



BIOSECURITY PLANTS

1 ACTIVITY OVERVIEW

1.1.1 The Biosecurity Plants programme seeks to safeguard the regional economy and environment from damage caused by harmful pest plants, and to prevent the transformation of productive land and the region's natural biodiversity by invasive plants. This is achieved by delivering the following four programmes:

- Incursion response – Responding to 'new to the region' incursions and assisting in transitioning to long-term management if appropriate;
- Regional Pest Management Plan implementation – Implementing pest plant management programmes described in Horizons' **Regional Pest Management Plan (2017)** (RPMP);
- Biological Control Programme – Undertaking biological control agent programmes including supporting community-led projects, and distribution and monitoring of agent populations across a wide range of pest plant species; and
- Advice, promotion and awareness – Providing advice and information to the public about best-practice pest plant control and behaviour to prevent the spread of pest plants.

1.1.2 The pest plant management activity links with a range of national and regional policies and strategies as further outlined in the Natural Resources and Partnerships Group's Operational Plan.

2 ANNUAL PLAN TARGETS

2.1.1 A summary of the Annual Plan targets and progress to date is provided in Table 1 below. Progress reporting for the zero-level goal is limited to an annual tandem summation of all managed sites against their previous status (age, risk class) and the physical number and area of plants.

Table 1: Biosecurity Plants Annual Plan targets for 2020-21.

Performance Measures for Levels of Service	2020-21	Progress to Date
Any exclusion category pest plants that are found in the region are promptly managed, with an initial response plan completed within two weeks and then enacted (if not enacted before two weeks).	Number of response plans required. Percentage where a response plan has been produced within two weeks (target 100%) Number of response plans enacted with their specified timeframes (target 100%)	One response in progress after <i>Sagittaria platphylla</i> , an aquatic plant, confirmed in Pioneer Highway Drain and Mangaone River. Response plan initiated, control works begun.
Number of managed sites at zero-levels increases for pest plants identified for eradication in the Regional Pest Management Plan.	Overall percentage of managed sites at zero-levels (ZL) increases by 10% per annum, from the start date of the RPMP; 2020-21 target is 71%.	ZL% at start of the year ¹ 84%; (2019-20 result: 84%)
Number of managed sites at zero-levels increases for pest plants identified as progressive containment – mapped in the Regional Pest Management Plan.	Overall % of managed sites at zero-levels increases by 10% per annum from the start date of the RPMP. 2020-21 target is 70%	ZL% at the start of the year, 73%. (2019-20 result: 73%)
Financially support the national bio-control agent development programme and report annually to Council on this programme.	Financial support provided and annual report to Council	Work in progress.
Monitoring of some released biological agents will be completed to assess establishment and host damage (using the national protocol).	20 assessment plots will be monitored	No sites assessed through this period and no sites assessed to date.
Pest plant enquiries received are responded to within three working days.	95% of enquiries will be responded to within three working days	100% of enquiries responded to within three working days. Achieved.

3 INCURSION RESPONSE

3.1 Programme overview

3.1.1 The Incursion Response programme aims to provide immediate and effective assistance for all national or regional biosecurity incursions and any transitions to long-term management. This is a function detailed by a Memorandum of Understanding between the **Ministry for Primary Industries** (MPI) and regional councils.

¹ The Annual Report to Environment Committee is available at:
<http://www.horizons.govt.nz/HRC/media/Media/Agenda-Reports/Environment-Committee-2019-14-08/19118%20Annex%20C%20Biosecurity%20Activity%20Plants.pdf>

3.2 Activity Update

- 3.2.1 The sea spurge (*Euphorbia paralias*) incursion at Himatangi is now one of five locations along the west coast of New Zealand. Ministry for Primary Industries has recently issued media releases asking beach-goers look out for this plant.
- 3.2.2 We visited 12 of 23 infection zones (paddocks) in late January with the detector dog. These are either recently turned over by ploughing or requiring checking. Those not under surveillance are either very low risk or under crop and not able to be checked.

4 REGIONAL PEST PLAN IMPLEMENTATION

4.1 Programme overview

- 4.1.1 The Biosecurity Plants activity is strongly linked to the delivery of Horizons' Regional Pest Management Plan 2017-37, which can be reached via the following link². The activity reporting is arranged in sections as per the RPMP groupings for pest management programmes as outlined in Table 2. More information on these groupings is on page 25 of the RPMP.

Table 2: Activity Summary for Biosecurity Plants.

Aim	Programme	Key Deliverables	YTD Progress
Preventing establishment	Exclusion Programme	Keep unwanted pest plants that are not present out of the region.	Searching for: No locations/plants this period.
Eradicating	Eradication Programme	Controlling and reducing the prevalence and extent of Eradication species.	Species targeted for control this period are alligator weed, climbing <i>alstromeria</i> and woolly nightshade.
Rolling back	Progressive Containment Programme	To contain and reduce the geographic distribution of the pest plant to an area over time.	Species controlled this period are banana passionfruit, boneseed, Darwin's barberry and pest pines.
Maintaining low densities	Progressive Containment – un-mapped	Ongoing control to reduce species' impact and spread to other properties.	Site inspections for production plants and responding to boundary complaints.

² <http://www.horizons.govt.nz/HRC/media/Media/Pests/2017-2037-Regional-Pest-Management-Plan.pdf>

4.2 Activity Update

Preventing establishment - Exclusion Programme

- 4.2.1 For pest plants that are in New Zealand but not in our region, our goal is to prevent establishment. We aim to detect these plants before they become widely established in the region and facilitate a quick response through appropriate funding that will enable the control or management of these species on ratable land. There are 11 species in this category and Chilean needle grass is an example.
- 4.2.2 During alligator weed surveillance of the Mangaone Stream in November, *Sagittaria platphylla* plants were discovered and identification confirmed. Staff had recently organised a plant identification course with NIWA and were able to put the training to good use. Subsequent investigation in neighbouring ponds, lakes and wetlands revealed what we believe to be the source in the Pioneer Drain. Two other locations were found below the confluence with the Mangaone River, bringing the total locations to four with the largest being 600 m².
- 4.2.3 This plant is a known aggressive spreader and modifier of waterways, severely blocking channels and diverting flow. Staff are working with **Palmerston North City Council (PNCC)** as the plant is located in a drain. PNCC arborists have trimmed adjacent amenity trees and operations staff have located a nearby dump site and will provide traffic management when excavating.
- 4.2.4 Dumping to land and desiccating on top of weed-mat is the preferred method of treatment as in-situ herbicide treatment is not effective. The plant spreads predominantly by seed but also has corms, all of which will need to be contained once the site is disturbed.



Figure 1 Pioneer Drain *Sagittaria platphylla* infestation. (C.Davey)

Eradication Programme

- 4.2.5 High-risk species that should be totally removed from the region are managed via the Eradication programme. There are 18 species in this category and at the start of the year our information reported that 84% of the 1,624 sites were at zero levels.
- 4.2.6 The alligator weed eradication programme in the Mangaone River has continued with monthly surveillance by ground and in-channel canoe and wading. All plants discovered are dug and removed and any roots not able to be collected are treated with herbicide.

4.2.7 Two in-channel sites that are not suitable for hand removal or herbicide application were scheduled for digger removal and dumping directly to Bonnie Glen landfill in early February 2021.



Figure 2 A site near the confluence of the Apollo drain and the Mangaone River, removed by hand. (K.Hoggard)

- 4.2.8 The Taumarunui infestation adjacent to the effluent ponds is reducing, with a total of 47 plants over five hectares discovered post-Christmas. The area was searched by an under-development alligator weed detector dog and this was useful for us to assess its potential as a future surveillance tool. The area was set to be blanket-sprayed in late January to remove all vegetation so any late-season growth can be more easily found.
- 4.2.9 The Chilean rhubarb control programme is planned to finish around Christmas. While still discovering small amounts of new sites, historically worked areas are much reduced. One site that had previously required a contracting firm and nearly 1,000 litres of spray mix is now producing only a few seedlings.

Rolling back – Progressive Containment programme

- 4.2.10 Where population levels or difficulty and expense of control prevent achievement of a region-wide zero-density objective, high-threat pest plant species will be managed under a Progressive Containment objective. For each species managed this way, an active management zone is defined within which the pest plant species will be controlled wherever it is found, as in the Eradication designation
- 4.2.11 The Progressive Containment programme is split into the species that are mapped (e.g. old man's beard and banana passionfruit) and the species that are unmapped (e.g. gorse and tutsan).

Progressive Containment - Mapped Species

- 4.2.12 Eleven Progressive Containment species fall into the mapped category (e.g. old man's beard). At the start of the year the data showed 73% of 2,721 sites were at zero levels in the zones actively managed for these species. A more robust method of defining sites has been enabled by the new version of the WEEDS software that the team use to track and report activity. As a result, the number of individual sites was altered to combine search areas with multiple smaller sites within a homogenous operational area and count them as one site; this meant a reduction in site numbers. The measure of the percentage of our sites at zero levels remains a sound interpretation of progress towards our targets, and the newer data measures of "Extent" (Maximum area of known distribution) and "Area" (Area of occupancy by organism) allow the team to better communicate the hectares of land to be searched for pest plants, which should decrease over time.

- 4.2.13 Evergreen buckthorn is controlled through to late spring. A push-back programme at Waitarere Beach to align with the boneseed control programme has begun to control and/or remove evergreen buckthorn from the urban and peri-urban areas. Most plants are cut and treated or have chemical applied to the trunks of standing trees (basal barking). Occasionally, plants which would die standing and create safety issues are removed instead.
- 4.2.14 Evergreen buckthorn is a known dune invader as well as a problematic plant in most hedgerow and bush environments. Targeted control programmes are now the main focus to arrest spread and protect vulnerable habitats.



Figure 3 Too large to remain on site, two loads of evergreen buckthorn were removed from this small section. (K.Hoggard)

- 4.2.15 The Ministry of Primary Industries-Horizons contract has been agreed, and has been signed by Council along with the contracts with our partners, and work is well underway. At the end of the reporting period, nine of 46 operational areas had been completed while the majority of other areas have had work started and are ongoing.
- 4.2.16 The national wilding conifer control and Horizons pest conifer programmes are well underway. Work has been focused on the Waimarino District from the upper Rangitikei River through to Hihitahi. Work has included survey, aerial and ground control. At the blocks previously worked by the programmes, the numbers of coning trees and total numbers of trees are much reduced from when initially controlled.

4.2.17 As the national conifer programme expands into areas wider than those treated as part Horizons previous control efforts, we are discovering small numbers of mature trees, either planted a number of years ago or wilding into wetlands and creek edges from these plantings. The national programme will go a long way to protecting the investment ratepayers have made in reducing the burden of seed from these pest conifers.

Progressive Containment – Unmapped Species

4.2.18 Fifteen Progressive Containment species fall into the unmapped category (e.g. gorse). These species are generally widespread but some parts of the region are clear and it is desirable to keep them clear. This programme does not have a strong information base to report on progress against these weeds. Horizons’ involvement is primarily through regulation via the Good Neighbour or Clear Land rules of the **Regional Pest Management Plan 2017-37 (RPMP)** and through non-regulatory advice or in some cases by biological control. For occupiers of large land areas, farmers and other organisations we have the ability to allow responsibility to be acknowledged and actions planned via Approved Management Plans. The intent of these plans is to meet the objectives of rules and contribute to the outcomes of the RPMP by eradicating or reducing the spread of pest plants from the place/s occupied or managed by the plan-maker.

4.2.19 Species we dealt with during the October through December reporting period included blackberry and gorse. A small number of Good Neighbour complaints were received.

Table 3: Summary of Good Neighbour Rule activity for the period July 2020 through June 2021.

Description	Reporting Period				2020-21 totals
	1	2	3	4	
Boundary complaints received and actioned outside of compliance	2	1	0	0	3
Required to Clear notices (RTCs) issued	0	0	0		0
Notices of Direction (NODs) issued	0	0	0	0	0
Notices resolved in this period	0	0	0	0	0

4.2.20

4.2.21 Staff have spoken to territorial authorities (councils) and Crown agencies in Horizons region about their Pest Management Plan obligations and agreement has been reached on pest programmes with five of the seven councils. The agreements are in the form of **Approved Management Plans (AMPs)** which set out how the entity will achieve its RPMP obligations. The Crown entities – **Department of Conservation (DOC)**, KiwiRail, **Land Information NZ (LINZ)** and **NZ Transport Agency (NZTA)** are engaged and are at various stages of reaching an agreement.

Table 4 Summary of Pest Management Plan documents with Territorial Authorities and Crown Entities.

TA/ Crown Agency	Approved Management Plan	Memorandum of understanding	Notes
Ruapehu District Council	27/08/2020		
Rangitikei District Council			Rangitikei District Council using external consultant to develop AMP
Whanganui District Council	27/08/2020		
Manawatu District Council	30/09/2020	Consultation	
Tararua District Council	3/09/2020		
Palmerston North City Council			Waiting to receive AMP
Horowhenua District Council	1/09/2020	Consultation	
NZTA – Southern	27/08/2020		
NZTA - Northern			Consultation staff dependant
KiwiRail			Being worked on
DOC			Consultation - ongoing
LINZ			Consultation - ongoing

4.2.22 Horizons has drawn up a Memorandum of Understanding template for use with district councils. This was deemed necessary to ensure we were giving due recognition to the requirements within the RPMP and utilising a robust document which sets out long-term expectations of operating under the RPMP and pest plant management for all parties. The document is with two councils for consultation, and following feedback the remaining councils will be offered copies through ongoing RPMP engagement.

Progressive Containment – Unmapped aquatic species

4.2.23 Aquatic pest plants are also part of the Progressive Containment – Unmapped grouping of the RPMP and are grouped together on the basis that they are aquatic pests managed the same way for the same objectives. Eel grass, egeria, hornwort, lagarosiphon and reed sweetgrass are aquatic pest plants included in the Progressive

Containment section of the RPMP 2017-37. Their distributions are not yet mapped with any certainty and our aim is to progressively contain or reduce the number of sites affected across the region, to prevent further spread and to reduce adverse effects on the environment.

- 4.2.24 Horizons organised a well-attended aquatic plant identification course, with financial support via an Envirolink grant. The course was delivered by Paul Champion from the **National Institute of Water and Atmosphere (NIWA)** at the Foxton Beach Marine Club and a subsequent field trip through the Horowhenua and Manawatu. Attendees came from all lower North Island regional councils – Taranaki, Hawkes Bay, and Greater Wellington; Horowhenua District Council, Palmerston North City Council, Department of Conservation as well as representatives from Forest and Bird, Wildlife Foxton and the Manawatu Estuary trustees.
- 4.2.25 The more knowledgeable eyes looking for our target pest plants the better. Within one month of this course staff noticed the 'new' incursion of *Sagittaria platphylla* (as outlined in an earlier section).



Figure 4 Plant identification course field trip to a private pond with large infestation of *Sagittaria subulate* (not in the image). (C.Davey)

5 BIOLOGICAL CONTROL

5.1 Programme overview

- 5.1.1 Many entrenched pest plants in the region are now the target of our Biological Control programme, which aims to assist the development of insects and diseases to control a wide range of pest plants and to release, distribute and monitor those agents within the region.

5.2 Activity Update

TRADESCANTIA RUST

- 5.2.1 The Whanganui tradescantia rust release site has rust spores on adjacent plants. While damage at this stage is minimal, finding established fungi is encouraging and will add to the insect agents building up numbers in the region.

TUTSAN BEETLE

- 5.2.2 Very encouraging establishment results have recently been found in the Ruapehu and Rangitikei tutsan beetle release sites (Figure 5). This is very good news for this programme which has been pushing for 13 years to have new agents available for biological control of tutsan. However, we continue to monitor for the tutsan moth with no success. Staff have been bolstering numbers with new introductions of beetles at previous release sites and finding localised damage, which implies year-on-year survival. We will now be monitoring locations for signs of numbers building as well as spread to occur.



Figure 5 Tutsan beetle starting to diminish tutsan leaves in Ruapehu District. (D.Alker)

GREEN THISTLE BEETLES

5.2.3 Green thistle beetles continue to self-spread around the region, with staff even finding thistles on weekends in far-flung places such as the middle of the Tongariro forest. This ability of this agent to disperse has meant we can now wind back our introduction programme. When staff come across healthy populations of green thistle beetles they collect a few to supply to farmers on our waiting list, as a good opportunity to inform them about the beetles and show landowners what to look out for (Figure 6).



Figure 6 The Donaldson and Steel families in Whanganui District receiving a fresh batch of green thistle beetles harvested from marsh thistles. (D.Aiker)

6 INVESTIGATION

6.1 Programme overview

6.1.1 A number of plants present in the region may have the potential to become economically and ecologically damaging. This output contains the Pest Plant Investigation programme and the **National Pest Plant Accord** (NPPA).

6.2 Activity Update

6.2.1 Kitchener Park is a valued bush and river edge asset to the Manawatū, though unfortunately at risk from one of the species we have investigated. *Phragmites karka* was assessed over a number of years for its threat potential, distribution and control options. Given the many challenges this plant presents due to its location and control difficulty, it did not qualify for inclusion as a pest in the Regional Pest Management Plan.

6.2.2 Planted for amenity and erosion control purposes, *Phragmites karka* has been present for many years in the Rangitikei River below Bulls, the Whangaehu River and many other small infestations as well as upstream from Kitchener Park in the Makino

Stream. The local trust is very concerned at its immediate and future transformation of the park's vegetation as it can grow to four metres high, form impenetrable dense thickets at the exclusion of all else. As Horizons has experienced, control options are very limited and those that do exist are labour-intensive and costly.

- 6.2.3 Horizons organised a meeting on-site with a NIWA aquatic plant specialist, trust representatives, Manawatu District Council staff and contractors and a number of Horizons staff from river management, biodiversity and pest plant teams. The river management team are equally concerned about the effect on water carrying capacity within the stream and the modification of river training structures.
- 6.2.4 Control trials have been suggested to attempt to find the most suitable techniques for this specific place, taking advice from previous Horizons trials and Auckland Council's eight-year eradication programme.

7 ADVICE, PROMOTION AND AWARENESS

7.1 Programme overview

- 7.1.1 The aim of the Awareness Programme is to alert the community to the issues, threats and solutions for weed management, to ensure region-wide best-practice pest plant management. This includes responding to enquiries from the community and undertaking collaborative projects.
- 7.1.2 The Check Clean Dry freshwater advocacy programme started on October 1 and has been very busy through the summer months engaging with river and lake users as well as campers staying around the central plateau.
- 7.1.3 Staff visited Kumeroa School to teach pupils about poisonous plants, and spent a day teaching young Rangitane men how to control plants in their reserves and plantings.

7.2 Activity Update

- 7.2.1 The pest plant team received 59 enquires during October through December and all were attended to within three working days.
- 7.2.2 There were many responses to our press articles regarding Chilean needle grass surveillance and alligator weed; as well as enquires driven by visible and flowering plants such as field horsetail and pink ragwort at that time of year.

8 COLLABORATIVE PEST PLANT CONTROL

8.1 Programme overview

8.1.1 Collaborative projects undertaken by Horizons staff and external stakeholders provide a team approach to managing weeds in some challenging environments. Working with others and providing advice and leadership has delivered some excellent results that otherwise would not have eventuated. A summary of this activity is provided in Table 4.

8.1.2 Desert Road imagery for gorse was flown in late October, orthorectified through December and is with Landcare Research awaiting processing and map production. This will be the second distribution map of gorse and we will use this to track change over time. It is expected to be completed by end of March.

8.1.3 Horizons is to pick up oversight of the Rangitikei Horsetail Project as Landcare Trust have lost a staff member and will not be replacing them in time for the completion of this project. The current project is to close this financial year, however there is a need to continue with breeding and mass rearing of weevils to bolster the in-field populations until we can confirm establishment.

Table 5: Collaborative Pest Plant Control Projects.

Project	Key Deliverables	YTD Progress	Horizons Role
Wilding Conifer – Central North Island Regional Coordination Group (RCG) – Fundholder and Chair	<p>Work with partners and other stakeholders re:</p> <ul style="list-style-type: none"> ▪ Planning for management unit (MU) activity and reporting ▪ Managing the budget ▪ Annual meeting scheduled <p>Deliver on annual work programmes as agreed by RCG. In 2020-21 the Tongariro MU (\$434,100) and for the Kaimanawa MU (\$691,250) of National Programme funding with a total work package across all partners of \$2,299,902.</p>	<p>Ministry of Primary Industries - Horizons contract agreed to be signed by council; partners' contracts signed and work well underway.</p> <p>As at time of writing nine of 46 Operational areas have been completed with the majority of others having work started and ongoing.</p>	<p>Contracted to Government as the agency for managing Central Government funding for this activity in the broader area.</p> <p>Horizons' Kaimanawa MU operational areas are completed with a reduction in coning trees and area of occupancy compared to previous visits. The Tongariro is a new management unit in 2020-21 and is partially complete.</p>
Waimarino-Tongariro National Park Darwin's barberry control programme	Coordinated control across public and private land to increase protection of previously cleared areas.	Programme underway.	Organiser of control programmes on private land.
Rangitikei Horsetail Group	Support group activity with population releases and monitoring.	Meeting held and planning for release of more weevils this spring and final field day for Sustainable Farming Fund (SFF) funding planned for summer.	Partner to group and access to weevils and advice.
Desert Road Invasive Legume Control Group	<ul style="list-style-type: none"> ▪ Relationship between parties maintained. ▪ Memorandum of Understanding maintained and implemented. ▪ Coordinated action in priority areas undertaken against target species. 	Meeting held and collaboration agreements progressed with the intention for multiple parties to use a single contractor. Gorse distribution and abundance map endorsed for creating. Flights this October and map produced by end of March.	Coordinate meetings and collaborative activities.
Freshwater Biosecurity Partnership Programme and Check, Clean, Dry (CCD) advocacy programme.	Representing Horizons at a national forum to champion behaviour change and freshwater protection. Attendance at high-risk events and strong advocacy with the main users of waterways in our headwater areas.		Provide and manage the programme in the greater region.

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