeds. Produces many long-lived seeds which are spread by soil and water movement. Tolerates a range of climatic conditions and can grow quite happily in exposed dunes. Does well in poor soils as it fixes its own nitrogen.

**Risk areas:** Shrubland, short tussockland, dry fernland, bare land, coastal areas, especially in warmer areas.

Forms extremely dense stands that prevent native species from establishing.

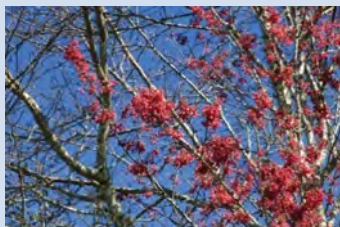
Production

Environmental

Public

### Taiwan cherry

*Prunus campanulata*



Small deciduous tree with a short trunk and narrowly spreading branches (branches nearly vertical when young). Thin leaves are rounded at base, broadly elliptic with sharp point at tip, and small teeth along entire leaf margin. Main veins on leaf are obvious and both surfaces are hairless. Bell-shaped flowers of magenta or pink to deep red, hang in clusters of one to five (July to September) and are followed by glossy scarlet cherries. Seed is long-lived and widely dispersed by birds.

**Risk areas:** Urban areas, disturbed forests and shrublands.

It forms dense long-lived stands in open or disturbed land that prevents the regeneration of other species.

Production

Environmental

Public

## Sustained control programme pests

### Wild ginger (kahili)

*Hedychium gardnerianum*



Native to South Africa. A large herb with erect, leafy stems 1 m-3 m in height. Leaves are elliptic-oblong, 20 cm-40 cm long and about 15 cm wide. Flower heads (25 cm-45 cm tall) with many fragrant, lemon-yellow flowers with conspicuous red stamens are produced from January to March and develop into fruiting spikes with fleshy orange fruits (15 mm-20 mm long) containing many bright scarlet seeds.

**Risk areas:** Forest, forest margins, open areas, swampy areas, wasteland, stream margins, home gardens, amenity areas.

Dense roots replace all other species, and are shallow rooted. When heavy with rain they slip on steep sites and streambanks, causing erosion.

Production	Environmental	Public
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*Hedychium flavescens*



Native to South Africa. Herbaceous perennial plants up to 2 m tall. Large, branching roots that form dense layers. Large wax-covered, lance-shaped leaves. Yellow ginger has cream to light yellow flowers (late autumn to early winter) and doesn't produce seeds.

**Risk areas:** Forest, forest margins, open areas, swampy areas, wasteland, stream margins, home gardens, amenity areas.

Forms dense colonies smothering native plants and preventing regeneration.

Production	Environmental	Public
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Sustained control programme pests

**Wilding conifer**

**Bishops pine**

*Pinus muricata*



Bishops pine is a small to medium-sized widespreading evergreen tree with a trunk that has bark that is purplish brown and deeply fissured into scaly plates. Its needle like leaves, up to 15 cm long, are slightly curved, greyish green to bluish green when fresh, and arranged in groups of two. Separate male and female cones are produced on the same plant. Male cones are small, 0.5 cm-1.5 cm long, and arranged in dense clusters. Mature female cones are long, 6 cm-9 cm long, persistent, very prickly, asymmetrical and wind dispersed.

**Risk areas:** Regenerating native bush, scrub.

Effects on soil by changing the soil nutrient cycles and therefore altering the plants which thrive in the soil following pine. *Pinus muricata* can harm biodiversity, particularly when it invades rare or threatened ecosystems such as geothermal areas. Because they are fire-adapted species and therefore burn quickly and readily in dry conditions, wilding pines pose a fire risk. Particularly in water sensitive catchments, wilding pines lower water yields.

Production	Environmental	Public
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**Corsican pine**

*Pinus nigra*



Corsican pine is a large pine tree, up to 40 m tall, with an open branching habit. It has dark brown bark that is fissured and forms scaly plates. The needles are held in pairs and are up to 19 cm in length, they are stiff, pointed, and grooved on the opposing sides of the pair. Mature female cones arise singly or in whorls of two to four and are 8 cm x 3 cm in size. Seeds are short-lived and dispersed by wind.

**Risk areas:** Indigenous and introduced scrub, tussock grassland, pasture and open forest.

Effects on soil by changing the soil nutrient cycles and therefore altering the plants which thrive in the soil following pine. *Pinus nigra* harms biodiversity particularly at high densities. Because they are fire-adapted species and therefore burn quickly and readily in dry conditions, wilding pines poses a fire risk. Particularly in water sensitive catchments, wilding pines lower water yields.

Production	Environmental	Public
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## Sustained control programme pests

### Douglas fir

*Pseudotsuga menziesii*



Douglas fir is a very large resinous evergreen pine tree with thick bark that is reddish-brown underneath, branches sit horizontally and branchlets usually droop. Douglas fir is lighter green compared to many of the other pine species. Needle like leaves are attached individually, whiteish underneath, and have edges that are often rolled, they give off an orange scent when crushed. Male cones are 12 mm-20 mm in length and catkin-like while female cones are papery cylinder shaped (5 cm-10 cm in length) and downward pointing. Seed is very light and capable of travelling large distances by wind and is capable of germinating under canopy in low light conditions, it is also viable for many years.

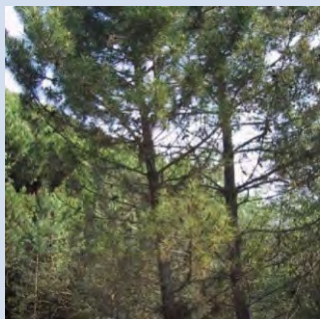
**Risk areas:** Douglas fir is still a valued production forestry tree, and many areas of wilding Douglas fir are caused by seed spread from neighbouring forestry blocks. Capable of establishing from lowland to subalpine habitats with low-moderate fertility and known to be a prolific seeder in parts of New Zealand.

Similar to pines, Douglas fir alters the soil nutrient cycling and soil ecosystem, thereby changing the plant communities. Because of its shade tolerance, Douglas fir can establish and thrive in a wide variety of ecosystems, including native forests. It therefore is a large threat to biodiversity.

Production	Environmental	Public
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### Maritime pine

*Pinus pinaster*



Maritime pine is a medium to large sized tree with an open crown and stout trunk that is bare of branches for most of its length and has thick, deeply fissured, dark red or reddish brown bark. Its needle like leaves, up to 17 cm in length, are rigid, pungent, dull green, and arranged in groups of two. Separate male and female cones are produced on the same tree. Male cones are small, up to 1.5 cm in length and arranged in dense clusters. Mature female cones are long, more or less symmetrical, persistent and 7 cm-15 cm long with a short stalk. Seeds are short-lived and dispersed by wind.

**Risk areas:** Regenerating native bush, scrublands, coastal areas, and geothermal systems.

Effects on soil by changing the soil nutrient cycles and therefore altering the plants which thrive in the soil following pine. *Pinus pinaster* can harm biodiversity, particularly when it invades rare or threatened ecosystems such as geothermal areas. Because they are fire-adapted species and therefore burn quickly and readily in dry conditions, wilding pines pose a fire risk. Particularly in water sensitive catchments, wilding pines lower water yields.

Production	Environmental	Public
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## Sustained control programme pests

### Ponderosa pine

*Pinus ponderosa*



Ponderosa pine is a medium to large tree, (exceeding 30 m in cultivation). Needles are 25 cm long, rigid, dull-green, in bunches of 3 projecting forward. Male cones are purple coloured up to 2 cm long in clusters on young shoots. Female cones are quite large (up to 14 cm x 10 cm), egg shaped and each scale has a small spiny tip. Seeds are dispersed by wind.

**Risk areas:** Indigenous and introduced scrub, tussock grassland, pasture and open forest.

Effects on soil by changing the soil nutrient cycles and therefore altering the plants which thrive in the soil following pine. *Pinus ponderosa* harms biodiversity particularly at high densities. Because they are fire-adapted species and therefore burn quickly and readily in dry conditions, wilding pines poses a fire risk. Particularly in water sensitive catchments, wilding pines lower water yields.

Production	Environmental	Public
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### Radiata pine

*Pinus radiata*



Medium to large tree (40 m-60 m in cultivation) that is the most commonly planted production forestry plant in New Zealand. Needles are slender, about 15 cm long, dark green and held in bunches of 3. Male cones are clustered at the ends of new shoots in spring, light-brown to pinkish. Female cones are 12 cm x 8 cm in size, brown and arranged in clusters of up to 6 and backwards pointing. Seed is produced annually, is wind dispersed and known to remain viable at 4 years.

**Risk areas:** Radiata is more commonly known for invading lowland and coastal areas (for example, dunelands, gumlands, and cliffs), but it also invades regenerating native bush, scrublands, and grasslands.

Effects on soil by changing the soil nutrient cycles and therefore altering the plants which thrive in the soil following pine. *Pinus radiata* can harm biodiversity, particularly when it invades rare or threatened ecosystems such as coastal dunelands. Because they are fire-adapted species and therefore burn quickly and readily in dry conditions, wilding pines poses a fire risk. Particularly in water sensitive catchments, wilding pines lower water yields.

Production	Environmental	Public
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## Sustained control programme pests

### Woolly nightshade

*Solanum mauritianum*



Map 12 shows the area of the region that Woolly nightshade is to be managed as a sustained control pest. Woolly nightshade is also managed as a progressive containment pest in other parts of the region.

Native to South America. Spreading, 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. Dense clusters of mauve to purple flowers, followed by clusters of round berries that ripen from green to dull yellow.

**Risk areas:** Forest margins, shrublands, coastal and estuarine margins, consolidated sand dunes, wetlands and roadsides.

Aggressive and fast growing woolly nightshade forms dense, often pure stands. Inhibits or prevents establishment of native plants seedlings and slows regeneration rate of native forests. The dust from the leaves and stems can irritate the skin, eyes, nose and throat. The berries are poisonous to humans if eaten, particularly to children, but also to cattle and pigs.

Production	Environmental	Public
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Table 10 Management regime for the sustained control programme.

<b>Objective</b>	Over the duration of the RPMP, reduce impacts to production, environmental and public values by controlling sustained control pests (listed in Table 9) in the Bay of Plenty and preventing unreasonable impacts from these pests spreading across property boundaries where neighbouring occupiers are actively managing the pest.
<b>Principal measures</b>	
<i>Requirement to act</i>	<p>Generic rules 6, 7 and 8 (see Table 12) will support the sustained control of pests listed in Table 9.</p> <p>Council will enforce sustained control rules as set out in Table 11 when required.</p> <p>Council and occupiers may develop pest management agreements.</p>
<i>Service delivery</i>	<p>Council may undertake management of sustained control pests as part of its biosecurity programme.</p> <p>Council will mediate between neighbours when required to ensure pest management between adjoining properties reflects equal effort.</p>
<i>Council inspection</i>	Council will follow up complaints received on sustained control pests and their management (or lack of).
<i>Advocacy and education</i>	<p>Council will advocate for the sustained control of these pests through its biodiversity protection agreements.</p> <p>Council will carry out programmes to increase public awareness of the sustained control programme and the responsibilities occupiers have in reducing the impact of these pests.</p> <p>Council will support ongoing science to advance effective pest management.</p>
<b>Monitoring</b>	
<i>Indicators</i>	<p>Number of reports and requests for advice made by the community.</p> <p>Number of pest management agreements initiated (including Memoranda of Understandings with Crown agencies and Crown entities).</p> <p>Number of complaints received about these pests.</p>
<i>Method of monitoring</i>	<p>Tracked through Council contact reporting.</p> <p>Complaints received.</p>
<i>Frequency of monitoring</i>	Annually where complaints have been received.
<i>Frequency of reporting</i>	Annually.
<b>Outcomes</b>	Impacts from these pests is managed to acceptable levels. The spread of these pests across boundaries is managed.

Table 11 Rules for sustained control pests.

Rules for sustained control pests	
<b>Rule 4</b>	<p>In areas where the following pests are included as sustained control pests:</p> <ul style="list-style-type: none"> <li>• Blackberry (entire region)</li> <li>• Ragwort (entire region)</li> <li>• Gorse (entire region)</li> </ul> <p>Occupiers must destroy these pests either:</p> <ol style="list-style-type: none"> <li>1 Within 10 m of any property boundary where the adjoining occupier is also destroying blackberry, ragwort and/or gorse within 10 m of the boundary, or</li> <li>2 If required by a written direction from an authorised person.</li> </ol> <p>Occupiers must comply with Rule 4 unless a property specific pest management agreement has been agreed and signed between the occupier and the Council.</p>
<b>Rule 5</b>	<p>In areas where the following pests are included as sustained control pests:</p> <ul style="list-style-type: none"> <li>• Climbing asparagus (entire region)</li> <li>• Climbing spindle berry (Map 13)</li> <li>• Lantana (Map 10)</li> <li>• Reed sweet grass (entire region)</li> <li>• Old man's beard (Map 14)</li> <li>• Woolly nightshade (Map 12)</li> <li>• Douglas fir (entire region)</li> <li>• Bishops pine (entire region)</li> <li>• Maritime pine (entire region)</li> <li>• Ponderosa pine (entire region)</li> <li>• Corsican pine (entire region)</li> <li>• Radiata pine (entire region)</li> <li>• Wild ginger (entire region)</li> </ul> <p>Occupiers must destroy these pests, either:</p> <ol style="list-style-type: none"> <li>1 Within 200 m of any property boundary where the adjoining occupier is also destroying climbing asparagus, climbing spindle berry, lantana, reed sweet grass, old man's beard, woolly nightshade, douglas fir, bishops pine, maritime pine, ponderosa pine, corsican pine, radiata pine and wild ginger within 200 m of the boundary, or</li> <li>2 If required by a written direction from an authorised person.</li> </ol> <p>Occupiers must comply with Rule 5 unless a property specific pest management agreement has been agreed and signed between the occupier and the Council.</p>

## Rules for sustained control pests

### Rule 5A

In areas where the following pests are included as sustained control pests:

- African club moss (entire region)
- Banana passionfruit (entire region)
- Cape ivy (entire region)
- Cathedral bells (entire region)
- Chilean rhubarb (entire region)
- Chinese windmill palm (entire region)
- Chocolate vine (entire region)
- Coastal banksia (entire region)
- Cotoneaster (entire region)
- English Ivy (entire region)
- Himalayan fairy grass (entire region)
- Male fern (entire region)
- Mile-a-minute (entire region)
- Mistflower (entire region)
- Monkey apple (entire region)
- Moth plant (entire region)
- Palm grass (entire region)
- Periwinkle (entire region)
- Rough horsetail (entire region)
- Royal fern (entire region)
- Self-propagated Phoenix Palm (entire region)
- Strawberry dogwood (entire region)
- Sydney golden wattle (entire region)
- Taiwan cherry (entire region)

1 Occupiers must destroy these pests if required by a written direction from an authorised person.

Occupiers must comply with Rule 5A unless a property specific pest management agreement has been agreed and signed between the occupier and the Council.

To manage sustained control programme pests, generic rules 6, 7, 8 and 9 also apply.

### Advisory Note

A breach of any rules for sustained control programme pests creates an offence under section 154N (19) of the Biosecurity Act 1993.

## Rules for sustained control pests

### Explanation

Rule 4 supports a good neighbour approach in that if one neighbour is actively managing a plant pest, their efforts should not be undermined by the inaction of their neighbours. These rules are not good neighbour rules as defined by the Biosecurity Act 1993 and therefore do not bind the Crown. Council considers this rule is for boundary control purposes and would only act on a complaint from a compliant neighbour. Whilst seed dispersal mechanisms can include seed drop, bird and wind, the distance of 10 m reflects a primary pest spread dispersal mechanism for seed drop.

Like Rule 4, Rule 5 supports a good neighbour approach but the larger distance of 200 m reflects the primary pest spread dispersal mechanisms are more likely to be wind, bird and water. Whilst these dispersal mechanisms may spread pests up to several kilometres, Council thinks 200 m is a practical and pragmatic distance for a boundary control approach.

Rules 4(2) and 5(2) and Rule 5A(1), support action if Council deems action is required. A need for action may be triggered by a significant increase in pest infestation and their impacts, a strategic site identified by Council (e.g. adjoining a place with high values), an elevated risk of spread, complaints from compliant neighbours, and/or that pest is being actively managed in the subject or a neighbouring area by Council, other agencies or community groups.

With regards to management of wilding conifers listed in Rule 5, Council will align its requirements for action with those being implemented through the New Zealand Wilding Conifer Management Strategy.

In some instances, pest management agreements may offer a more pragmatic alternative approach and provide for joint pest management. These agreements may take into account:

- Complexity and equitability issues associated with the history and timing of plant pest infestation and sources. For example, many original *contorta* sources are legacy Crown plantings or historic shelter and amenity plantings and some wilding conifer sources have been legally established (under the RMA) with no legal obligation to manage wilding conifer spread.
- Some pest infestations are due to the actions/inactions of previous occupiers.
- In some areas it may be unreasonable to expect adjoining landowners to control pests (e.g. steep topography).
- Complex land ownership issues.

Sustained control pests that are not managed by these rules are still subject to provisions in the Biosecurity Act 1993 as they are listed as pests in this RPMP and also managed through generic rules 6, 7, 8 and 9 of this RPMP.



## 6.5 Generic rules for pests listed in this Regional Pest Management Plan/ Ngā ture noa mō ngā kīrearea kei roto i tēnei Mahere Patu Kīrearea ā-Rohe

Table 12 Generic rules for pests listed in the exclusion, eradication, progressive containment or sustained control programme of this RPMP.

Rule	Generic rules for pests listed in the exclusion, eradication, progressive containment or sustained control programmes of this RPMP
<b>Rule 6</b>	<p>No person shall:</p> <ol style="list-style-type: none"> <li>1 Move or interfere with any article or substance left in place by an authorised person for the purpose of monitoring, controlling, or eradicating a pest listed in this RPMP, or</li> <li>2 Move, or allow to be moved, any live pest listed in this RPMP, or any machinery, vessel, organism or goods that are contaminated with any pest listed in this RPMP, or</li> <li>3 Keep, plant, propagate, distribute or release any pest listed in this RPMP or assist in their maintenance including tending, feeding or sheltering them.</li> </ol> <p>This is to protect production, environmental and public values that can be adversely affected by pests.</p>
<b>Rule 7</b>	<p>To avoid the spread of freshwater fish pests and freshwater plant pests, the following provisions apply:</p> <ol style="list-style-type: none"> <li>1 No person shall leave boat trailers in any water body other than for the purposes of launching and/or retrieving boats.</li> <li>2 No person shall transport ballast water from any water body to any other location.</li> <li>3 All occupiers of vessels or craft entering any water body within the Bay of Plenty shall ensure their vessels or craft (including trailers) are free from freshwater pest fish and freshwater pest plants including fragments.</li> <li>4 All occupiers of vessels or craft using a boat ramp with a self-certification checkpoint must complete a supplied certification form*. Before launching, the self-certification form must either be submitted electronically or displayed in the vehicle used to launch the vessel or craft.</li> </ol> <p>This is to protect production, environmental and public values that can be adversely affected by freshwater fish pests and freshwater plant pests.</p> <p>*Electronic self-certification forms are available at <a href="http://www.boprc.govt.nz/ccd-self-cert">www.boprc.govt.nz/ccd-self-cert</a>. Paper self-certification forms are available either at the self-certification checkpoint or the Bay of Plenty Regional Council offices.</p>
<b>Rule 8</b>	<p>All persons must notify Council once they become aware they have received products contaminated by marine pests.</p> <p>This is to protect production, environmental and public values that can adversely be affected by marine pests.</p>
<b>Rule 9</b>	<p>Occupiers shall destroy all wilding conifers on land they occupy, prior to cone bearing, if:</p> <ol style="list-style-type: none"> <li>1 The wilding conifers are located within an area which has had control operations carried out to destroy wilding conifers, and</li> <li>2 The control operations were publicly funded (either in full or in part).</li> </ol> <p>This is to protect production, environment and public values that can be adversely affected by wilding conifers.</p>
<b>Advisory Note</b>	<p>A breach of a rule included within the Regional Pest Management Plan creates an offence under section 154N (19) of the Biosecurity Act 1993.</p>

Rule	Generic rules for pests listed in the exclusion, eradication, progressive containment or sustained control programmes of this RPMP
<b>Explanation</b>	<p>These generic rules provide a starting point to manage pests in the region and will contribute to achieving the objectives in the RPMP by protecting public, environmental and production values from adverse effects.</p> <p>Rule 6 applies to all pests listed in this RPMP. This rule is a catchall rule that supports all the objectives and adverse effects outlined in this RPMP. It seeks to manage human actions that distribute, move and spread pests within the region. Rules 6(1) and 6(2) reinforce the intent of ss52 and 53 in the Biosecurity Act 1993. Rule 6(3) restricts human intervention that may support pest populations.</p> <p>Rule 7 focuses on the possible spread of aquatic plant pests and freshwater fish pests between our waterbodies, especially the Rotorua lakes. It represents a pathway approach in that it focuses on a known pathway that spreads pests i.e. boats and trailers. Council will work proactively to ensure compliance with Rule 7.</p> <p>Rule 8 supports Council led management of marine pests. If Council is made aware of the presence of a pest/contaminated product, then they can undertake appropriate management and disposal of pests and/or contaminated products.</p> <p>Rule 9 ensures that new infestations of wilding conifers are prevented at sites where wilding conifers have previously been destroyed through publicly funded control operations. The expectation is that funding is accepted with a level of occupier responsibility for future maintenance control. The rule will be administered by the Council and any action pertaining to non-compliance will only be initiated upon the receipt of a written complaint from an adjacent or nearby land occupier.</p> <p>Other rules in the RPMP apply to specific pests and their management.</p>

## **7 Monitoring/Te aroturuki**

### **7.1 Measuring what the objectives are achieving/Te tātai he aha e whakatutukihia ana e ngā whāinga**

Anticipated results, indicators, methods of monitoring, frequency of monitoring and reporting are included in the management regime for each programme.

### **7.2 Monitoring the management agency's performance/Te aroturuki i ngā mahi a te tari whakahaere**

Bay of Plenty Regional Council is the management agency. As the management agency responsible for implementing the RPMP, the Bay of Plenty Regional Council will:

- (a) prepare an operational plan within three months of this RPMP being approved,
- (b) review the operational plan, and amend it if needed,
- (c) report on the operational plan each year, within five months after the end of each financial year,
- (d) establish a programme to implement the RPMP in line with the operational plan, and
- (e) maintain up-to-date databases of complaints, pest levels and densities, and responses from Council and landowners and/or occupiers as well as information or complaints received from neighbours, iwi, stakeholders, industry, lead agencies and key interest groups. This is not limited to pests included in this RPMP.

### **7.3 Monitoring plan effectiveness/Te aroturuki i te whaihua o te mahere**

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

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

If the RPMP does not need to be reviewed under such circumstances, it will be reviewed in line with s100D of the Biosecurity Act 1993. Such a review may extend, amend or revoke the RPMP, or leave it unchanged.

The procedures to review the plan will involve officers of Bay of Plenty Regional Council:

- (i) assessing the efficiency and effectiveness of the principal measures (specified for each pest and other organism (or pest group or organisms) to be controlled) to achieve the objectives of the RPMP,
- (ii) assessing the impact that the pest or organism (covered by this RPMP) has on the region and any other harmful organisms that should be considered for inclusion in the RPMP, and
- (iii) liaising with iwi, stakeholders, industry, lead agencies and key interest groups on the effectiveness of the RPMP.

## 8 Procedures/Ngā hātepe

### 8.1 Powers conferred/Ngā mana tuku

#### 8.1.1 Powers of authorised persons under Part 6 of the Act/Ngā mana o ngā tāngata whai mana i raro i te Wāhanga 6 o te Ture

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

Bay of Plenty Regional Council will use those statutory powers of Part 6 of the Act as shown in Table 13, where necessary, to help implement this Plan.

Table 13: Powers from the Biosecurity Act 1993 to be used.

Administrative provision	Biosecurity Act 1993 reference
Duty to provide information	Section 43
Exemption from rules	Section 78 (see exemption definition in glossary)
The appointment of authorised and accredited persons	Section 103(3) and (7)
Delegation to authorised persons	Section 105
Power to require assistance	Section 106
Power of inspections and duties	Sections 109, 110 and 112
Power to record information	Section 113
General powers	Sections 114 and 114A
Use of dogs and devices	Section 115
Power to seize evidence	Section 118
Power to seize abandoned goods	Section 119
Power to intercept risk goods	Section 120
Power to examine organisms	Section 121
Power to give directions	Section 122
Power to apply article or substance to place	Section 121A
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 Bay of Plenty Regional Council's Pest Management Procedures Manual for Authorised Persons sets out the procedures the Bay of Plenty Regional Council will follow when occupiers or other persons do not comply with the rules or other general duties.

## **8.2 Powers under other sections of the Biosecurity Act 1993/Ngā mana i raro i ētahi atu wāhanga o te Ture**

An occupier or any person in breach of an RPMP rule creates an offence under s154N(19) of the Biosecurity Act 1993, where the rule provides for this. Bay of Plenty Regional 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 Biosecurity Act 1993) must be enforced. Another example is where occupiers of land are asked for information (under s43 of the Biosecurity Act 1993).

## **8.3 Power to issue exemptions to RPMP rules/Te mana ki te tuku āweretanga ki ngā ture mahere**

Any occupier or other person may write to Bay of Plenty Regional Council to seek an exemption from any provision of an RPMP rule set out in the RPMP.

The requirements in s78 of the Biosecurity Act 1993 must be met for a person to be granted an exemption. Council's operating procedures must also note those requirements in full.

Bay of Plenty Regional 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/Te tuku pūtea

### 9.1 Introduction/Kupu whakataki

The Biosecurity Act 1993 requires that funding is thoroughly examined. This includes the reason for, and source of, all funding.

### 9.2 Analysis of benefits and costs/He tātaritanga o ngā painga me ngā utu

An assessment of the expected benefits and costs associated with implementing this Plan has been undertaken. This assessment is contained in *Regional Pest Management Plan for the Bay of Plenty region: Meeting the Biosecurity Act requirement*, published alongside this document.

### 9.3 Beneficiaries and exacerbators/Te hunga whai hua me te hunga whakakino ake

An analysis of the expected beneficiaries (those who benefit from the pest being controlled) and exacerbators (those who contribute to the pest problem) associated with implementing the RPMP has been undertaken. This analysis is also contained in the *Regional Pest Management Plan for the Bay of Plenty region: Meeting the Biosecurity Act requirements* report.

### 9.4 Funding sources and reasons for funding/Ngā puna pūtea me ngā pūtake mō te tuku pūtea

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

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

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

In general, efficiency is best achieved by targeting costs to those closest to a particular work where those paying can act in respect of those works. If the person deciding has to pay for the results of their action or inaction, they may change their behaviour to minimise costs.

Doing so would lead to the least-cost outcome for society. But if another person pays those costs, the incentive to change behaviour is minimal. This may lead to a higher cost for society. Efficiency includes close targeting of costs to benefits and to those contributing to the problem (exacerbators). Where a collective public good is the primary benefit of the programme, the regional community may reasonably bear some costs in achieving the outcome through a general rate. Equity is difficult to establish, particularly if a “public good” component exists. In general, no relevant guidelines are available.

Funding sources have been considered in the *Regional Pest Management Plan for the Bay of Plenty region: Meeting the Biosecurity Act requirements* report. Pest management programmes will largely be funded through general rates as the regional community is considered a significant beneficiary of pest management. Landowners and occupiers will bear some costs of pest management through rule compliance.

## 9.5 Anticipated costs of implementing the RPMP/Ngā utu e tūmanakohia ana mō te whakatinana i te mahere

The anticipated costs for implementing the full suite of programmes contained in the RPMP is \$5.7 million per annum. This total reflects a best estimate of expenditure levels.

Funding levels were examined and set during Long Term Plan and Annual Plan processes. The funding of the implementation of this RPMP is from a region-wide general rate set and assessed under the Local Government (Rating) Act 2002, and in determining this the Bay of Plenty Regional Council has had regard to those matters outlined in Section 100T of the Biosecurity Act 1993.

The allocation of costs and breakdown for each pest management programme is provided below.

Table 14 Allocation of costs for each programme.

Programme: Exclusion		
Principal measures	% of funding	Funding*
Inspection	50%	\$278,502
Service delivery	5%	\$27,850
Advocacy and education	35%	\$194,952
Partnerships	10%	\$55,700
<b>Total</b>	<b>100%</b>	<b>\$557,005</b>
Programme: Eradication		
Principal measures	% of funding	Funding
Inspection	40%	\$384,612
Service delivery	35%	\$336,535
Advocacy and education	15%	\$144,229
Partnerships	10%	\$96,153
<b>Total</b>	<b>100%</b>	<b>\$961,529</b>
Programme: Progressive containment		
Principal measures	% of funding	Funding
Inspection	45%	\$992,919
Service delivery	30%	\$661,946
Advocacy and education	15%	\$330,973
Partnerships	10%	\$220,649
<b>Total</b>	<b>100%</b>	<b>\$2,206,486</b>
Programme: Sustained control		
Principal measures	% of funding	Funding
Inspection	70%	\$768,456
Service delivery	5%	\$54,890
Advocacy and education	15%	\$164,669
Partnerships	10%	\$109,779
<b>Total</b>	<b>100%</b>	<b>\$1,097,794</b>



<b>Programme: General support</b>		
<b>Principal measures</b>	<b>% of funding</b>	<b>Funding</b>
Inspection	10%	\$106,719
Service delivery	5%	\$53,359
Advocacy and education	35%	\$373,515
Partnerships	50%	\$533,593
<b>Total</b>	<b>100%</b>	<b>\$1,067,185</b>

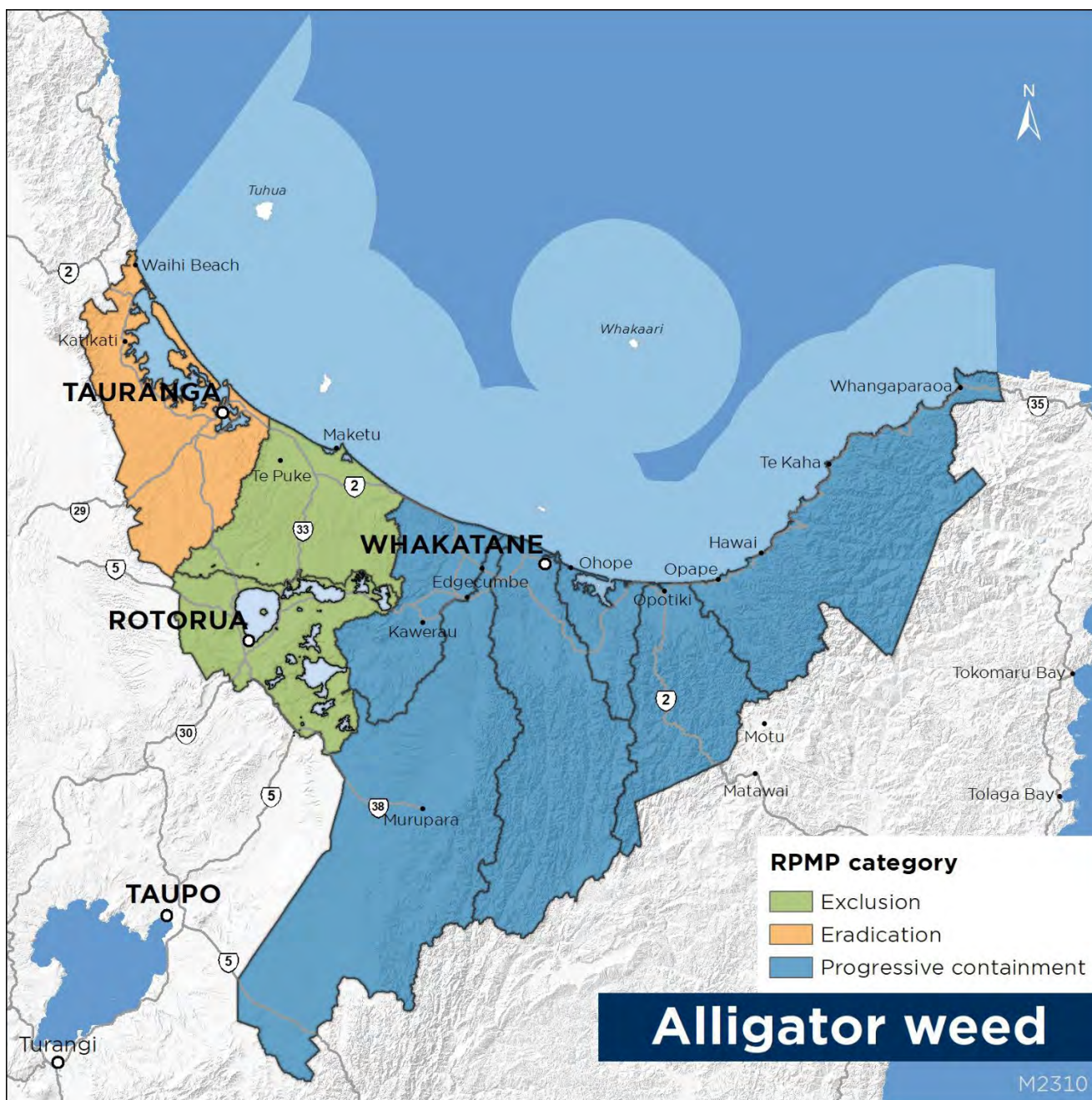
\*Funding based on 2020/21 Annual Plan

For more information about funding options see the accompanying *Regional Pest Management Plan for the Bay of Plenty region: Meeting the Biosecurity Act Requirements Report*.

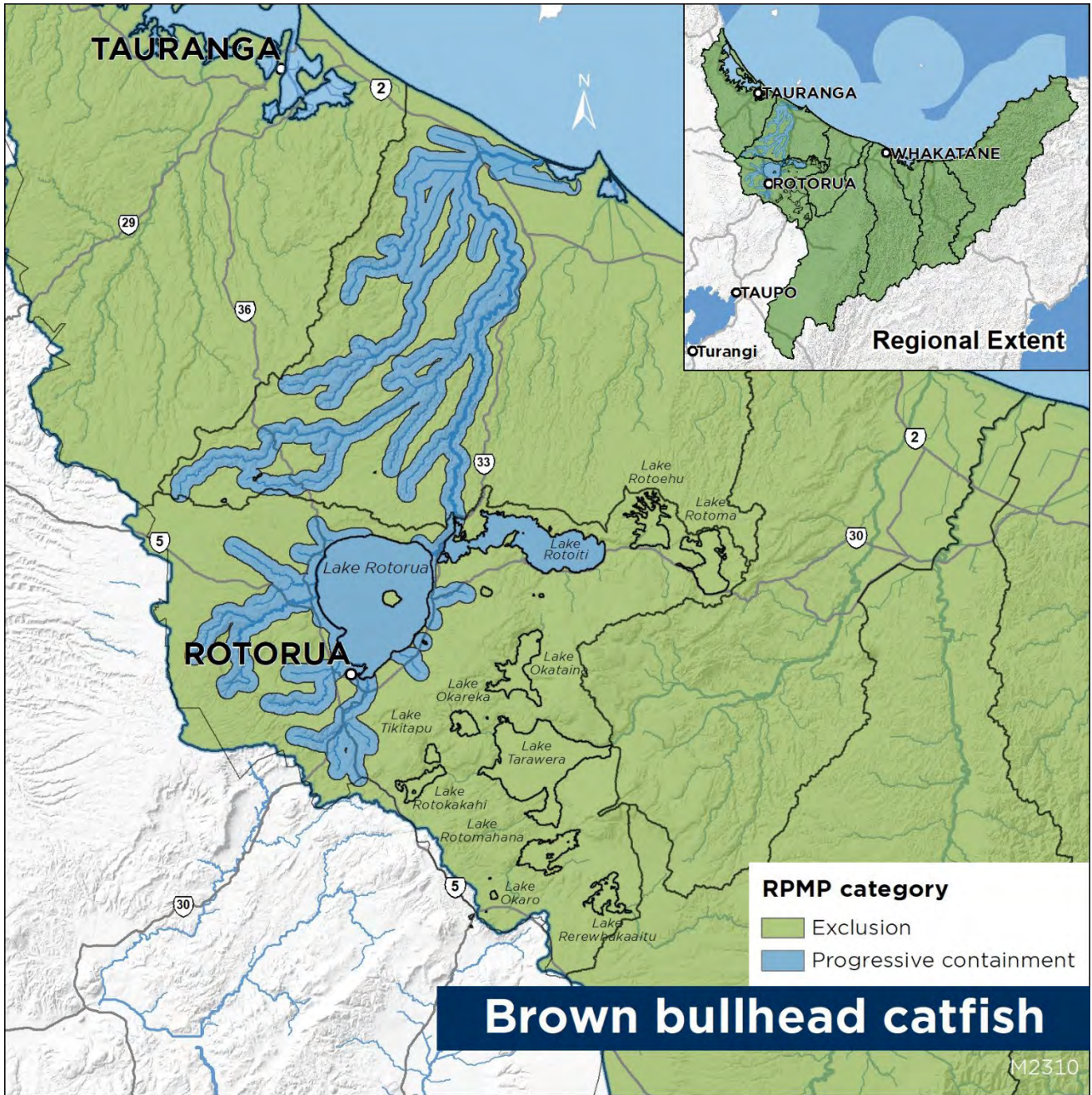


# Maps

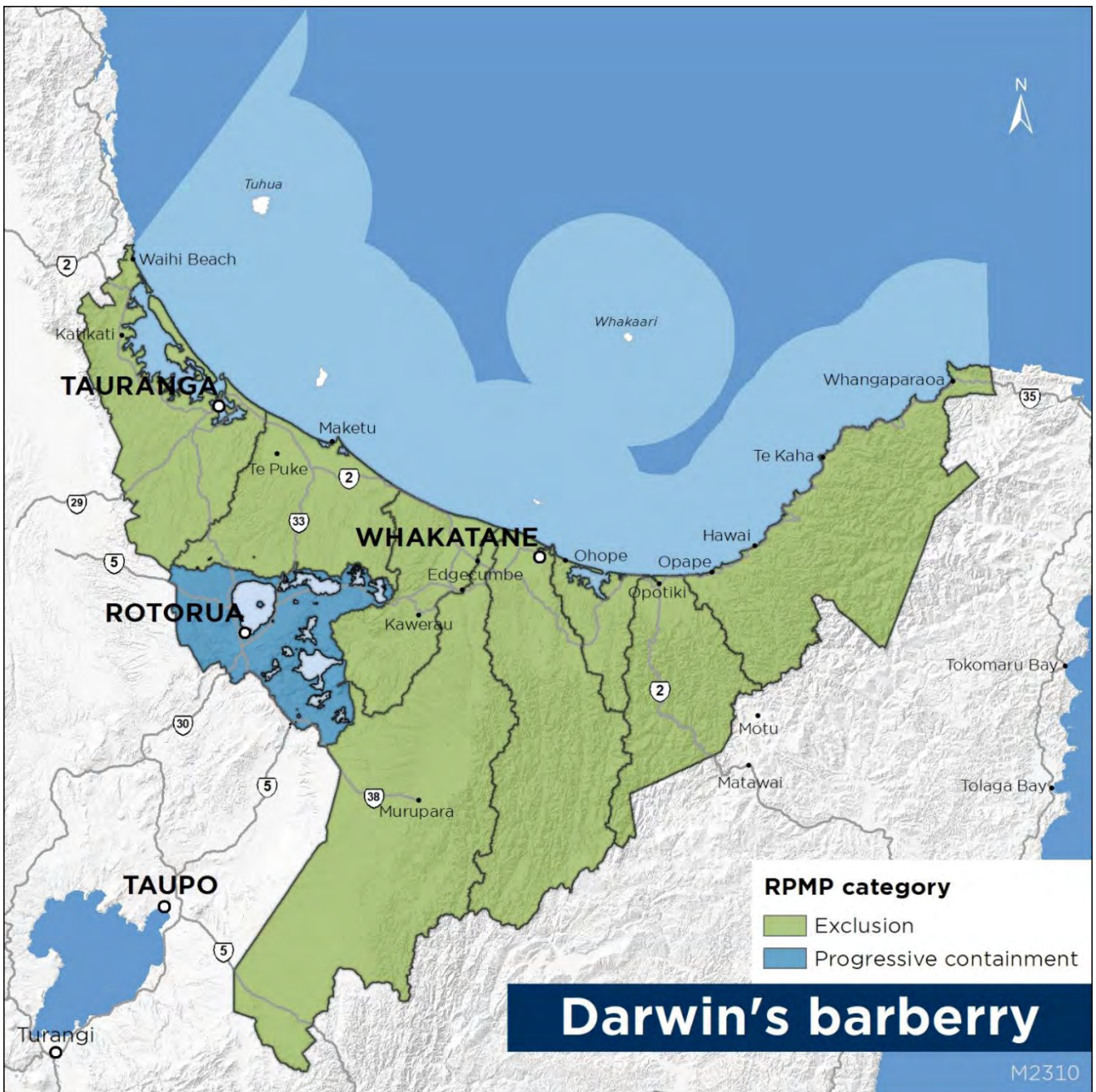
Map 1 – Alligator weed



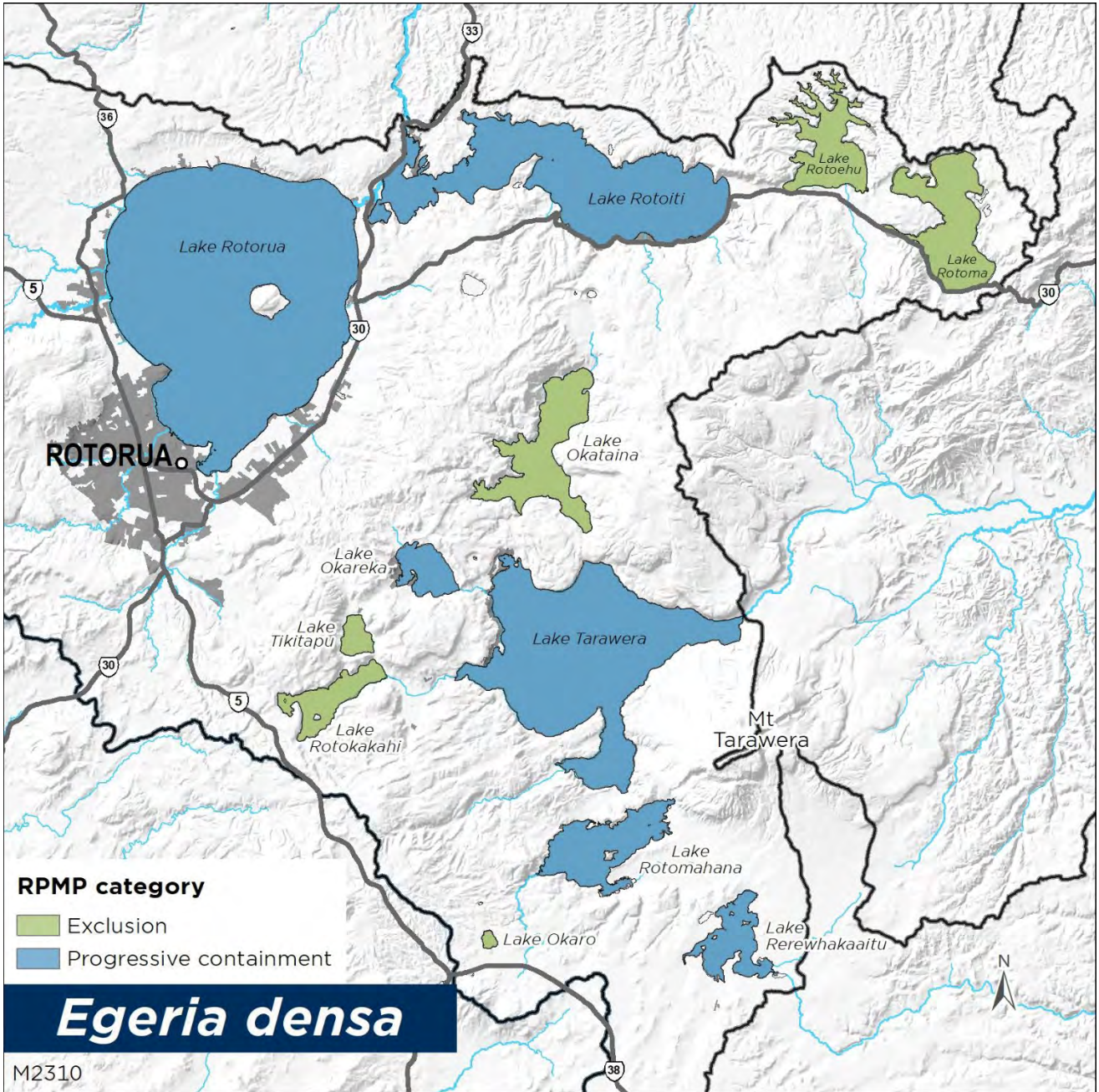
Map 2 – Catfish (Brown bullhead catfish)



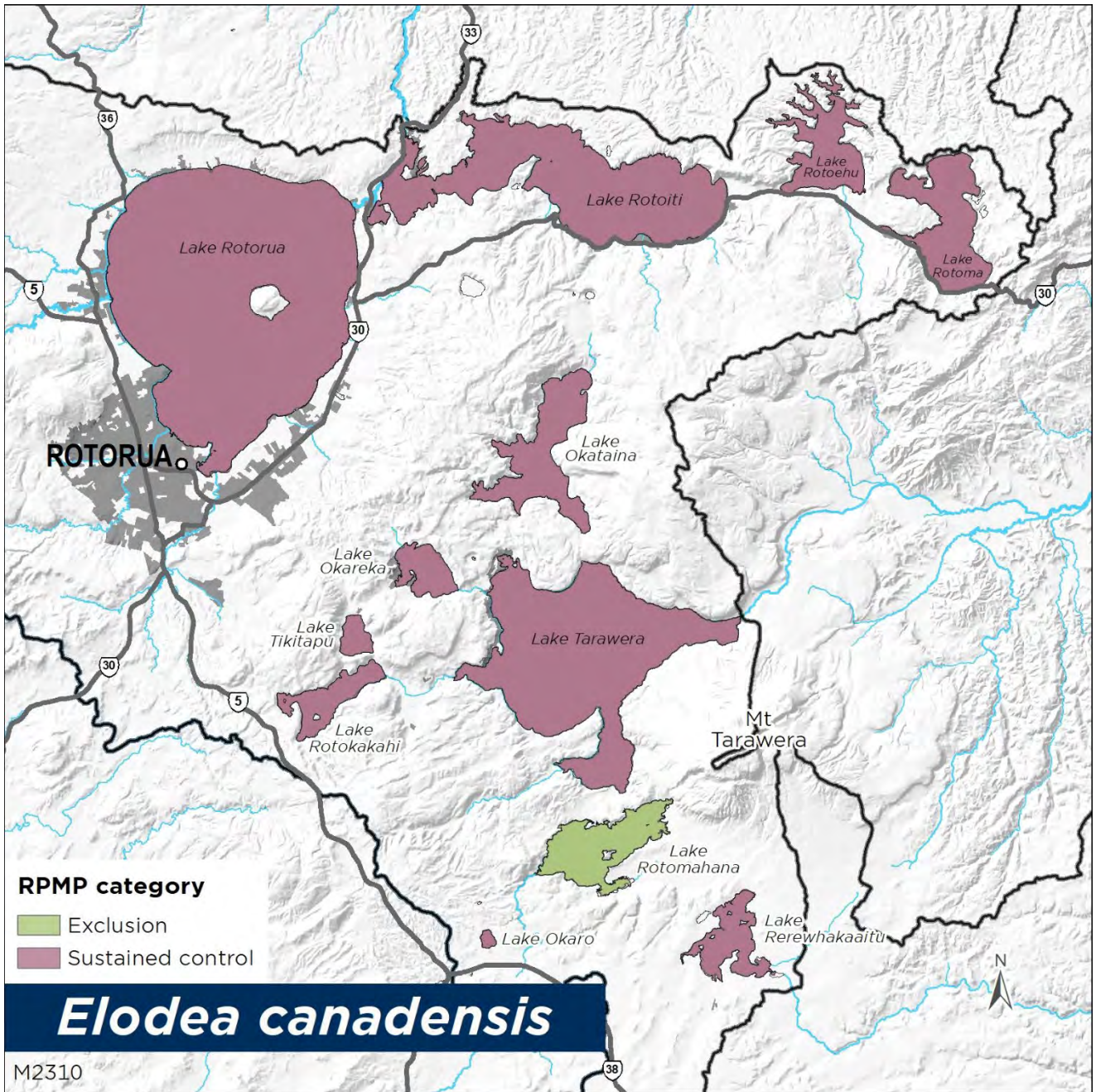
Map 3 – Darwin's barberry



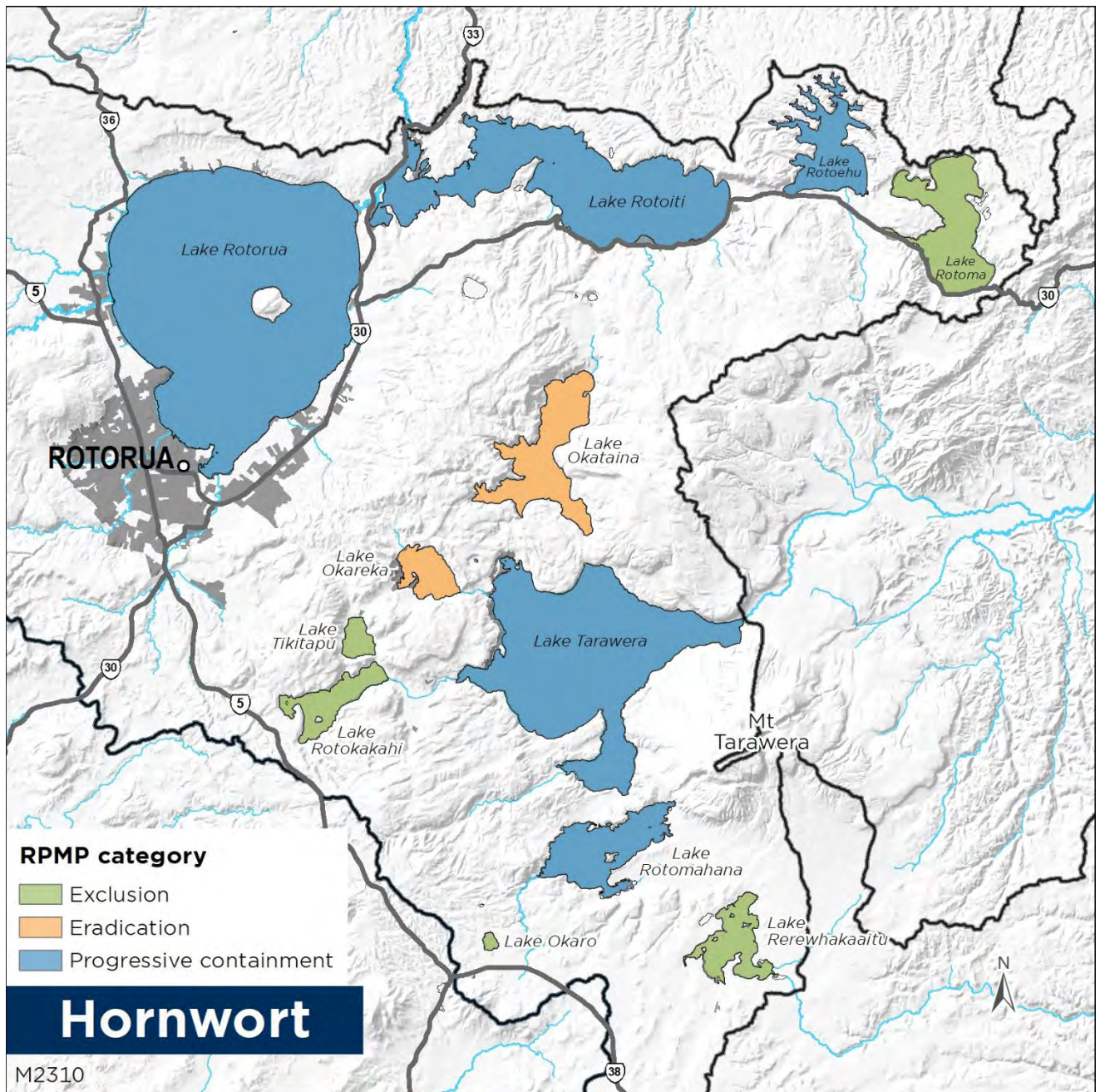
Map 4 – Egeria



Map 5 – Elodea

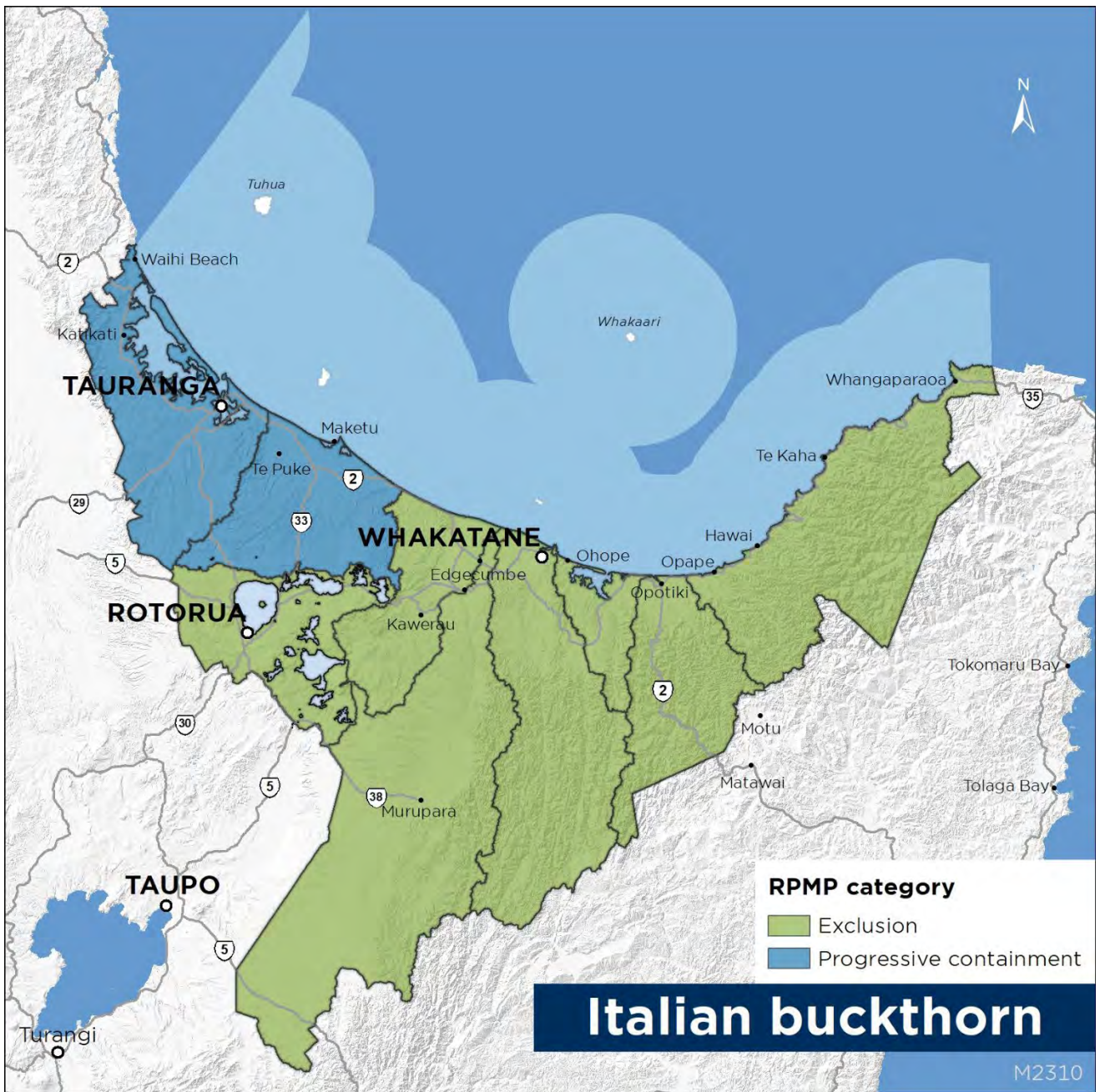


## Map 6 – Hornwort

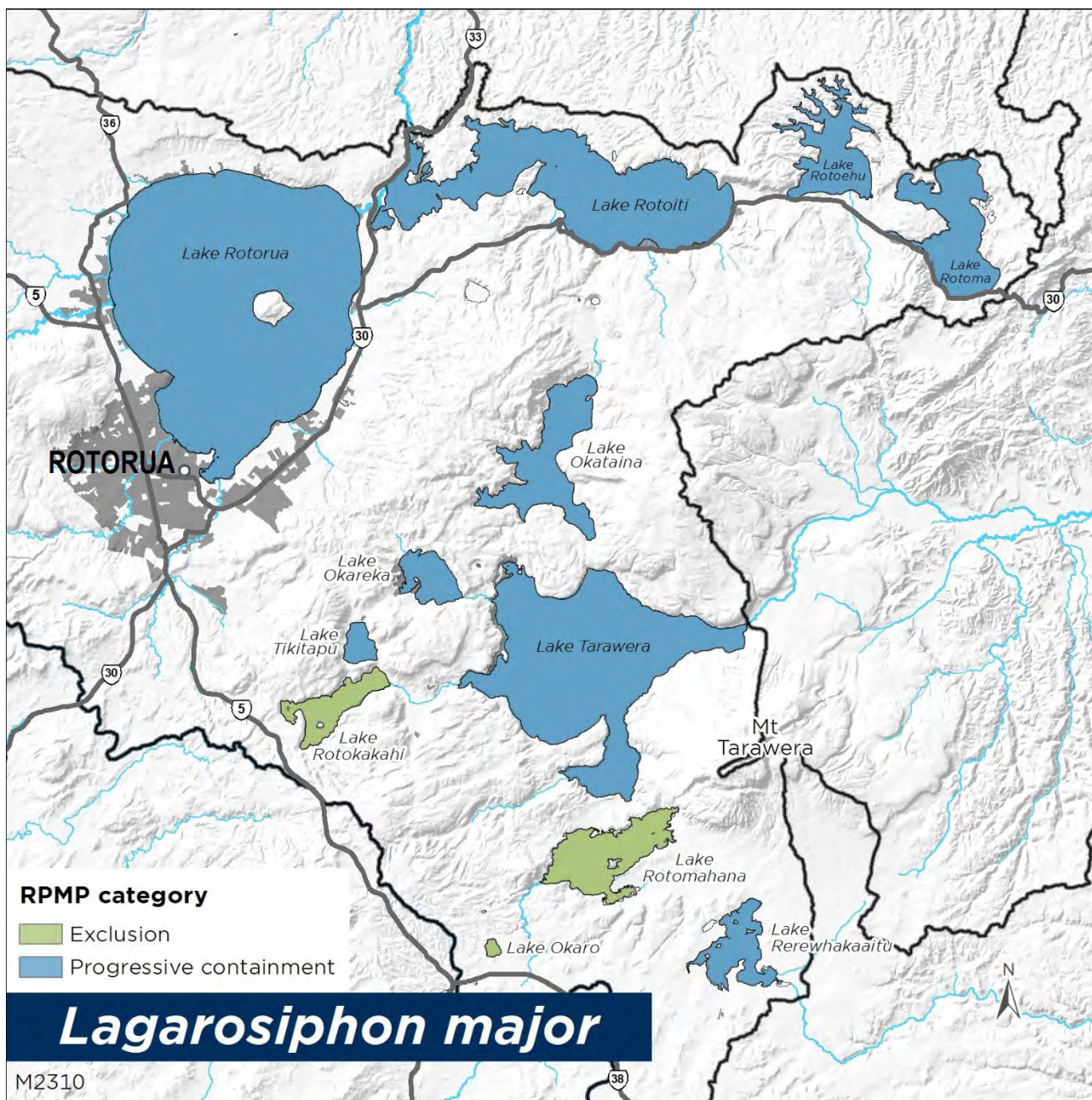




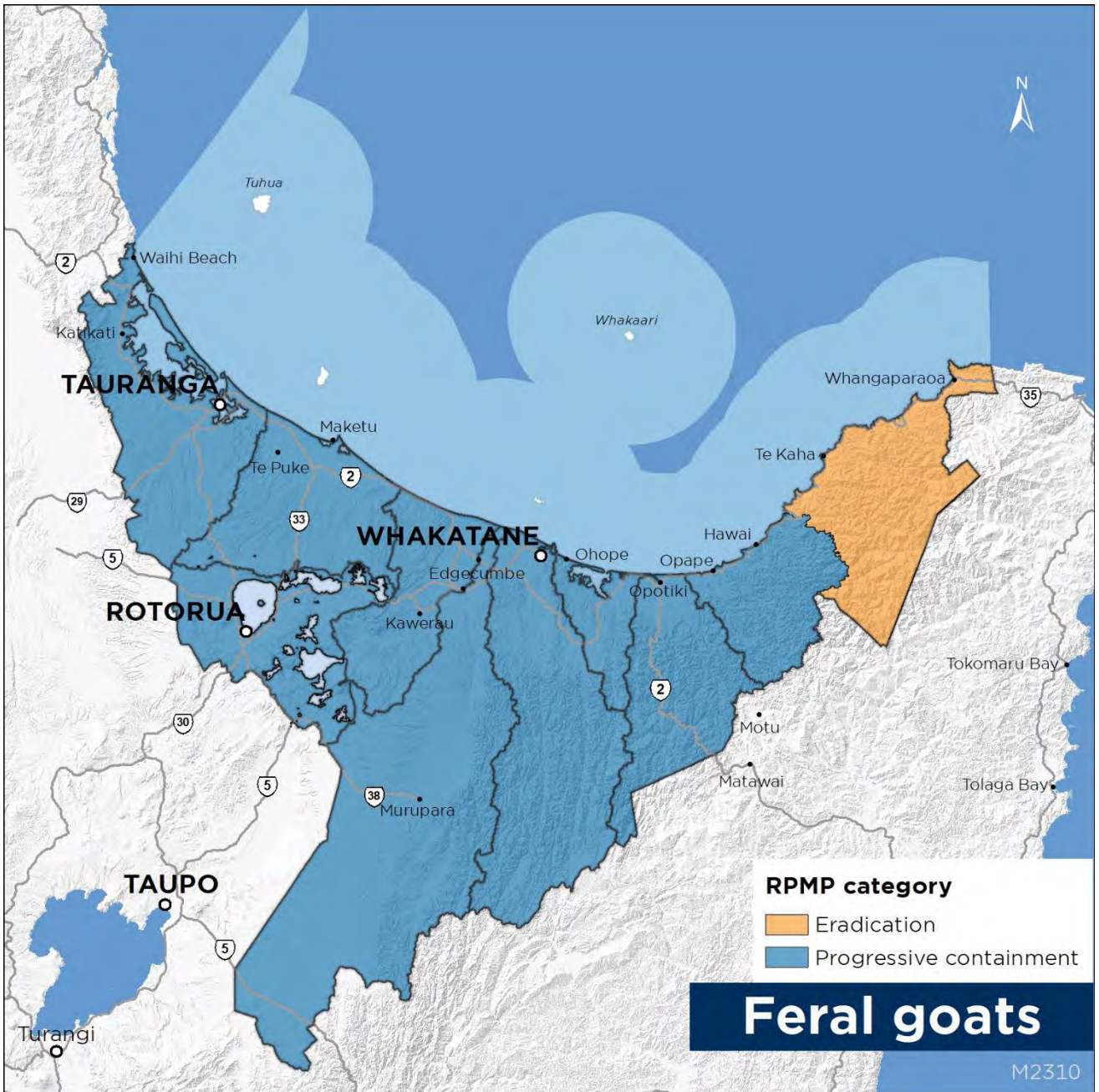
Map 7 – Italian buckthorn



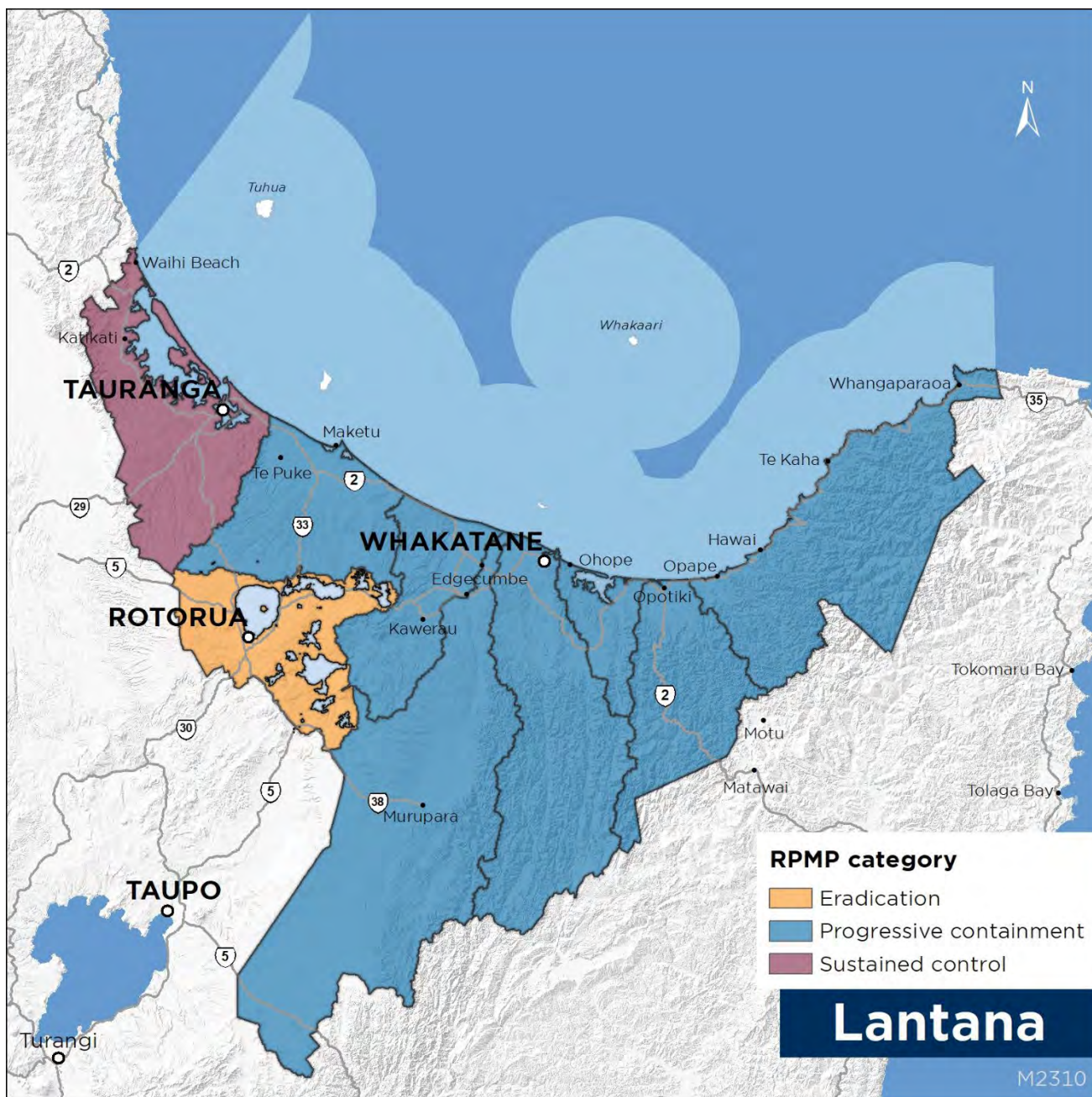
## Map 8 – Lagarosiphon



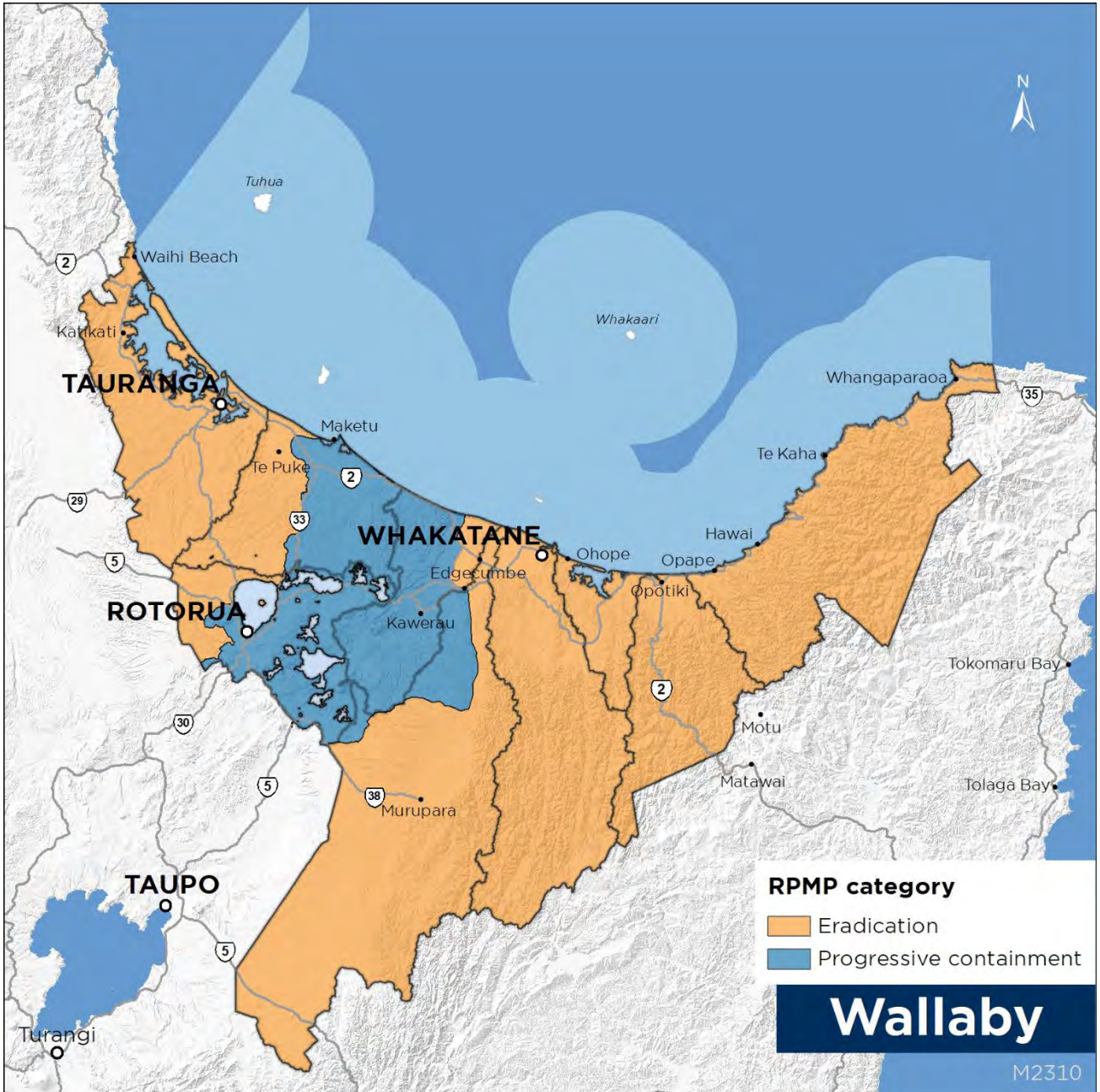
## Map 9 – Feral goats



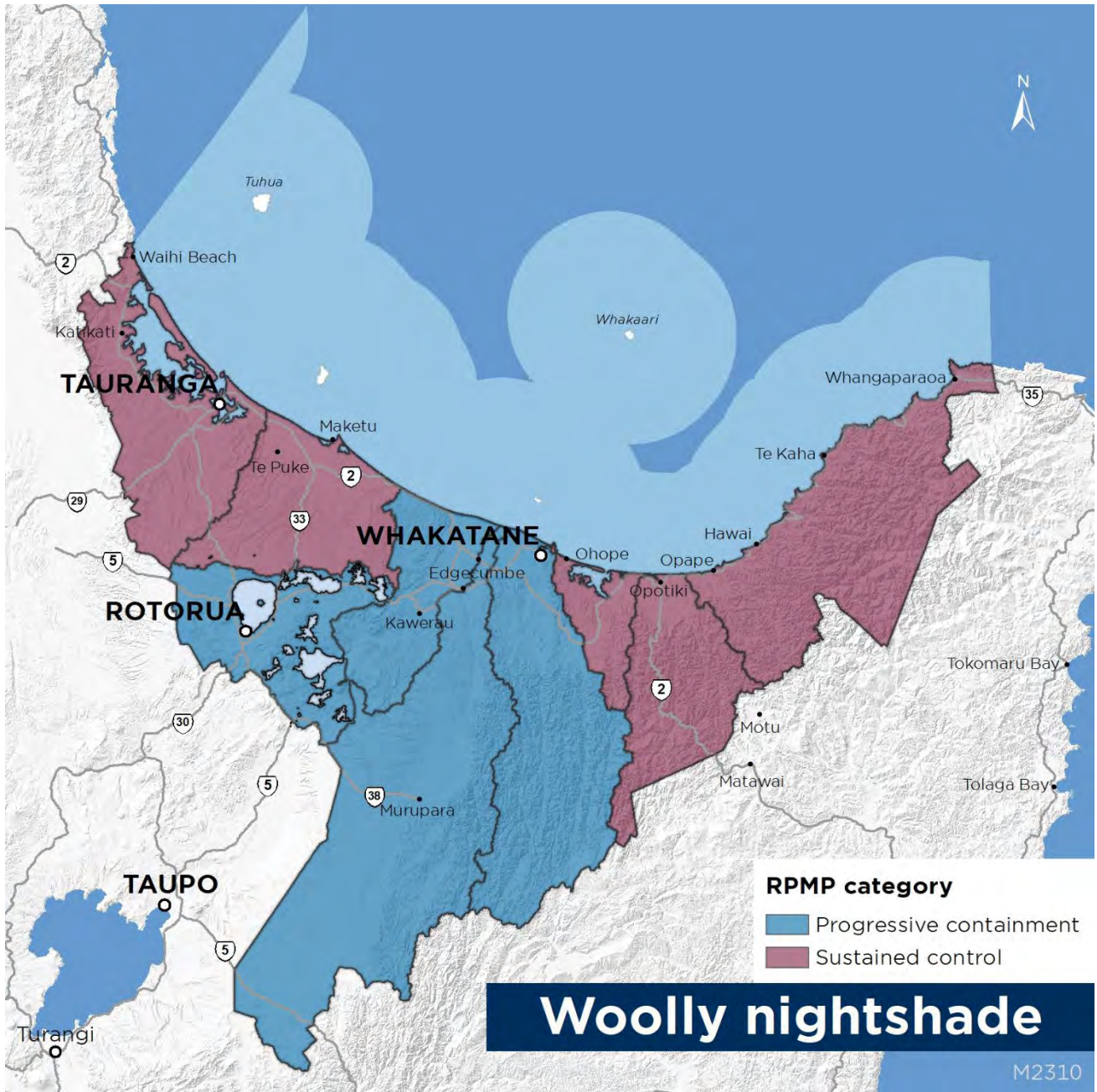
Map 10 – Lantana



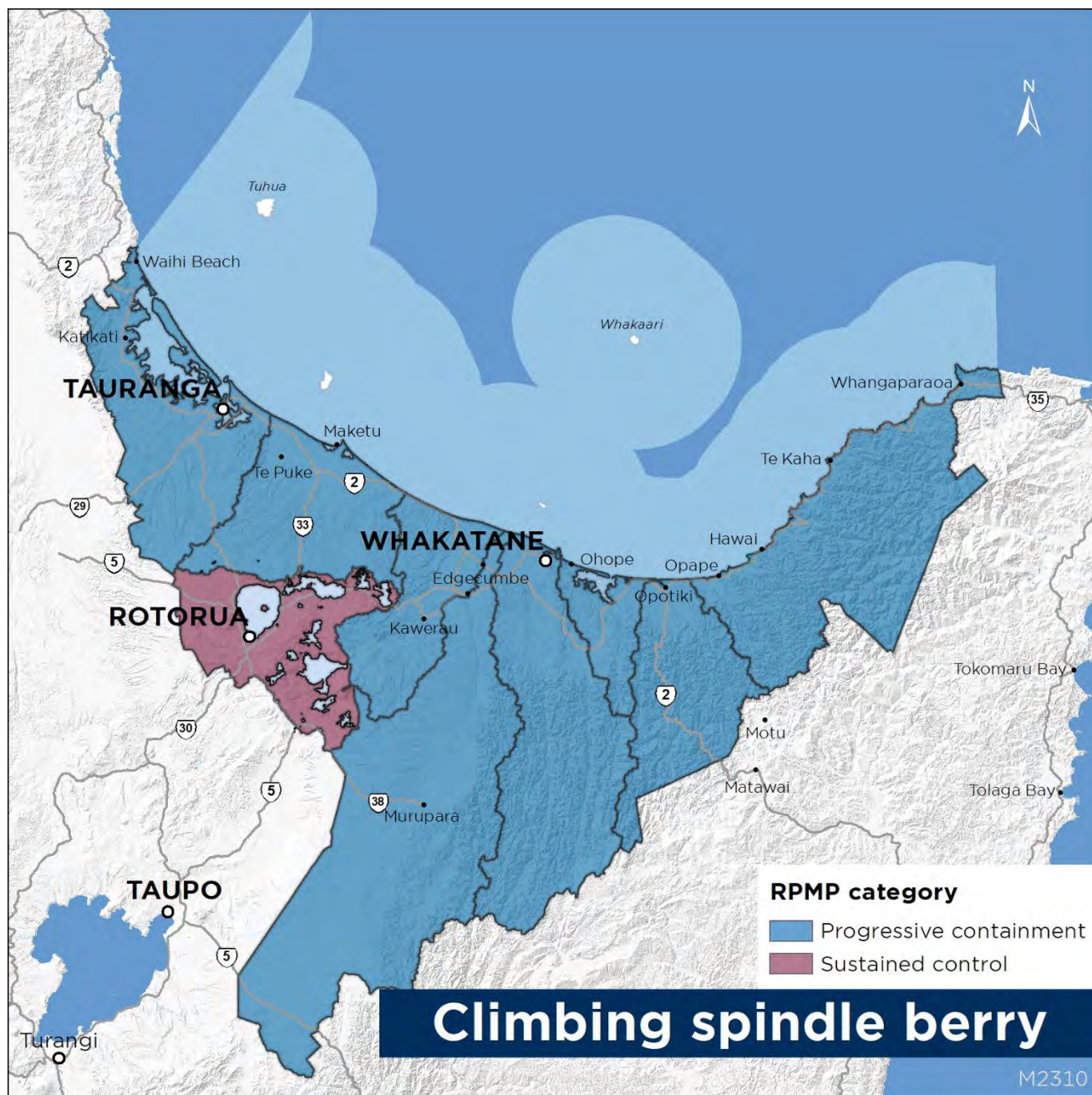
Map 11 – Wallaby



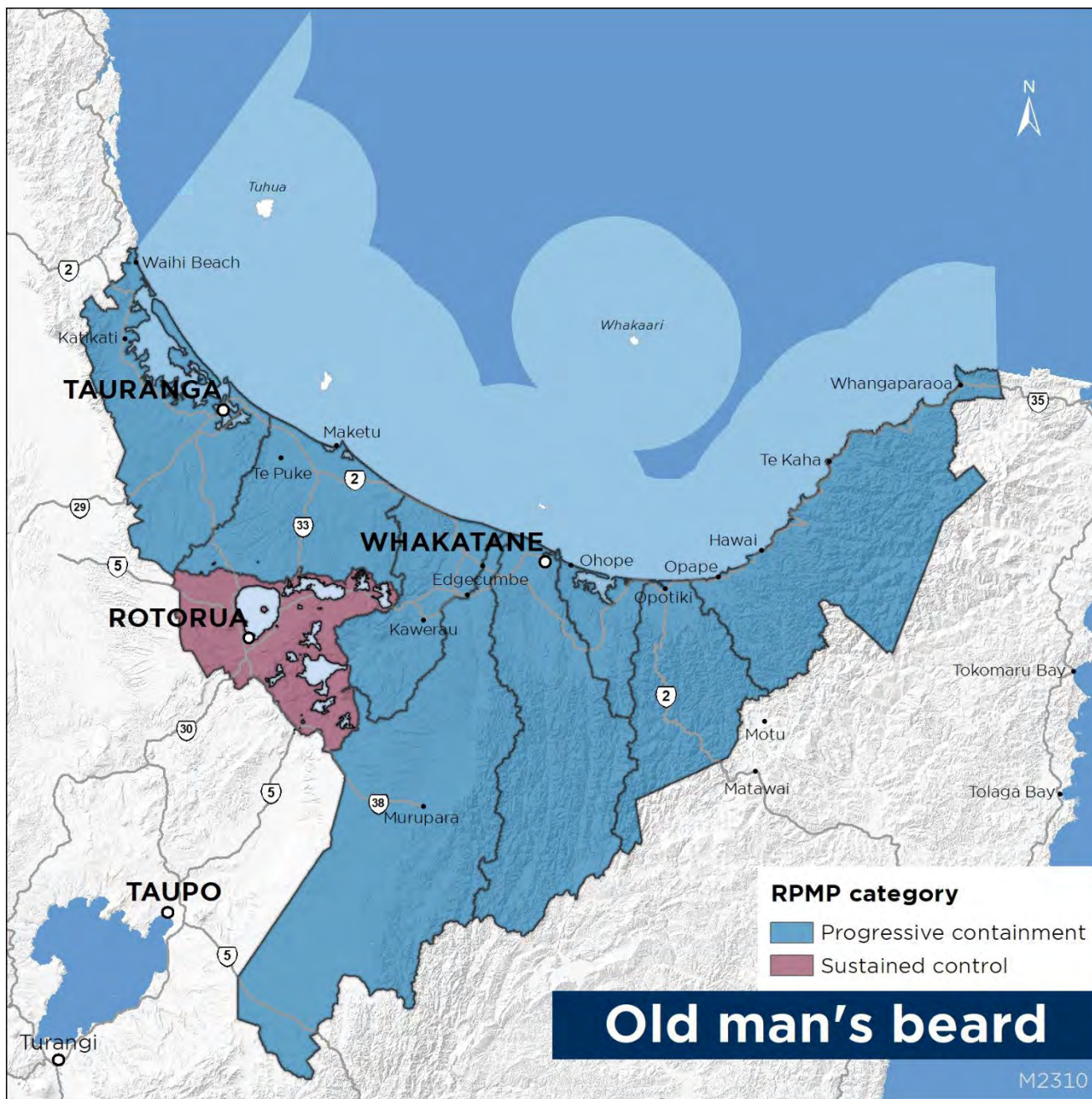
Map 12 – Woolly nightshade



Map 13 – Climbing spindle berry

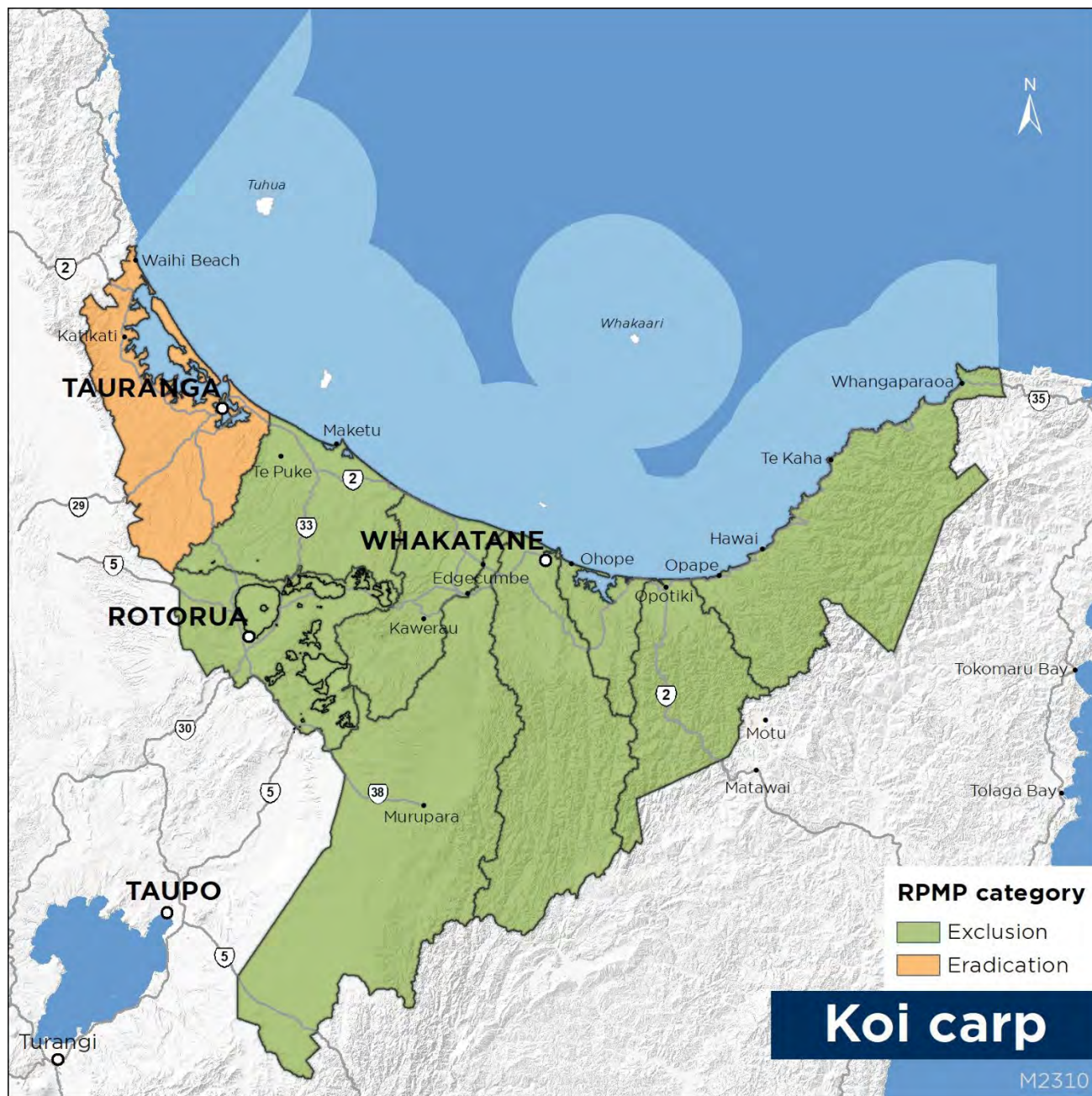


Map 14 – Old man’s beard

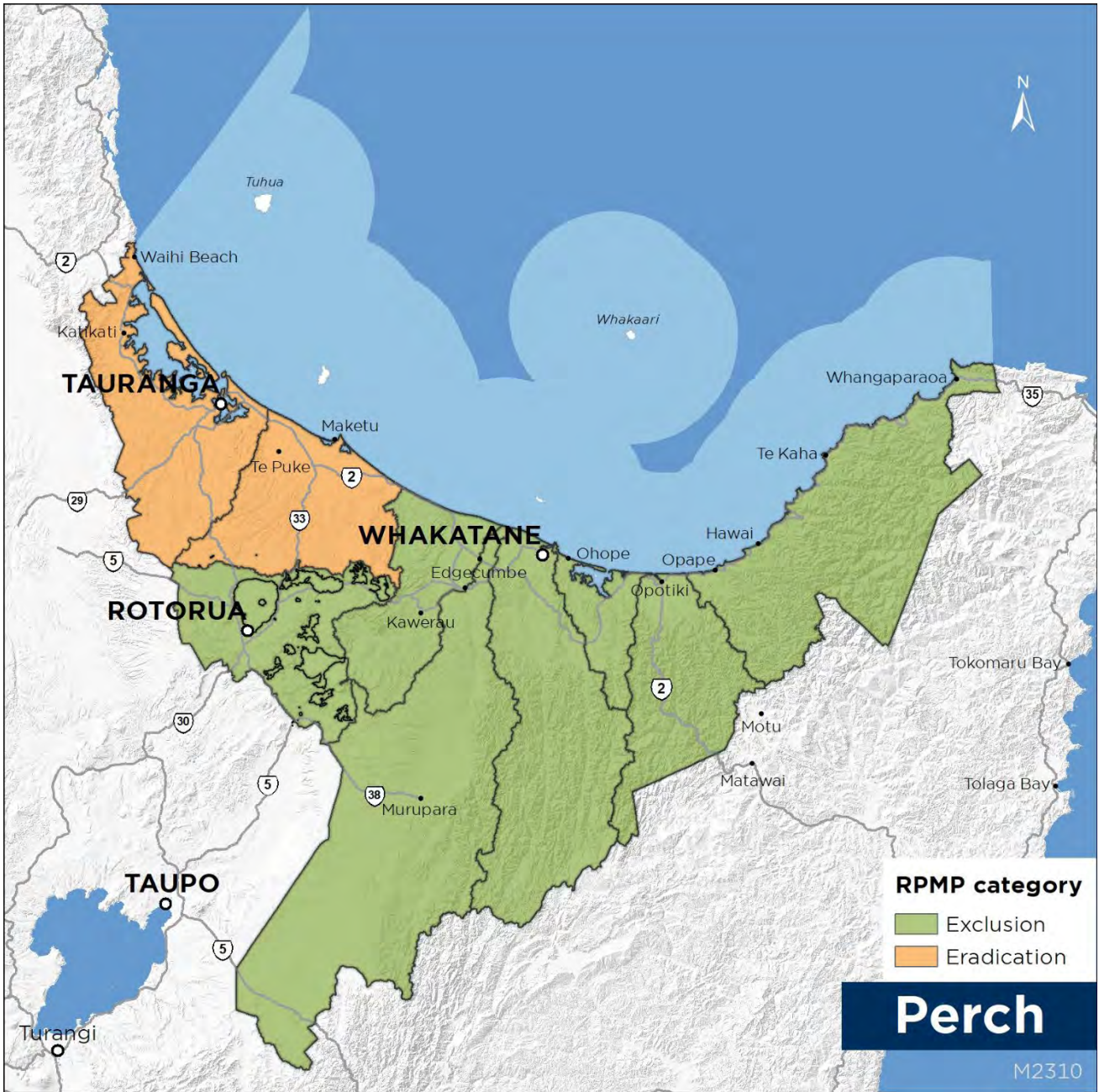




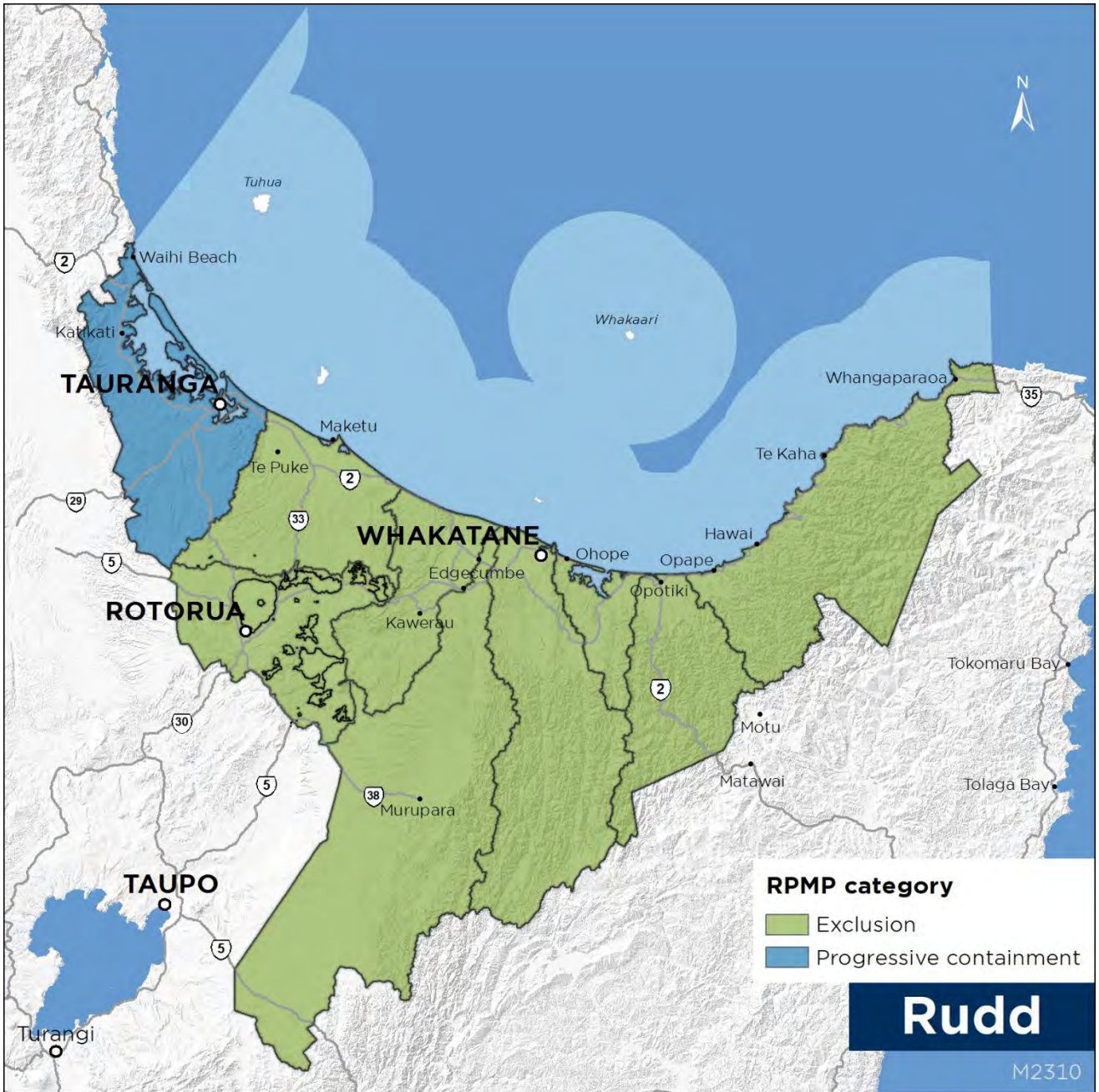
Map 15 – Koi carp



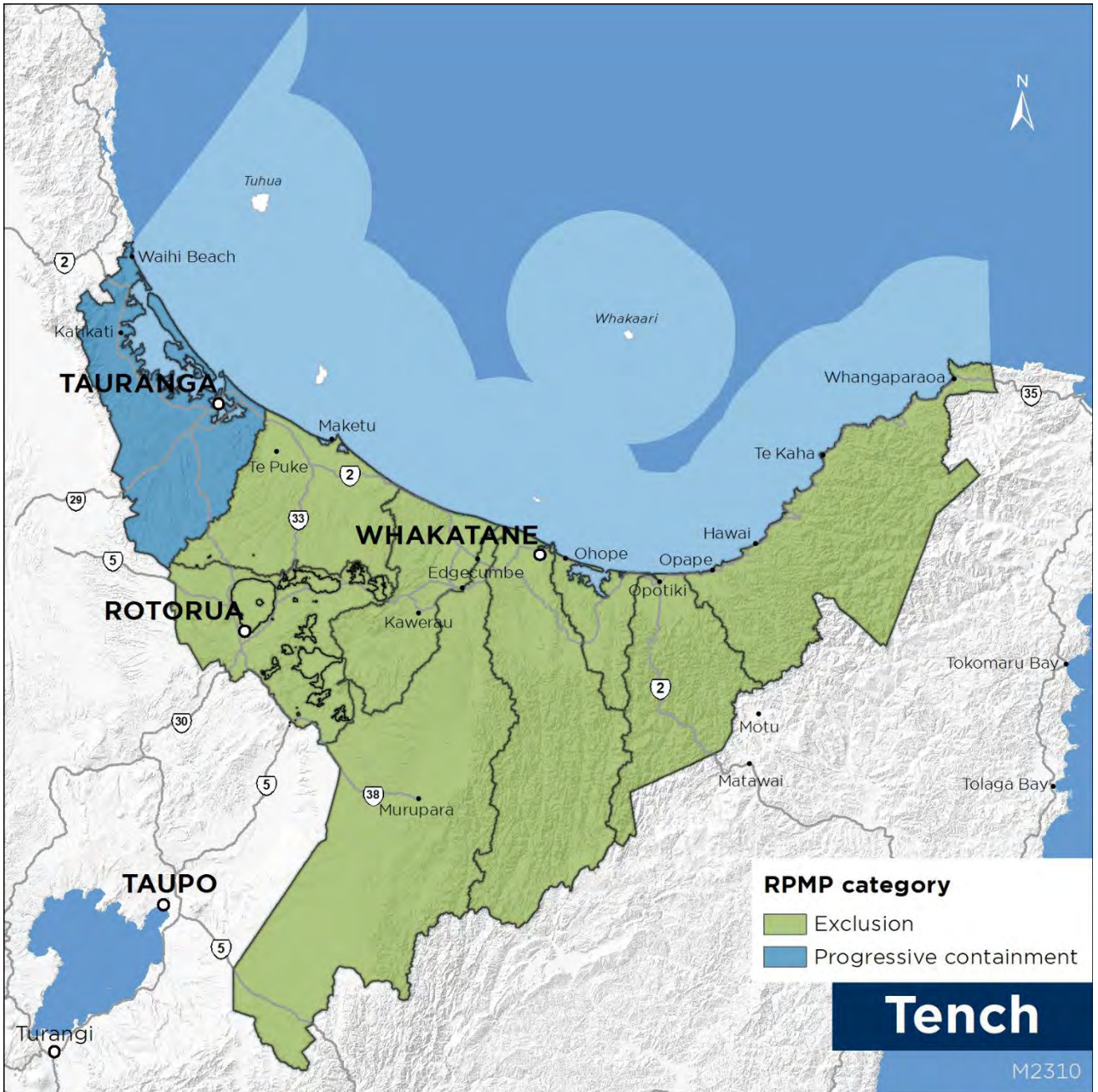
Map 16 – Perch



Map 17 – Rudd



Map 18 – Trench



# Glossary/Papakupu

<b>Aquatic pests</b>	Pests listed in this RPMP that live in any water body including aquatic plant pests and pest fish.
<b>Authorised person</b>	Means a person appointed an Authorised Person under section 103 of the Biosecurity Act 1993.
<b>Beneficiary</b>	The receiver of benefits accruing from implementation of pest management or this plan.
<b>Biofouling</b>	Means the accumulation of aquatic or marine organisms such as micro-organisms, plants and animals on surfaces and structures immersed in, or exposed to, the aquatic or marine environment.
<b>Craft (modified from Biosecurity Act 1993)</b>	Means an aircraft, ship, boat or other machine or vessel used or able to be used for the transport of people or goods, or both, by air or sea and may include an oil rig or a structure or installation that is being imported by being towed through the sea.
<b>Crown agencies</b>	Agencies (including all Ministers of the Crown and all departments) that represent the Crown but not including: <ul style="list-style-type: none"> <li>• an Office of Parliament,</li> <li>• a Crown entity, or</li> <li>• a State enterprise named in the First Schedule to the State Owned Enterprises Act 1986.</li> </ul>
<b>Council</b>	Means the Bay of Plenty Regional Council and any agents undertaking work on the Council's behalf.
<b>Destroy</b>	To immediately kill a pest animal or kill or remove a pest plant in a manner that ensures no further growth of that plant.
<b>Effect</b>	<p><i>From sections 12A and 12B and Part 5:</i></p> <p><i>(a) include the following, regardless of scale, intensity, duration, or frequency:</i></p> <p><i>(i) a positive or adverse effect; and</i></p> <p><i>(ii) a temporary or permanent effect; and</i></p> <p><i>(iii) a past, present, or future effect; and</i></p> <p><i>(iv) a cumulative effect that arises over time or in combination with other effects; and</i></p> <p><i>(b) also include the following:</i></p> <p><i>(i) a potential effect of high probability; and</i></p> <p><i>(ii) a potential effect of low probability that has a high potential impact.</i></p>
<b>Eradication</b>	Means 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-term.
<b>Exclusion</b>	Means 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.
<b>Exacerbator</b>	A person, who by their action or inaction, continues to the creation, continuance, or aggravation of a pest management problem.
<b>Exemption</b>	<p>An occupier may make a written application for exemption to the rule or any part thereof, in accordance with section 78 of the Biosecurity Act 1993. An exemption may be granted provided that it will not significantly prejudice the attainment of the RPMP's objectives, and may be available where:</p> <ul style="list-style-type: none"> <li>• the requirement(s) of the rule have already been substantially complied with,</li> </ul>

	<ul style="list-style-type: none"> <li>• action has been taken or provision has been made that is as effective or more effective than compliance,</li> <li>• the requirement(s) of the rule is clearly unreasonable or inappropriate, or</li> <li>• events have occurred that make the requirement(s) unnecessary or inappropriate.</li> </ul> <p>The Biosecurity Act 1993 provides that a person may have a defence to any offence under Section 154N if the person proves that their actions were necessary for the purpose of:</p> <ul style="list-style-type: none"> <li>• saving or protecting life or health, or</li> <li>• preventing serious damage to property, or</li> <li>• avoiding an actual or likely adverse effect on a natural and physical resource or human health;</li> <li>• and the person's actions were reasonable in all the circumstances, and the person took steps that were reasonable in all the circumstances to mitigate or remedy the effects of the action after it occurred, and that notice is given in accordance with the timeframes set out in Section 154N(5) of the Act.</li> </ul>
<b>Feral goat</b>	A feral goat is any goat that is not: held behind effective fences or otherwise constrained; and identified in accordance with a recognised identification system (as described under the Animal Identification Act 1993).
<b>Freshwater</b>	Means all water except coastal water and geothermal water.
<b>Hull</b>	Means the immersed (including occasionally immersed) surfaces of a vessel including the following three parts: (a) hull area - the immersed surfaces of a vessel excluding niche areas and wind/water line. (b) niche areas - areas on a vessel hull that are more susceptible to biofouling due to different hydrodynamic forces, susceptibility to coating system wear or damage, or being inadequately, or not, painted, e.g. sea chests, bow thrusters, propeller shafts, inlet gratings, dry-dock support strips, etc. Includes appendages. (c) wind and water line - the area of the hull that is subject to alternating immersion due to a vessel's movement or loading conditions (also known in shipping as the Boot-top). The definition of hull includes pontoons (including moving pontoons).
<b>Marine pests</b>	Means pests listed in this RPMP that live in the marine environment including Asian paddle crab, Australian droplet tunicate, clubbed tunicate, Mediterranean fanworm and pyura.
<b>Occupier</b>	Occupier means: (a) <i>In relation to any place physically occupied by any person, means that person, and</i> (b) <i>In relation to any other place, means the owner of the place, and</i> (c) <i>In relation to any place, includes any agent, employee, or other person, acting or apparently acting in the general management or control of the place.</i> <b>Note:</b> a good neighbour rule is the only way in which a plan may cause the Crown (and therefore Crown agencies) to become liable to meet obligations and costs. There are no good neighbour rules in this RPMP.
<b>Perch</b>	For the purposes of this RPMP Perch managed by provisions in this Plan are those that are present due to a breach of the Conservation Act 1987 and the Freshwater Fisheries Regulations 1983.
<b>Pest</b>	Means an organism specified as a pest in a pest management plan.

<b>Pest management agreement</b>	<p>The development of a pest management agreement will enable Council and occupiers to set out how the occupier will meet the objectives of the RPMP.</p> <p>Council will approve plans where they believe that the occupier has adequately provided for the containment of the infestation in accordance with the RPMP. If an occupier has an agreed pest management agreement with Council and is actively carrying out their requirements under this management agreement, they will not receive a written direction from an authorised person.</p> <p>A pest management agreement is a signed agreement between the occupier and the Council and includes:</p> <ul style="list-style-type: none"> <li>• the legal description of, and a map showing the location and extent of, the property to which the Agreement applies.</li> <li>• the time period over which the Agreement applies.</li> <li>• detail of the location and extent of specified pests on the property to which the Agreement applies.</li> <li>• detail of the programme of pest removal that will be undertaken on the property over a prescribed time period (e.g. which areas of specified pests will be removed, when and the programme of follow-up control of areas once pests are removed.</li> <li>• the risk of seed dispersal.</li> <li>• the outcome that the Agreement aims to achieve within the period over which it applies.</li> </ul>
<b>Place</b>	Includes any building, conveyance, craft, land or structure, and the bed, and waters of sea and any canal, lake, pond, river or stream.
<b>Progressive containment</b>	Means to contain or reduce the geographic distribution of the subject, or an organism being spread by the subject, to an area over time.
<b>Reasonable steps</b>	Means action required by landowners and occupiers. This action will be determined by an authorised person on a case by case basis taking into account pest management cost and capability of landowners and occupiers to undertake pest management action.
<b>Road</b>	Roads (in common law terms are public roads or highways that the public are permitted to access and use) include all bridges, culverts and fords forming part of any road.
<b>Self-certification checkpoint</b>	<p>Checkpoints at boat ramps that require an occupier (skipper) to self-certify before their vessel or craft is launched that:</p> <p>(a) the vessel was clear of freshwater pests (including plant fragments) and any pests and fragments removed at the boat ramp were disposed of using bins if bins are provided</p> <p>(b) any water on the vessel (including ballast, bilge and water in the anchor bay) was drained before the vessel was launched and this draining process was undertaken as far away from the lake as possible.</p>
<b>Self-propagated Phoenix Palm</b>	Any Phoenix Palm established by natural means and does not include Phoenix Palm that has been deliberately planted for amenity purposes.
<b>Slime layer</b>	Means a layer of microscopic organisms, such as bacteria and diatoms that accumulate in an aquatic or marine environment, and the slimy substances that they produce.
<b>Sustained control</b>	Means 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.

<b>Tench</b>	For the purposes of this RPMP, Tench to be managed by provisions in this plan are those that are present due to a breach of the Conservation Act 1987 and the Freshwater Fisheries Regulations 1983.																						
<b>Unwanted organism</b>	Means any organism that a chief technical officer believes is capable or potentially capable of causing unwanted harm to any natural and physical resources or human health; and (a) Includes: (i) Any new organism, if the Environmental Protection Authority has declined approval to import that organism; and (ii) Any organism specified in the Second Schedule of the Hazardous Substances and New Organisms Act 1996; but (b) Does not include any organism approved for importation under the Hazardous Substances and New Organisms Act 1996, unless: (i) The organism is an organism which has escaped from a containment facility; or (ii) A chief technical officer, after consulting the Environmental Protection Authority and taking into account any comments made by the Authority concerning the organism, believes that the organism is capable or potentially capable of causing unwanted harm to any natural and physical resources or human health.																						
<b>Vessel or craft</b>	Means a subset of craft as defined by the Act and means every description of boat or other craft used in water navigation, whether or not it has any means of propulsion; also includes: a barge, lighter, hovercraft or floating drilling rig. It does not include aircraft.																						
<b>Water body (as defined in Resource Management Act 1991)</b>	Means fresh water or geothermal water in a river, lake, stream, pond, wetland, or aquifer, or any part thereof, that is not located within the coastal marine area.																						
<b>Wild kiwifruit</b>	Any unmanaged plant material, self-propagated or abandoned plant of the Actinidia genus on private or public land.																						
<b>Wilding conifer</b>	Wilding conifers are any introduced conifer tree, including (but not limited to) any of the species listed in the table below, established by natural means, unless it is being managed as a crop tree within a forest plantation, and does not create any greater risk of wilding conifer spread to adjacent or nearby land than the forest plantation that it is a part of. For the purposes of this definition, a forest plantation is an area of 1 ha or more of predominantly planted trees. <b>Wilding Conifer Table</b>																						
	<table border="1"> <thead> <tr> <th>Common Name</th> <th>Scientific Name</th> </tr> </thead> <tbody> <tr> <td>Douglas fir</td> <td><i>Pseudotsuga menziesii</i></td> </tr> <tr> <td>Lodgepole or contorta pine</td> <td><i>Pinus contorta</i></td> </tr> <tr> <td>Scots pine</td> <td><i>Pinus sylvestris</i></td> </tr> <tr> <td>Dwarf mountain pine and mountain pine</td> <td><i>Pinus mugo and P.unicinata</i></td> </tr> <tr> <td>Bishops pine</td> <td><i>Pinus muricata</i></td> </tr> <tr> <td>Maritime pine</td> <td><i>Pinus pinaster</i></td> </tr> <tr> <td>Ponderosa pine</td> <td><i>Pinus ponderosa</i></td> </tr> <tr> <td>Corsican pine</td> <td><i>Pinus nigra</i></td> </tr> <tr> <td>European larch</td> <td><i>Larix decidua</i></td> </tr> <tr> <td>Radiata Pine</td> <td><i>Pinus radiata</i></td> </tr> </tbody> </table>	Common Name	Scientific Name	Douglas fir	<i>Pseudotsuga menziesii</i>	Lodgepole or contorta pine	<i>Pinus contorta</i>	Scots pine	<i>Pinus sylvestris</i>	Dwarf mountain pine and mountain pine	<i>Pinus mugo and P.unicinata</i>	Bishops pine	<i>Pinus muricata</i>	Maritime pine	<i>Pinus pinaster</i>	Ponderosa pine	<i>Pinus ponderosa</i>	Corsican pine	<i>Pinus nigra</i>	European larch	<i>Larix decidua</i>	Radiata Pine	<i>Pinus radiata</i>
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<b>Zero density</b>	Means there are no known animals or plants left of the pest species of concern, in the area of concern, at the end of pest control operations. When zero density has been achieved there is still a risk of re-infestation (e.g. longevity of seed banks).																						



# Appendices/Ngā āpitihanga

# Appendix 1: Advisory pests

The following table includes other organisms that adversely affect production, environmental and/or public values but are not the subject of identified programmes and rules in this RPMP. For that reason they have been termed Advisory pests. These Advisory pests are still intended to be managed as part of the region's wider biosecurity framework. Rules in regional and district plans and provisions in land management agreements that refer to pests specified or listed in the RPMP (or preceding versions of the same) apply to Advisory pests included in Appendix 1 as well as the other pests directly managed under this RPMP.

## Plants

### Agapanthus

*Agapanthus praecox*



An attractive blue or white flowered lily that forms robust clumps with long, strap-shaped perennial leaves. They are long-lived prolific seeders, very tolerant to temperature, rainfall, salt, poor soils and can survive immersion in the sea. Agapanthus is particularly invasive in the coastal environment outcompeting native coastal plants.

### Aluminium plant

*Lamium galeobdolon 'variegatum'*



Sometimes known as Artillery plant, Aluminium plant is an erect, stoloniferous, mat-forming, invasive perennial herb, up to 50 cm tall. The leaves are mint-like with silvery-grey patches on the upper surface, seldom reverting to a plain green-leaved form. Often found in gardens growing in the cooler areas around trees and shrubs. From December to May tubular, hairy, lemon-yellow flowers (20 mm-25 mm long) are produced in dense axillary whorls, but no seed is set. They grow rapidly and cover large areas of ground with a thick mat that stops seedlings of other plants from establishing. It is shade tolerant so can be an issue deep into the bush as well as along margins.

## Plants

### Arum lily

*Zantedeschia aethiopica*



A robust, evergreen, clump-forming perennial up to 1.5 m tall, with large, leathery, dark green, arrow-shaped leaves. Large, white flower with a yellow spike and yellow-green berries. Long-lived and persists under regenerating canopy, forming dense patches excluding other vegetation. Tolerates excessive water, wind, salt, hot to cold, most soil types, moderate shade, and is drought-resistant once established. Stock avoid it as it is poisonous, allowing it to gradually dominate grazed sites. Seeds drop near to parent plants, and are occasionally spread by birds and water. Clumps expand slowly by new shoots while tubers and seed are spread by dumped vegetation and soil movement.

### Bears breeches (Oyster plant/Sea holly/Bear's foot)

*Acanthus mollis*



A leafy, erect perennial herb that can grow 120 cm tall. It has thick roots and large, glossy, strongly lobed, dark green leaves on long leaf stalks growing from the root crown, or on shorter stalks growing from the vertical flowering stem. Numerous partly tubular flowers with one white petal and a large purple hood, with purple or brownish veins, are held at the top of the stem in a spike, with lower flowers maturing first (October to April). Many dark brown, flattened oval seeds (to 1 cm long) are produced in individual capsules (3 cm-4 cm long) from November to May. Bears breeches tolerates moderate shade and forms large clumps that spread rapidly in disturbed ground. It can cover large areas and shade out small native plants, risk areas include riverbanks and roadsides.

## Plants

### Beggars tick (Devil's beggarticks)

*Bidens frondosa*



A tall upright annual that can grow up to 2 m tall, with deeply divided leaves, yellow button-like flowers and characteristic flat black seeds with two barbed teeth easily attaching to clothing and hair. Locally abundant in northern and eastern North island, scattered elsewhere in the North Island and northern South Island as far south as Westland and Christchurch. Non-flowering plants are superficially similar to cannabis. Differs from the two other Bidens species by the two toothed seed (three or more in *B. tripartita* and *B. pilosa*) also having larger flower heads. Flowering during November to April with Orange or Yellow florets. Beggars Tick is a threat to wetlands and waterways. It grows quickly, outcompeting native plants and prevents new plants from establishing. Its barbed seed means it is easily transported on clothing and animals to new sites. Risk areas include margins of waterbodies, wetlands, swamps and low lying areas.

### Buddleia (Butterfly bush)

*Buddleja davidii*



A deciduous (occasionally semi-evergreen) open, multi-stemmed shrub that can grow up to 3 m plus tall. Stems are bluntly angled, clad in tufts of easily-removed soft woolly hair (downy hairs when young), and become lax when long. Thin, willow-shaped leaves are usually hairless above, white or hairy grey underneath, and finely toothed. It has distinctive, dense, cone-shaped hanging clusters made up of many fragrant purple or white flowers (5 mm diameter) with orange insides which are produced from December to February and are followed by seed capsules (5-10 mm long). Seed is spread by wind and water, soil movement or dumped vegetation. It forms dense stands in a wide range of habitats and can be particularly problematic along riverbeds where it can alter water flow and cause silt buildup and flooding.

## Plants

### Blue morning glory

*Ipomoea indica*



A twining or prostrate herb with stems up to 6 m in length. Leaves have three deep lobes and are up to 18 cm long and 16 cm wide with silky hairs on underside. Flowers are bright blue or purplish with a paler centre, trumpet-shaped and 10 cm in diameter. Grows very quickly, forming dense mats that smother. Its ability to climb makes this the dominant vine wherever it occurs and it can replace forest with a low weedy blanket.

### Bushy asparagus

*Asparagus aethiopicus*



A dense scrambler with small pink flowers, red berries and sharp spiny scales. Forms dense patches of growth with tough, long-lived tubers that re-sprout. Moderate to slow growth rate with seeds that are widely dispersed by birds. Has the ability to smother shrubs and other low vegetation.

## Plants

### Californian bulrush

*Schoenoplectus californicus*



A large aquatic perennial sedge with rounded or triangular bright-green stems which can grow to 3 m tall. It grows from dense woody rhizomes buried in bottom sediments and is usually found in the tidal reaches of large rivers. It is spread through seed and vegetative spread from rhizomes, the seed is bird and water dispersed. It forms tall dense beds that colonise mobile sand deposits and river margins. It can cause erosion of riverbanks.

### Canna lily

*Canna indica*



An erect, leafy perennial herb which can grow up to 2 m tall. It has thick underground stems (rhizomes) and sturdy, unbranched, green and hairless above-ground stems from which large, green (sometimes purple tinged), oblong leaves (up to 45 cm long x 15 cm wide) with prominent midribs grow. Pinkish-red to reddish-yellow and occasionally yellow or orange-red flowers (5 cm-6 cm long) grow from the top of the stem, often in pairs, followed by round seed capsules (2 cm diameter) containing round black seeds. Seeds are spread by gravity and water, and pieces of underground stem (rhizome) also form new plants. Forms tall, dense, long-lived stands that are tolerant of a range of conditions including salt, wind, grazing or other damage, and damp to moderately dry conditions. It can replace all other plants on the ground, preventing natural regeneration, often leading to the invasion of weedy vines. It can remove water from damp habitats. Risk sites include damp sites with high light in frost-free localities: wetlands, river margins, gullies, disturbed shrublands, forest margins and coastal areas

## Plants

### **Cestrum species**

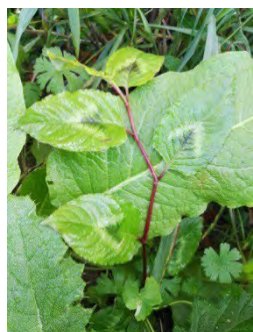
*Cestrum spp.*



An upright, thicket-forming shrub up to 3 m tall. Leaves are simple, entire and strong smelling when crushed. Flowers are tubular, orange, crimson or greenish-white. The fruit is a glossy berry, white, crimson or purplish-black. They form dense mats in the understorey and are toxic to farm animals and grazers. They spread via birds and also by fragment via flooding, contaminated soil and dumped vegetation.

### **Chinese knotweed**

*Persicaria chinensis*



Stems are reddish in colour and have a slight zig-zag form. Leaves have a distinctive, V-shaped blotch and flowers are cream/pink and grow in clusters. Can tolerate a variety of climatic conditions and can grow independently up to 1 m in height without needing other plants or structures to support it. A perennial bushy vine that grows quickly to smother other plants. Known to be in Auckland and Waikato only.



## Plants

### Chinese privet

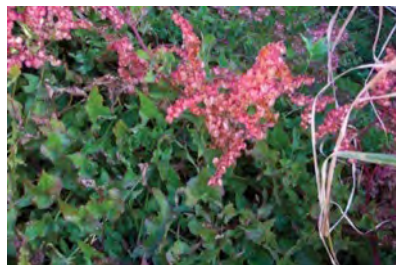
*Ligustrum sinense*



Shrub or small tree up to 5 m plus. Evergreen or semi-deciduous in cold districts with warty lumps on stems and densely hairy shoots. Oval, dull green leaves with occasional wavy edges. Loose drooping clusters of small, tubular, very fragrant white flowers that appear from July to March, followed by round green berries that mature to dull purplish-black. Produces many highly-viable seeds that are primarily spread by birds, forming dense stands. Short-lived but continuously replaced due to profuse re-seeding.

### Climbing dock

*Rumex sagittatus*



Scrambling or low-climbing perennial with kumara or beetroot-like tubers with yellow flesh. Extensive, long, weak rhizomes. Hairless, reddish-green stems are ribbed, zigzagging and slender. Light green arrow-shaped leaves. Clusters of small, green-pink or reddish flowers are produced at the top of the plant from November to March, followed by large masses of showy yellow-pink-crimson, flat, heart-shaped capsules containing seeds. Effective dispersal and fast growth rate allows it to scramble quickly over most plants to 3 m plus high. Seed and tubers are spread by wind and fresh or salt water, soil movement and vegetation dumping.

## Plants

### Crack willow

*Salix fragilis*



Deciduous tree up to 25 m, with spreading rather than hanging branches and rough, fissured bark. Root suckers and rootlets are bright red when in or near water. Dark or brownish green shoots snap with a loud crack when bent. Lance-shaped leaves with tiny serrations have a bluish underside while the upper surface is shiny and often covered with bright red galls. Narrow downward curving catkins appear from September to October. As there are only male plants in New Zealand, no fruit is formed. Re-sprouting and suckering habit and rapid growth creates dense thickets, replacing native riparian species. Stem fragments are spread by water and suckers spread locally. Also planted intentionally on stream and river banks for erosion protection.

### Eleagnus

*Elaeagnus x reflexa*



Dense, vigorous, scrambling shrub that grows up to 20 m in supporting trees 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, hairless above, and silvery or brown and scaly on the underside. Small whitish flowers are produced in clusters on brown scaly stalks from March to May, followed by pale reddish-orange oblong fruit. Considered weedy due to its scrambling habit, suckering roots, nitrogen fixing ability, the fact it is extremely long-lived and it is not grazed. Stems and suckers are usually spread via dumped vegetation.

## Plants

### Elephants ear

*Alocasia brisbanensis*



Large, long-lived, robust perennial up to 3 m tall. Shiny green, leathery, arrow-shaped leaves with prominent veins. Fragrant, creamy-yellow to orange flowers (January-April) on a green spike, followed by glossy scarlet or orange berries. Stems are trunk-like on mature plants, with leaf scars and often have lower part of trunk lying along ground. Limited distribution through seed drop near to parent plants, and occasionally through water. Clumps expand slowly through new shoots. It can be spread by intentional planting, dumped vegetation, and soil movement.

Smothers the ground, preventing the seedlings of native species from establishing. Stock avoid due to being poisonous.

### False acacia

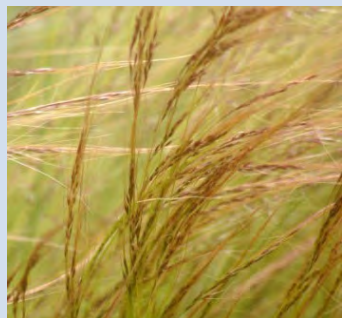
*Robinia pseudacacia*



Deciduous tree (less than 25 m) tall whose young saplings have smooth, green bark while older trees have deep, furrowed, shaggy, dark bark with flat-topped ridges. Leaves (20 cm-30 cm) are made up of 7-21 thin, round leaflets that are dark green above and pale underneath, and attached in pairs along the leaf stalk. Smaller branches have 1 cm long spines at the base of each leaf stalk. Large drooping clusters of pea-like, fragrant, white to yellow flowers (1 cm long) which emerge between November and January are followed by shiny, smooth, narrow, flat seed pods (5 cm-10 cm long) containing 4 to 8 seeds. It reproduces vigorously by root suckering and stump sprouting to form groves of trees that are interconnected by a common root system. It also seeds heavily every 1-2 years with lesser amounts of seed in between. It forms dense thickets that shade out other plants in open or disturbed sites and its large, fragrant flowers compete with native plants for pollinating bees.

### Feather grass

*Nassella tenuissima*



A perennial drought resistant tussock grass with fine wiry leaves up to 70 cm high. It produces a flowerhead between October and December with a feathery panicle which is erect when young but weeping when mature. It produces huge numbers of rough-coated seeds with tufted hair at base. Seed is spread short distances by wind and also by attachment to wool, fur, clothing and machinery. Preferred habitat includes poor or dry pasture, open areas and the coastal environment. It crowds out pasture species, reducing productivity. Replaces native species in open and coastal areas. Stock forced to eat it get indigestible balls in their stomachs, leading to weight loss and starvation.

## Plants

### Firethorn (Orange firethorn)

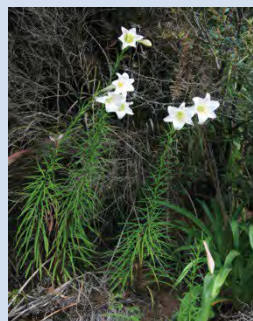
*Pyracantha angustifolia*



An evergreen, spiny, spreading shrub that can grow more than 3 m tall with dense, rigid, spreading stems that are grey and hairy when young, and shiny reddish brown when older, and usually tipped with a spine. Dark green oval to egg-shaped leaves are hairless above and hairy below and on hairy stalks. Many small white flowers in dense clusters appear from December to January followed by glossy orange berries from April to August. Forms dense thickets that discourage native species from establishing and produces many well dispersed, moderately long-lived seeds. Tolerates hot to cold temperatures, wind, salt, damage, poor soils, damp to dry conditions and light shade. Risk areas include disturbed forest and shrubland, short tussockland, bare land, and occasionally coastal sites.

### Formosa lily

*Lilium formosanum*



An upright herbaceous plant with perennial underground bulbs producing annual shoots that grow to 1 m-2 m tall. Stems are mostly smooth and dark green in colour with alternatively arranged stalkless, hairless leaves with smooth edges that generally become smaller towards the top of the stems. Scented, funnel-shaped flowers (12 cm-20 cm long) have six large white petals with mauve or purple on the outside. It is a hardy plant that spreads easily through wind spread seed or vegetative bulbs. It is often found in disturbed areas, road sides or sand dunes.

## Plants

### German ivy

*Delairea odorata*



Scrambling vine from the same family as ragwort with thin, weak stems. Has dense, ragwort-like yellow flowers from May to October that form fluffy seeds like its agricultural cousin. Thin, soft, glossy, hairless leaves are ivy-shaped and clammy to touch. Fast growing and with a dense smothering habit that distributes many wind-blown seeds long distances. Also spread by dumped vegetation and soil movement.

### Green goddess lily

*Zantedeschia aethiopica* 'green goddess'



Clump-forming, evergreen perennial growing from tubers, with large glossy, leathery, dark-green, arrow-shaped leaves with pale fine veins and wavy margins, held upright on long stalks. From September to December a yellow, finger-like spike, surrounded by a large, greenish-white, funnel-shaped, modified leaf, forms a flower-like structure that is followed by round green or yellow berries on the flower stalk after the leaves die back. Forms dense cover on the ground in open sites shading out and preventing establishment of native plants.

### Grey willow

*Salix cinerea*



Deciduous shrub or small tree up to 7 m with suckering roots and smooth bark. Catkins appear in spring, before the leaves. Leaves are shiny on the upper surface, covered with soft grey hairs underneath. Shoots aren't brittle, and are either greenish-grey and hairy, or reddish-purple and hairless. Produces many, widely dispersed, short-lived seeds, grows rapidly, and re-sprouting and suckering habit creates dense thickets. Replaces native species in wetlands and forms vast dense (often pure) stands and thickets. Causes blockages, flooding and structural changes in waterways.

## Plants

### Giant knotweed

*Fallopia sachalinensis*



Multiple stemmed, thicket forming shrub that can grow 2 m-4 m high. Stems are green, hairless and woody at the base. Leaves are oval and pointed at the tips, with 14 pairs of lateral veins that are bluish. Stalks are usually red. Flowers from November to April, in white or greenish dense, hairy clusters. Grows extensively from rhizomes and multiple stems. Spread largely through the movement of contaminated soil and the dumping of vegetation. Forms dense, long-lived thickets that exclude other species and prevents native seedlings from establishing.

### Giant reed

*Arundo donax*



Massive clump forming perennial similar to bamboo. Can grow to 8 m with a dense root mass and short rhizomes. It has thick woody stems that taper at the ends, giving the plant a droopy look as it reaches maturity. Bluish-white bamboo like leaves. Giant reed is largely spread via the movement of rhizomes through contaminated soil and the dumping of vegetation. It grows in dense thickets that crowd out other desirable species often killing the plants it smothers.

## Plants

### Heather

*Calluna vulgaris*



Bushy, evergreen shrub with woody, wiry stems and densely hairy young shoots becoming hairless as they mature. Long dark green to brown leaves are in opposite pairs on the stem, overlapping in four vertical rows. Bell-shaped, pink to pale purple flowers on narrow, leafy, elongated, upright clusters appear from December to March, followed by profuse, tiny, round, hairy seed capsules. Suckers are spread in soil and seed is spread via wind, water and soil movement. Rapidly forms dense stand in low-growing habitat preventing the establishment of native species.

### Himalayan balsam

*Impatiens glandulifera*

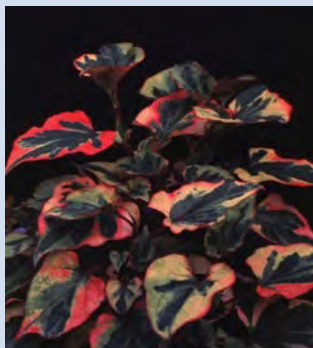


Annual, hairless herb with erect, fleshy, hollow, purple to reddish tinged thick main stem up to 2.5 m. Stem is swollen at the junctions of leaves and branches. Pink, white or purple flowers with a backwards pointing hood are produced from November to March. Hairless, purplish, ribbed seed capsules open when disturbed to explosively release shiny black seeds. Tall, fast growing plant capable of producing up to 2,500 seeds that are spread quickly by water and can be viable for 18 months or more. Competes with native plants for light, space and pollinators. Reproduction is by seed only.

## Plants

### Houttuynia

*Houttuynia cordata*



Dense, deciduous groundcover, which can grow to 1 m tall. Heart-shaped leaves with peppery scent when crushed are variegated cream, green, bronze and scarlet. Small flowerhead spike with minute white flowers from December to January. Rapid growth rate with creeping rhizomes and produces seed without pollination. Not yet naturalised. Found only in gardens.

### Japanese honeysuckle

*Lonicera japonica*



Evergreen, woody, clockwise twining, vigorous climber that can smother all vegetation beneath. Oval leaves in opposite pairs. Pairs of two-lipped, sweetly scented tubular white flowers occur from September to May, and are followed by egg-shaped, glossy blackberries. Weedy due to its climbing, smothering habit and the fact it forms dense, long-lived masses. Can cause forest canopy collapse. Spread via birds, possibly possums, roading machinery, dumped vegetation and contaminated soil and fill.



## Plants

### Japanese spindle tree

*Euonymus japonicus*



Many branched shrub or small tree up to 7 m tall with round or slightly four-ribbed twigs. Leaves are glossy, ovalish, and finely toothed, in opposite pairs along stems. Sold as variegated cultivar but reverts to green. Inconspicuous greenish flowers are produced from December to March, followed by fleshy, round, pink seed capsules with orange to red flesh surrounding seeds. Forms dense stands in open or shade. Seeds dispersed via birds, possums and by soil and water movement.

### Japanese walnut

*Juglans ailantifolia*



Wide-spreading, strongly-suckering, deciduous tree up to 15 m. Leaves, in groups of 9-17 are hairless on upper surface, densely haired on underside veins and have sparsely serrated edges. Has male catkins which hang from stems and purplish female catkins on erect spikes. Groups of 9-22 small flowers with prominent pink stigmas (October - November) are followed by clusters of 10-22 sticky, downy, rust-coloured fruit containing hard, thick-shelled nuts. Long-lived tree that crowds the canopy and prevents establishment of other species. Produces many long-lived seeds that are spread by dumped nuts, water and possibly pigs and possums.

### Jasmine

*Jasminum polyanthum*



Evergreen, rampant, climbing, perennial vine. Leaves are opposite, pinnate and usually have seven, long-stalked spear or egg-shaped leaflets. Highly fragrant white flowers (January to December). Flowers are pink when in bud. Stems are very tough and rooting occurs at the nodes. Grows rapidly over the forest floor into the under canopy and canopy forming dense long-lived masses. Extremely hard to kill. Spread via bird where seed is produced but main form of spread is dumped vegetation.

## Plants

### Marram grass

*Ammophila arenaria*



Coarse with glaucous-grey tufts to 170 cm and fibrous roots. Leaf blade is tightly rolled (appearing cylindrical) while the seed head spike 15 cm-30 cm long. A tussock forming grass that grows quickly to establish and push out other dune plant species. Has extensive system of creeping underground rhizomes which can stretch up to 2 m in six months. Once planted extensively along New Zealand foredunes for stabilisation, its ability to accumulate sand effectively means that it gives rise to higher, steeper dunes than native dune vegetation, changing dune profile while out-competing with native spinifex and pingao. Spreads mainly via rhizomes and occasionally seed.

### Mexican daisy

*Erigeron karvinskianus*



A sprawling perennial daisy which grows up to 40 cm tall with fibrous roots, and long thin stems that are sparsely hairy to hairless, much-branching and root at nodes. Small, narrow leaves (upper leaves usually 3-lobed) are fragrant when crushed. White, white-purplish or pink daisy-like flowers with a central yellow disc are produced from January to December, followed by masses of fluffy seeds. Forms dense mats and produces huge amounts of seed that travel for long distances. Wide ecological versatility, tolerating moderate shade to full sun, damp to drought conditions, sand to mud, almost any surface and high to low temperatures. Mexican daisy impacts a large range of habitat and while it isn't very long-lived itself, it opens habitats up to invasion by vines and other weeds. It replaces vulnerable herbs, shrubs, etc in key and isolated places.

## Plants

### **Mexican waterlily**

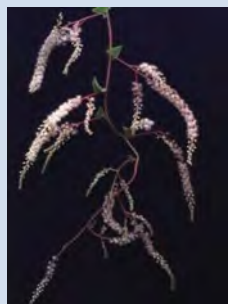
*Nymphaea mexicana*



Aquatic plant with vertical underwater rhizomes and round heart-shaped leaves (up to 25 cm diameter) that float on long stalks. As the leaves mature they develop brown blotches on the upper surface and become mainly purple beneath. Fleshy stems bear banana-shaped tubers. Flowers are star-shaped and pale yellow with many veined petals. Grows rapidly covering infested waterbodies and is spread via rhizomes, tubers and seeds that are carried by water. Fragments can also be spread via boats, fishing gear and machinery.

### **Mignonette vine**

*Anredera cordifolia*



Perennial, climbing, hairless, woody vine with fleshy rhizomes and slender, reddish stems with small irregular 'warty' aerial tubers. Leaves are bright green, fleshy, heart-shaped and shiny. Slender, white, drooping, fragrant flowers from March to May. Tubers detach easily, resprout easily and are very hard to kill. Grows at moderate rate but forms heavy, long-lived masses that dominate medium to high canopy and can topple small trees. No seed is produced in New Zealand, all spread is via dumped vegetation and tubers or rhizomes.

## Plants

### Montbretia

*Crocosmia x crocosmiiflora*



Montbretia is a stiff, leafy, clump forming, evergreen perennial with flattened light brown corms that have a fibrous cover and form clusters (3+) at the base. It has form sword shaped leaves that all rise from the base, are erect to curving above, with a conspicuous mid-vein. It flowers in January-February with tall flowerheads that are zig-zag shaped. Solitary orange to crimson petals develop into 3-sided seed capsules that are reddish-brown and flat to triangular. While it produces few seeds, corms and rhizomes multiply rapidly and it also grows from fragments. It can tolerate frost and heat, damage and grazing, damp, most soils and moderate shade. It is spread by soil movement, dumping of vegetation and water movement and is often found on roadsides, slips, wasteland and exotic plantations.

### Mouse ear hawkweed

*Pilosella officinarum*



Mouse ear hawkweed is a perennial herb that forms mats of tight, interconnected rosettes with thick underground root systems, and often with above ground root systems as well. Leaves are dull green to dark green above, usually paler below and slightly toothed toward the base of the plant. They have bristly hairs above and star shaped hairs below and sit on thick stems that contain milky sap. Lemon or yellow dandelion-like flowers from October to May are followed by fluffy seeds with dirty-white hairs. It grows and matures quickly and produces many moderately long-lived and widely dispersed seeds. It is creeping and mat-forming by nature and this enables it to tolerate damage, grazing, moderate to cold temperatures, low rainfall, poor soils and little shade. It also produces substances in the soil that discourages other species from growing near it. It is spread by wind, and in clothing and animal pelts. Root fragments are spread by water movement, contaminated soil and machinery. Found in disturbed shrubland and forest, tussockland, fernland, alpine and volcanic herbfields, bare land, riverbeds and streambanks.

## Plants

### Pampas

*Cortaderia selloana*, *Cortaderia jubata*



Large, clump-forming tussock grasses with long, razor-edged leaves. Feathery flowers, creamy white to violet, on erect stalks, from February to May. Dead leaves curl into spirals at the base of the clump. Each plant releases millions of seeds which form dense stands smothering other vegetation. Seeds are spread very long distances by wind and occasionally water, also spread by soil movement and dumped vegetation. Not to be confused with native toetoe.

### Parrot's feather

*Myriophyllum aquaticum*



Perennial, freshwater plant with light green or reddish stems that grow up to 4 m long. Fibrous roots are produced at each node. Foliage is blue-green, with leaves arranged in whorls of five or six. These are divided into many feathery leaflets. Flowers are small and inconspicuous. All nodes can take root and forms dense mats in still or slow-flowing water or damp ground. Spread by fragments either breaking off or via contaminated equipment and boats.

## Plants

### **Plectranthus**

*Plectranthus ciliatus*



Trailing or straggling herb with stems covered in purple hairs that form runners and root at nodes. Hairy oval, textured leaves with serrated edges are in opposite pairs and are purple underneath and dotted with glands. From December and August, erect stems (up to 30 cm tall) of tubular white flowers with purple dots inside lower lip are produced, followed by small dark brown nutlets. Creeps along the ground forming thick, smothering mats. Runners are the only method of spread, and are moved around in soil and with green waste dumping.

### **Prickly pear cactus**

*Opuntia monacantha*



Grows up to 5 m tall with a definite trunk and many narrowly egg-shaped, flattened, succulent branches, 10 cm-35 cm long. Leaves are minute and deciduous. Flowers are yellow with an orange to red median stripe, followed by reddish purple oblong fruit. The plant spreads by stem fragments forming monocultures in dry areas.

## Plants

### Purple nutsedge

*Cyperus rotundus*



Also known as nut grass. A perennial sedge with an unjointed solid stem that is triangular in cross-section. Bright green leaves, 20 cm-50 cm tall, taper to a point. Plant has brown-purple seed heads and rhizomatous roots with numerous 2 cm-3 cm long tubers (nuts) along its length. Forms dense colonies that smother other plants, also removes nutrients and moisture from the soil. Dispersed mainly by cultivation equipment though locally through rhizome and tuber growth.

### Rice paper plant

*Tetrapanax papyrifer*



An evergreen rounded shrub or small tree that grows to less than 8 m tall. Stems are densely covered in hairs when young, becoming more or less hairless with prominent leaf scars when older. Leaves are large and rounded, heart-shaped, with toothed margins and (3-12) deep lobes. Leaves are densely hairy on both surfaces when young, becoming more or less hairless above when mature, and are held on long stalks. Tiny white flowers (autumn) are held in white, woolly, ball-like clusters on a large, branched stem that extends beyond the foliage, and are followed by clusters of spherical black berries. It can tolerate part shade, has a vigorous growth rate and grows into thicket by suckering. It is spread by suckers and can out shade other native plants. Often found in disturbed forest and shrubland, forest margins, stream banks, urban areas, roadsides and wastelands.

## Plants

### **Saltwater paspalum**

*Paspalum vaginatum*



Semi-aquatic, saline-tolerant perennial grass with long-creeping stems. The leaf blade (3 cm-8 cm long and 1 mm-2 mm wide) has a leathery texture and grey-green colouring. The ligule is scarcely tapered and shortly bluntly pointed, with a collar with small tufts of hairs. Panicles of two erect spreading spikes. It can form dense swards on open mudflats, and along the banks of creeks to the upper limit of the tidal salt wedge.

### **Smilax**

*Asparagus asparagoides*



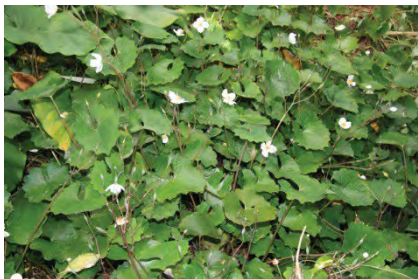
A scrambling or twining perennial that grows up to 3 m tall in supporting shrubs or hedges. The leaves are actually green, flattened leaf-like stems. Flowers are dense clusters of small, greenish-white, followed by red berries each containing two to eight tiny black seeds. Tough long-lived tubers re-sprout at will and the plentiful seeds are distributed widely via birds. Also spread by soil and water movement. Forms dense patches and smothers other species.



## Plants

### Snow poppy

*Eomecon chionantha*



Low-growing herbaceous perennial developing from long underground rhizomes. Small, oval, leathery leaves have scalloped edges, and stems ooze orange sap if crushed or broken. Long flower stems support pure white, four-petaled flowers (3 cm-4 cm across) with bright golden stamens. Very vigorous with a dense, matted root system that smothers small native plants. Extensive network of underground rhizomes make it difficult to control. Spread via garden dumping, vegetative spread and possibly seed.

### Thistle species other than variegated thistle

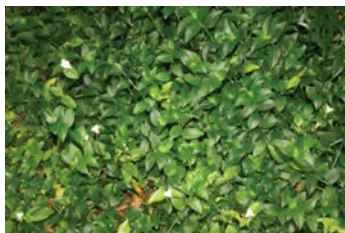
*Cirsium spp.*



A group of flowering plants characterised by leaves with sharp prickles on the margins. Prickles often occur all over the plant, on surfaces of the stem and flat parts of leaves. Flowers are generally pinkish purple. Generally considered an agricultural pest as if unmanaged thistles can dominate pasture. Expensive and time consuming to control. Seed is dispersed via wind and also spread by rhizome movement.

### Tradescantia

*Tradescantia fluminensis*



An aggressive groundcover with dark, shiny, smooth leaves. Produces white triangular flowers with three petals in spring. The succulent trailing stems root easily at every node. Creeping and mat forming habit and rapid establishment from fragments smothers other ground dwellers and shades out other species preventing establishment. Spread via fragment including water movement and dumped vegetation.

## Plants

### Tree of heaven

*Ailanthus altissima*



Erect, deciduous tree with smooth, grey, striped bark. Leaves have up to 20 pairs of opposite leaflets on a stem. Clusters of yellow-green flowers produced from December to January, followed by seeds in pink/tan papery, winged sheaths. Tree has a strong smell similar to peanuts or cashews. Grows rapidly and forms dense thickets of suckering shoot. Copious seed is spread by wind.

### Tree privet

*Ligustrum lucidum*



Fast-growing, evergreen, hairless tree up to 15 m tall with distinctive warty lumps on stems. Dark green, oval, glossy leaves. Tiny, fragrant, creamy flowers from November to March, followed by bluish-purplish-black, berry-like fruits coated with a powdery bloom which produce many highly-viable seeds. Fast growing and very long-lived, it forms dense tall stands. Spread via birds, dumped vegetation and contaminated soil.

## Plants

### Tuber ladder fern

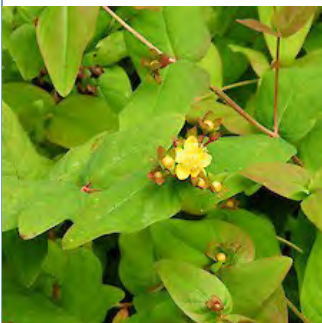
*Nephrolepis cordifolia*



Terrestrial or epiphytic fern. Upright ladder-like fronds with serrated, divided leaflets. Scaly rhizomes produce many long runners and round, hairy, potato-like tubers. It crowds out ground covers, shrubs and other ferns and can contribute to streamside erosion. Spore spread is probably minor but runners and tubers are spread through dumped vegetation, contaminated soil and occasionally water.

### Tutsan

*Hypericum androsaemum*



A small, perennial, hairless, semi-evergreen shrub that grows up to 1.5 m tall with fibrous roots and no rhizomes. Stems are semi-woody, winged, usually reddish, and often lax. Fragrant stalkless ovalish leaves are opposite, usually bluish underneath and usually turn red in autumn. Yellow, 5-petalled flowers (15 mm-25 mm diameter) with long stamens appear from November to February, followed by round red berries (1 cm diameter) that ripen to black and contain cylindrical or curved seeds (9 mm-10 mm long). It produces many, long-lived, well dispersed seed. Tolerates semi-shade, hot or cold temperatures, high to moderate rainfall, damage and grazing (rare).

Risk areas include disturbed forest and shrubland, low-growing habitats, tussockland, bare land, and rocklands, particularly high rainfall areas. Invades regenerating sites, forms dense stands, and prevents establishment of native plant seedlings. Usually succeeded by taller vegetation, but is persistent in shorter habitats.

### Velvet groundsel

*Roldana petasitis*

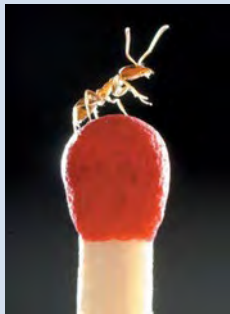


Erect, bushy, perennial shrub, up to 2.5 m tall, with large round, velvety leaves up to 20 cm across, and showy bunches of yellow daisy-like flowers followed by fluffy seed heads. Both the upper and lower surfaces are covered in short hairs, giving them a velvety texture. As the plant matures it forms dense cover which shades out and suppresses other species. Spread via windborne seed and dumped vegetative waste. Stems can take root and form new plants.

## Animals

### Argentine ants

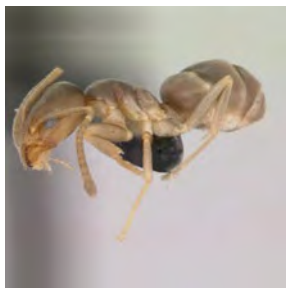
*Linepithema humile*



Argentine ants were first found in Auckland in 1990. Very small, approximately 2 mm-3 mm long, and light to dark honey-brown, they move in trails up to five or more ants wide and travel up trees and buildings. Argentine ants have now moved to various parts of New Zealand and ants rank highly as a domestic nuisance. They cause many issues including chewing on irrigation pipes, contaminating food products, robbing hives of honey and predated on bees. Complex to control and often require specialist skills to eradicate.

### Darwin's ants

*Doleromyrma darwiniana*

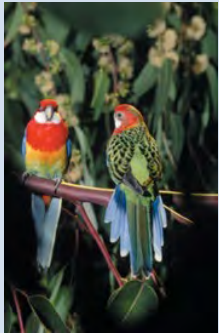


Native to Australia, Darwin's ants are thought to have arrived in New Zealand during the 1970s and are now established at many sea ports including Mount Maunganui. They are 2 mm long, with dark brown heads and light brown bodies and legs. Similar to Argentine ants, but Darwin's ants produce a foul odour when crushed. Found in cities and urban areas where they enter homes in search of sweet foods. Incapable of stinging but will occasionally enter houses in large numbers. Attain large densities in urban gardens and may displace other invertebrates. Tends aphids and mealy bugs and may also spread disease.

## Animals

### Eastern rosella

*Platycerus eximius*



Australian parrots first established in Dunedin around 1910 and later around Auckland in the 1970s. Vividly coloured, with a loud, carrying call and swift, undulating flight, eastern rosellas are larger and much more colourful than native parakeets. White cheek patches, a scalloped yellow-green back, pale green rump and yellow and green belly. Eastern rosellas are thought to compete with native species for food and or nesting sites. They can also cause localised damage to grain and fruit crops.

### Feral cat

*Felis catus*



Cats were brought to New Zealand by the early European explorers from 1769 onwards, as ships were heavily infested with rats and they were used to help control them. Later, farmers took them from the cities to release them on rabbit-infested farmland which assisted their dispersal into the wild. Adult feral cats range between 2 kg-5 kg and have a head and body length between 440 mm-514 mm. Highly effective predators that eat a variety of species of birds, bats, lizards, weta and other insects.

## Animals

### Magpies

*Gymnorhina tibicen*



Introduced in 1864, the magpie now occupies most parts of the country. There are two species - the black-backed and white-backed magpie. In the Bay of Plenty, the white-backed magpie is the most common. Approximately 420 mm long, they have a black and white plumage, black below and mainly white above, except for a black head and black outer third of tail. Magpies are noted for their aggressive nature towards other birds and people, particularly during the nesting season.

### Hedgehog

*Erinaceus europaeus*



The hedgehog is an unmistakable small nocturnal mammal, grey-brown in colour with its back and sides entirely covered with spines. They are 150 mm-250 mm in overall body length and reach a maximum of around 1 kg. Males tend to be slightly larger than females. In winter, hedgehogs hibernate, winter dens are under tree roots or deep dry litter, in rabbit burrows or other dry refuges. In spring, as early as September, the long breeding season starts, yet young may be born as late as May. Two litters can be produced per year, each of four to seven young, however, juvenile mortality is high. The young are independent after about seven weeks. Hedgehogs' preferred habitat is lowland pastoral areas, and they become less common with increasing altitude. Hedgehogs are mainly insectivorous, with key prey items being slugs, snails and larger insects, but will eat almost any animal substance and some plant material. Hedgehogs are proven to be a major predator on eggs of riverbed breeding birds such as banded dotterel and black-fronted tern, and have been known to kill and eat chicks of a variety of ground-nesting birds. Hedgehogs also prey upon lizards, particularly in cooler periods when lizard activity slows. Native skinks are particularly at risk.

## Animals

### Mustelids (Ferrets, Stoats, Weasels)

*Mustela furo*, *Mustela ermine*, *Mustela nivalis*



Introduced between 1879 and 1885 to help combat the huge rabbit problem in New Zealand at that time. Ferrets are the largest of the three species and have a creamy white under-fur, black legs and usually black-tip guard hairs over the body. Body length is between 350 mm-420 mm and they can weigh from 600 g-1200 g. Stoats and weasels are similar in colour, brown on top of the body with a white under-belly and brown legs. A stoat has a bushy black tip on its tail, the weasel does not. Stoats vary between 250 mm-290 mm long and weigh between 207 g-325 g.

Weasels have a body length between 180 mm-220 mm and weigh from 57 g-126 g. Major threat to the survival of New Zealand's native birds and animals. Flightless birds (such as kiwi) and birds that nest in holes (such as kaka) are particularly vulnerable. Also a threat to backyard chickens and pets such as guinea pigs or rabbits. Ferrets can carry bovine tuberculosis (TB) and all mustelids carry parasites and toxoplasmosis which can cause miscarriages in sheep and illness in humans.

### Plague skinks

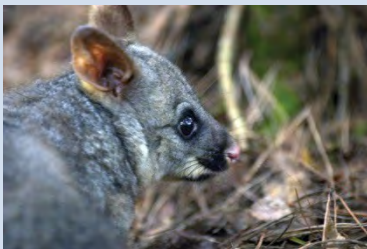
*Lampropholis delicata*



Formally known as Rainbow skinks, Plague skinks are small lizards originating from Australia. Found in New Zealand in the 1960s. Similar to native skinks but have one large scale on the top of their head, as opposed to native skinks which have two. Approximately 4 cm long, not including their tails, and are usually brown or grey-brown with an iridescent rainbow or metallic sheen. Plague skinks are able to reach high population densities in a relatively short time, potentially competing with our native lizard species for food, habitat and space.

### Possums

*Trichosurus vulpecula*



Widespread throughout most parts of New Zealand. Liberated to the wild in the mid-1800s to establish a fur trade. Body length from 650 mm-930 mm and weight anywhere between 1.4 kg-6.4 kg. Colour is mainly a variation of black and grey. Existing in very high numbers, the impact of possums is significant and varied. They predominately eat leaves but also consume buds, flowers, fruit/berries and nectar. Also known to consume eggs and chicks and invertebrates such as weta and endangered native snails. Carriers of bovine tuberculosis. The cost for control of possums is in the tens of millions.

## Animals

### Norway and Ship rats

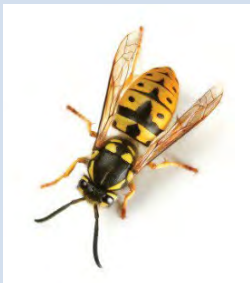
*Rattus rattus*, *Rattus norvegicus*



The Norway rat and ship rat arrived in New Zealand in the mid to late 18th century. Norway rats seldom weigh over 400 g and have a head and body length of 140 mm-250 mm, depending on locality. They are very good swimmers and can climb, but prefer the ground or basements (as opposed to ship rats which are excellent climbers). Ship rats average between 123 g-166 g, with a few being over 200 g. Average body length, including the head, is between 148 mm-188 mm, depending on locality. Ship and Norway rats have a major impact in New Zealand because they are omnivores – eating birds, seeds, snails, lizards, fruit, weta, eggs, chicks, larvae and flowers. The varied diet of rats also makes them competitors with native wildlife for food sources.

### Wasps (Common wasp, German wasp, Asian paper wasp, Australian paper wasp)

*Vespa spp.*, *Polistes spp.*



The German and Australian paper wasp arrived in New Zealand in the late 1880s. The common and Asian paper wasps are more recent arrivals. The German wasp is slightly bigger than a honeybee, with a black head and thorax. Its abdomen has yellow and black stripes with black spots. The common wasp is similar, but does not have separate black dots on the abdomen.

Australian paper wasps are black and reddish brown in colour. Asian paper wasps are black and yellow-striped, but smaller than the German and common wasps. Paper wasps fly with their long legs dangling beneath their bodies. Wasps are a major problem in some beech forests where they consume massive amounts of honeydew which is an important food for native birds, bats, insects and lizards. Wasps also eat huge numbers of native insects and have even been seen killing newly hatched birds. By eating so much, they upset the natural food chain of the forest. They affect outdoor human activities, which in turn affects tourism and other economic activities. In addition, wasps have direct impacts on the primary sector, particularly through their effect on honey.



## Animals

### Wild mice

*Mus musculus*



Commonly known as the house mouse or “kiore-iti”. Most mice are light brown but they may also be white, grey or black. They are rampant in the New Zealand bush and, because they live close to food sources, are also commonly found in households. They are most active in the evening or at night. Mice may also carry diseases and are a threat to the food sources of native animals; they have also been known to predate on native lizards.

### Wild rabbits

*Oryctolagus cuniculus*



Rabbits were introduced in the mid to late 1800s. In Otago they rapidly became the number one pest, forcing many farmers off their land. A small to medium-sized herbivore, wild rabbits are usually grey-brown with a white underbelly and white under their tail. The average weight is about 1.5 kg, with the males being slightly larger. They are prolific breeders and can produce 45 to 50 young each year; however, the mortality rate in young rabbits is very high (upwards of 80% die soon after birth.). They are very significant agricultural and ecological pests, competing very effectively with livestock for pasture. On average, 7-10 rabbits consume as much as one ewe. Rabbits also provide a stable food source for mammalian carriers of bovine tuberculosis. Burrowing and scrapes cause extensive damage on erosion-prone soils, so much so that agricultural land can be rendered useless. Rabbits also threaten ecological values where they browse on vulnerable native plant communities, and whereas year-round prey they support the mammalian predators which are contributing to the extinction of many New Zealand native birds and animals.

# Appendix 2:

## Quick reference to all rules included in this RPMP

A breach of any rules in this RPMP creates an offence under section 154N (19) of the Biosecurity Act 1993.

Rules 6 to 9 are generic rules that apply to all pests listed in the exclusion, eradication, progressive containment or sustained control programmes in this RPMP.

Rules for progressive containment pests (also see Rules 6-9)	
<b>Rule 1</b>	The occupier in charge of a craft moving to, or within Bay of Plenty waters must ensure the hull is sufficiently cleaned and antifouled, so that the hull has no more than a slime layer and/or barnacles. This is to support the progressive containment of clubbed tunicate and Mediterranean fanworm.
<b>Rule 2</b>	All aquaculture equipment (including ropes and floats) used within Bay of Plenty waters must not have been used outside Bay of Plenty waters or used within a known pest incursion zone in the Bay of Plenty. This is to support the progressive containment of clubbed tunicate and Mediterranean fanworm.
<b>Rule 3</b>	<p>Occupiers must destroy the following pests in areas where these pests are included as progressive containment pests:</p> <ul style="list-style-type: none"><li>• Apple of sodom (entire region)</li><li>• Boneseed</li><li>• Climbing spindle berry (Map 13)</li><li>• Darwin's barberry (Map 3)</li><li>• Egeria densa (Map 4)</li><li>• Hornwort (Map 6)</li><li>• Italian buckthorn (Map 7)</li><li>• Lagrosiphon major (Map 8)</li><li>• Lantana (Map 10)</li><li>• Lodgepole pine (entire region)</li><li>• Scots pine (entire region)</li><li>• Dwarf mountain pine (entire region)</li><li>• Mountain pine (entire region)</li><li>• European larch excluding sterile hybrids (entire region)</li><li>• Old man's beard (Map 14)</li><li>• Variegated thistle (entire region)</li><li>• Wild kiwifruit</li><li>• Woolly nightshade (Map 12)</li></ul> <p>Occupiers must comply with Rule 3 unless a property specific pest management agreement has been agreed and signed between the occupier and the Council.</p>

## Rules for sustained control pests (also see Rules 6-9)

### Rule 4

In areas where the following pests are included as sustained control pests:

- Blackberry (entire region)
- Ragwort (entire region)
- Gorse (entire region)

Occupiers must destroy these pests either:

- 1 Within 10 m of any property boundary where the adjoining occupier is also destroying blackberry, ragwort and/or gorse, or
- 2 If required by a written direction from an authorised person.

Occupiers must comply with Rule 4 unless a property specific pest management agreement has been agreed and signed between the occupier and the Council.

### Rule 5

In areas where the following pests are included as sustained control pests:

- Climbing asparagus (entire region)
- Climbing spindle berry (Map 13)
- Lantana (Map 10)
- Reed sweet grass (entire region)
- Old man's beard (Map 14)
- Woolly nightshade (Map 12)
- Douglas fir (entire region)
- Bishops pine (entire region)
- Maritime pine (entire region)
- Ponderosa pine (entire region)
- Corsican pine (entire region)
- Radiata pine (entire region)
- Wild ginger (entire region)

Occupiers must destroy these pests either:

- 1 Within 200 m of any property boundary where the adjoining occupier is also destroying climbing asparagus, climbing spindle berry, lantana, reed sweet grass, old man's beard, woolly nightshade, douglas fir, bishops pine, maritime pine, ponderosa pine, corsican pine, radiata pine and wild ginger, or
- 2 If required by a written direction from an authorised person.

Occupiers must comply with Rule 5 unless a property specific pest management agreement has been agreed and signed between the occupier and the Council.

## Rules for sustained control pests (also see Rules 6-9)

### Rule 5A

In areas where the following pests are included as sustained control pests:

- African club moss (entire region)
- Banana passionfruit (entire region)
- Cape ivy (entire region)
- Cathedral bells (entire region)
- Chilean rhubarb (entire region)
- Chinese windmill palm (entire region)
- Chocolate vine (entire region)
- Coastal banksia (entire region)
- Cotoneaster (entire region)
- English Ivy (entire region)
- Himalayan fairy grass (entire region)
- Male fern (entire region)
- Mile-a-minute (entire region)
- Mistflower (entire region)
- Monkey apple (entire region)
- Moth plant (entire region)
- Palm grass (entire region)
- Periwinkle (entire region)
- Rough horsetail (entire region)
- Royal fern (entire region)
- Self-propagated Phoenix Palm (entire region)
- Strawberry dogwood (entire region)
- Sydney golden wattle (entire region)
- Taiwan cherry (entire region)

- 1 Occupiers must destroy these pests if required by a written direction from an authorised person.

Occupiers must comply with Rule 5A unless a property specific pest management agreement has been agreed and signed between the occupier and the Council.

## Generic Rules for exclusion, eradication, progressive containment or sustained control programmes

### Rule 6

No person shall:

- 1 Move or interfere with any article or substance left in place by an authorised person for the purpose of monitoring, controlling, or eradicating a pest listed in a pest management programme in this RPMP, or
- 2 Move, or allow to be moved, any live pest listed in this RPMP, or any machinery, vessel, organism or goods that are contaminated with any pest listed in a pest management programme in this RPMP, or
- 3 Keep, plant, propagate, distribute or release any pest listed in a pest management programme in this RPMP or assist in their maintenance including tending, feeding or sheltering them.

## Rules for sustained control pests (also see Rules 6-9)

### Rule 7

To avoid the spread of freshwater fish pests and freshwater plant pests, the following provisions apply:

- 1 No person shall leave boat trailers in any water body other than for the purposes of launching and/or retrieving boats.
- 2 No person shall transport ballast water from any water body to any other location.
- 3 All occupiers of vessels or craft entering any water body within the Bay of Plenty shall ensure their vessels or craft (including trailers) are free from freshwater pest fish and freshwater pest plants including fragments.
- 4 All occupiers of vessels or craft using a boat ramp with a self-certification checkpoint must complete a self-certification form\*. Before launching the self-certification form must either be submitted electronically or displayed in the vehicle used to launch the vessel or craft.\_

\*Electronic self-certification forms are available at [www.boprc.govt.nz/ccd-self-cert](http://www.boprc.govt.nz/ccd-self-cert). Paper self-certification forms are available either at the self-certification checkpoint or the Bay of Plenty Regional Council offices.

### Rule 8

All persons must notify Council once they become aware they have received products contaminated by marine pests.

### Rule 9

Occupiers shall destroy all wilding conifers on land they occupy, prior to cone bearing, if:

- 1 The wilding conifers are located within an area which has had control operations carried out to destroy wilding conifers, and
- 2 The control operations were publicly funded (either in full or in part).

# Appendix 3: Delivering the strategic direction

This Table shows how the Council's pest management strategic direction is being delivered at the time this RPMP was developed.

Strategic direction	Council delivers this by:
<p><b>Prevent pests entering and establishing in the Bay of Plenty.</b></p>	<ul style="list-style-type: none"> <li>• <b>National Pest Plant Accord.</b> Monitoring of nurseries, garden centres and florists throughout the region looking for pest plants that are listed in the RPMP or in the Pest Plant Accord<sup>2</sup>.</li> <li>• <b>Support Biosecurity New Zealand with 'new-to-New Zealand' pest incursions.</b> Council (along with other Regional and Unitary Councils') is party to a Memorandum of Understanding with Biosecurity New Zealand to provide incursion response services in the event of a 'new-to-New Zealand' pest incursion such as Queensland fruit fly or brown marmorated stink bug.</li> <li>• <b>Surveillance for 'new-to-region' pests.</b> Proactive surveillance of high risk sites such as old garden centres, transfer stations and road laybys to allow early detection of new pests and naturalisations.</li> <li>• <b>National interest pest responses.</b> Support Biosecurity New Zealand with surveillance for and the eradication of any 'National Interest Pests'<sup>3</sup> detected in the region e.g., cape tulip, salvina.</li> <li>• <b>Check, clean, dry.</b> With support from Biosecurity New Zealand, implement an education and behavioural change programme over the summer months to prevent risk behaviours that may spread aquatic pests such as didymo and hornwort<sup>4</sup>.</li> </ul>
<p><b>Manage pests when it is practical and cost effective to do so, using Council's regulatory and/or operational roles.</b></p>	<ul style="list-style-type: none"> <li>• <b>Regional Pest Management Plan.</b> Implementation of the Regional Pest Management Plan as reported annually.</li> </ul>

<sup>2</sup> See the following link for more information about the National Pest Plant Accord <https://www.biosecurity.govt.nz/protection-and-response/long-term-pest-management/national-pest-plant-accord/>

<sup>3</sup> See following link for more information on National Interest Pests <https://www.biosecurity.govt.nz/protection-and-response/long-term-pest-management/partnerships-programmes-and-accords/>

<sup>4</sup> See following link for more information on 'Check, Clean, Dry' <https://www.biosecurity.govt.nz/travel-and-recreation/outdoor-activities/check-clean-dry/>

Strategic direction	Council delivers this by:
<p><b>Support the efforts of landowner/occupiers and communities to manage established pests and prevent pest spread.</b></p>	<ul style="list-style-type: none"> <li>• <b>Environmental Programmes (supporting biodiversity on private land).</b> Advice, funding and support provided to landowners to control pests where they threaten biodiversity sites on private land under Council's Environmental Programmes Grants Policy.</li> <li>• <b>Advisory Services.</b> Advice provided to landowners and community groups on how to control Advisory pests.</li> <li>• <b>Pest Plant Biocontrol.</b> Biocontrol agents are released and spread to assist their establishment and impact on pest plants.</li> <li>• <b>Predator Free 2050.</b> Advice and support on possum, rodent and mustelid control provided to community Care Groups and landowners participating in Predator Free 2050 initiatives.</li> <li>• <b>Community Care Groups.</b> Advice, funding and support given to community Care Groups to control pests that are impacting on sites of community value through Council's Care Group and Environmental Enhancement Fund programmes.</li> </ul>
<p><b>Work in partnership with other parties that have pest management responsibilities and interests.</b></p>	<ul style="list-style-type: none"> <li>• <b>Tauranga Moana Biosecurity Capital.</b> Council is a founding member of the biosecurity "coalition of the willing". A broad collaboration between iwi, community groups, industries, businesses, agencies, educators, scientists and others striving to protect the Bay of Plenty from new pest incursions and minimise the impact of pests already here.</li> <li>• <b>Kauri dieback.</b> Council works with Tiakina Kauri (as management agency), the Department of Conservation and Biosecurity New Zealand to monitor for kauri dieback disease.</li> <li>• <b>Kiwifruit Industry.</b> Council partners with the kiwifruit industry, through Kiwifruit Vine Health, to control wild kiwifruit within the Bay of Plenty region.</li> <li>• <b>Catfish Killas.</b> Council partners with Te Arawa Lakes Trust to educate and encourage active participation by our communities in protecting the Te Arawa Rotorua Lakes from the impacts of aquatic pests.</li> <li>• <b>Manaaki Kaimai Mamaku Forests</b> Council is partnering with Department of Conservation, Waikato Regional Council, iwi and community groups to improve the health of the Kaimai / Mamaku forests by controlling pests.</li> <li>• <b>National Wilding Pines Programme</b> Council is partnering with Biosecurity New Zealand, Hawkes Bay Regional Council, Department of Conservation, iwi and landowners to control wilding pines in the upper Rangitāiki Catchment.</li> <li>• <b>National Wallaby Programme</b> Council is partnering with Biosecurity New Zealand, Waikato Regional Council, Department of Conservation and Te Arawa Lakes Trust to manage dama wallabies in the central North Island.</li> <li>• <b>Top of the North Marine Biosecurity Partnership</b> Council partners with Northland Regional Council, Auckland Council, Waikato Regional Council, Gisborne District Council, Hawkes Bay Regional Council, Biosecurity New Zealand and Department of Conservation to improve the management of, and prevent the spread of, marine pests in the upper North Island.</li> </ul>



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