

## Rural Advice

# 1 Rural Advisory Team

## 1.1 Annual Plan targets

2014-15 Annual Plan Targets And Summary Of Achievements To Date	
Target	Progress to date
Provide advice in response to an estimated 200 requests in a timely, consistent and relevant manner principally to the agricultural sector	261 requests received for the 2013-14 year and 15 for July 2014.
Organise or participate at eight rural professional workshops	1 completed
Collate and update relevant activities of agricultural Good Environmental Practice	Ongoing with Dairy NZ, Hort NZ and vegetable growers in particular
Support the development of nutrient management plans as targeted catchments and conversions (new to 2014-15) consents are required.	Assisted with 5 applications
Facilitate the completion of 15 Tiraumea and Pohangina catchment Environmental Farm Plans by 31 August 2014	5 completed

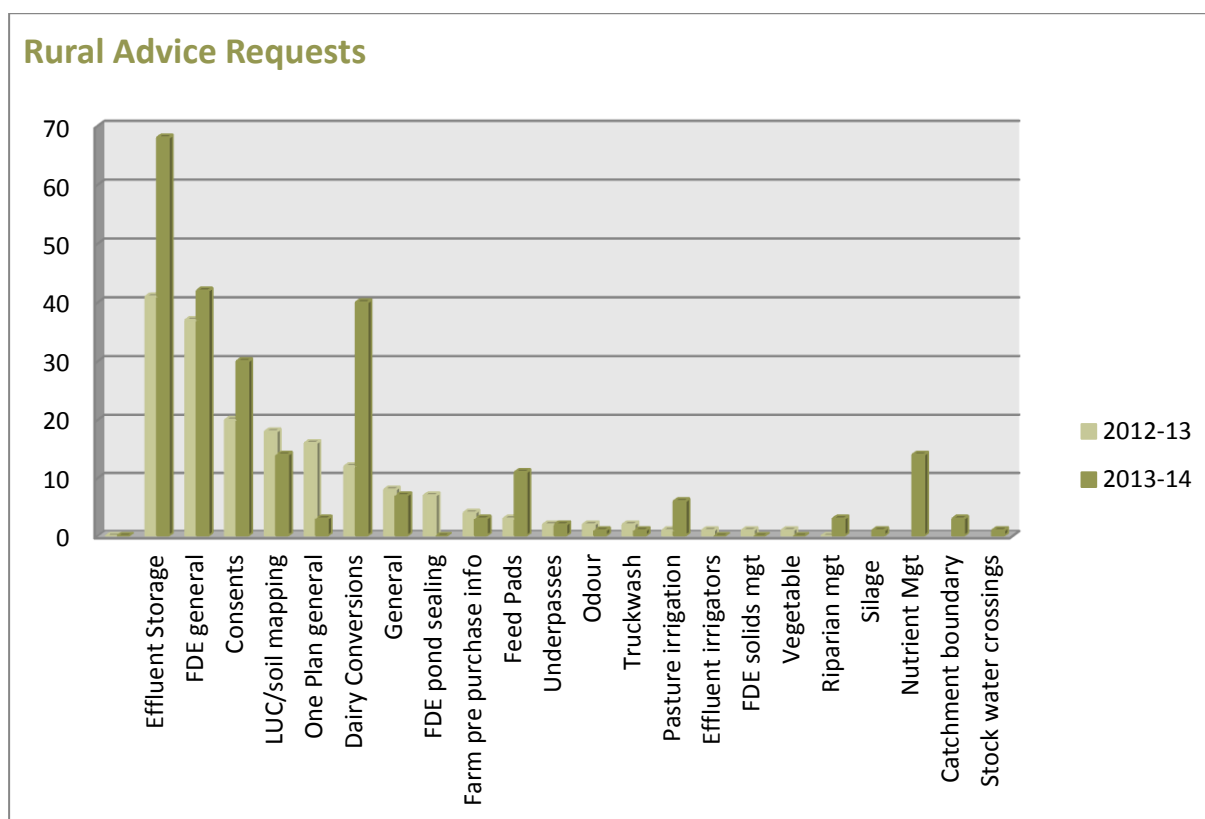
## 1.2 Activity Report

- 1.2.1 Between October 2009 (the inception of the Rural Advisory Team) and end of July 2014, 1023 individual requests for advice have been received. This averages 18 requests per month.
- 1.2.2 Between 1 June 2014 and 31 July 2014, 20 individuals requested advice on 8 issues. Requests for advice on all facilities related to farm dairy effluent continue to dominate with dairy conversion enquiries prominent (Table 1). Of these conversion enquiries five are considered “probable” in that we know consultants have been engaged to work with the farmer to prepare a nutrient management plan.

Table 1: Requests received during the reporting period – June - July (inclusive) 2014

Requests for rural advice	
Request Type	Enquiries/ requests
Effluent pond storage	1
Farm dairy effluent - general	3
Irrigation	1
Consent advice	3
Dairy conversion information	5
Pre farm purchase	1
Feedpads	3
Underpass	1

1.2.3 Graph 1 shows the completed 2013-14 year compared to the previous year (2012-2013) in relation to the distribution of requests received. There were very significant increases in some areas - effluent storage (66% increase), dairy conversions (230% increase), nutrient management, pasture irrigation, and feedpads. And while the percentage increases for the latter three are large, actual numbers are small in comparison to total requests received.



Graph 1: Rural Advice Requests 1 July 2012 – 30 June 2013 compared to 1 July 2013 – 30 June 2014

1.2.4 Freshwater Clean-up fund project – Tiraumea and Pohangina catchment Environmental Farm Plans (EFP): Five completed EFPs have been received with the remaining 9 imminent. Table 2 summarises project progress.

**Table 2: Environmental Farm Plan project – Tiraumea and Pohangina - progress summary**

EFP development progress	
Activity	Progress
Farms "signed up"	14 of 16
Soil maps completed	14
EFPs completed	5
EFPs in preparation	9
Final milestone 31 August 2014	14 plans to be completed

1.2.5 A draft report on the aggregated results for the Mangatainoka catchment EFPs project will be completed by 31 August 2014. Progress has been much slower than anticipated due to competing deadlines and additional analysis of the data.

**General:**

1.2.6 Staff have:

- Contributed to ongoing discussions and workshops on implementation of One Plan nutrient management provisions.
- Attended the first meeting of the Sustainable Farming Fund Fluxmeter Project, Project Management Team. Foundation for Arable Research (FAR) is the project manager for this project, which is aiming to assess nutrient leaching from arable and vegetable crops over 3 years. Three sites have been identified as likely sites within our region: Horowhenua and Ohakune (vegetables) and Bulls (cropping).
- Presented to a nutrient management workshop for crop and vegetable growers organised by FAR and HortNZ.
- Presented to the NZ Property Valuers Conference.
- Contributed to a farmer meeting in Taihape.

Peter Taylor

**MANAGER RURAL ADVICE**





## Freshwater Management

## 2 Waterway Enhancement & Protection

### 2.1 Annual Plan targets

Table 1: Annual Plan Performance measures for the 2013-14 year and for July 2014 for the Regional Freshwater programme (excluding the Freshwater Clean-up Fund work for the Manawatu Catchment).

Measure	2013-14	Target	2013-14	July
	Final Results		%	2014
Target additional focus waterway for water quality improvement	1	1	100%	1
Assist dairy farmers to deliver on their Dairying and Clean Streams Accord obligations	12	5	240%	4
Work with individuals, community groups and iwi to improve waterways	126	10	1260%	13
Environmental Grant applications supported	62	20	310%	6

### 2.2 Activity Report

#### Focus waterways / water quality improvement:

2.2.1 The Coastal Rangitikei sub-zone was added to the non-regulatory focus catchment programme for the 2013-14 financial year. This corresponds with the Freshwater Operational plan to have non-regulatory programmes align with the 'priority' catchments for nutrient management in the One Plan. There are a number of voluntary riparian improvement projects underway in this wider catchment and the team has been working with these landowners, providing advice and some Environmental Grant assistance. The new subzone for the 2014-15 financial year will be the Porewa sub-catchment of the Rangitikei.

#### Assist dairy farmers to deliver on their Dairying and Clean Streams Accord obligations:

2.2.2 The team have worked with 12 dairy farmers this year, 5 with advice on riparian fencing and/or planting only, and 7 with Environmental Grant assistance (for work that does not fall into the Clean Streams Accord obligations or on run-off blocks). Other dairy farmers in the Manawatu Catchment have been visited and assisted as discussed in the Manawatu River Accord and Manawatu Freshwater Clean-up Fund section of this agenda.



**Photo 1: Riparian planting on a previously fenced stream in the Coastal Rangitikei catchment.**

### **Work with individuals, community groups and iwi to improve waterways:**

2.2.3 Over the 2013-14 year, 126 individuals, community groups and iwi have been visited or contacted and provided advice with 64 of these outside of the Environmental Grants process. Each of these individuals or groups is provided with specific advice regarding freshwater projects, generally addressing the best methods to improve water quality or aquatic habitat such as stock exclusion, planting, weed and sediment control advice. Each individual or group is only counted once per year, despite many projects involving numerous contacts and/or visits as a project progresses.

### **Environmental Grant applications supported:**

2.2.4 A total of 62 water quality Environmental Grant projects were completed in the 2013-14 year (Table 3). Twenty-four more applications were received but for various reasons, such as the drought or landowners' time or financial constraints, they have decided to delay them until next year, when they will be reassessed for funding. This is an expected occurrence, as landowners' priorities and commitments often change throughout the course of a year.

2.2.5 Over the 2013-14 year, this regional programme (excluding the Manawatu Accord Clean-up Fund work) has completed a total of:

- 62 grants supported;
- 32.7 km of stream fencing;
- 40,065 natives planted in riparian areas;
- 2 fish passes installed (Awarua Stream, Whanganui) and one fish friendly floodgate (Tangimoana); and 3 new fish passes scoped for completion late 2014.
- Three community planting events.

These tables compare well to the 2012-13 year where this programme completed 27 km of fencing and planting of 31,000 plants in riparian areas.

2.2.6 In combination with the Accord and Clean-up Fund projects below, this activity achieved 142.8 km of stream fencing, planting of over 76,000 riparian plants over the year and 8 fish pass repairs.

**Table 3: Summary of completed and proposed work in focus catchments for the regional freshwater programme for 2013-14 (excluding the Manawatu Freshwater Clean-up Fund project work).**

Focus Catchment	Is this also a priority catchment in the One Plan?	Year to date length of fencing completed (km)	Year to date no. of natives planted	Comments
Awarua	No	1.14 km	2706	2 fish passes completed also
Coastal Rangitikei	Yes	2.42 km	3917	Also one fish friendly floodgate at Tangimoana in conjunction with the Operations team.
Hautapu	No	0.30 km	191	1 large job no longer going ahead due to the drought. Monitoring programme also completed to identify target areas.
Kaitoke	Yes	0.62 km	3370	Willows controlled over summer also
Lake Horowhenua	Yes	2.85 km	2590	In addition, completed willow control, signage and tree releasing work. Several Clean-Up Fund projects initiated.
Manganui o te Ao	No	2.01 km	0	
Mowhanau	No	4.74 km	1790	Willow control also completed, with fencing and natives to follow in 2015
Waikawa	Yes	3.16 km	1834	
Waiwiri	Yes	0 km	0	Only tree releasing this year
Regional Freshwater Grants (outside focus catchments)		15.44 km	23,667	A larger number than normal of these projects did not eventuate this year, many due to the drought over the summer.
<b>TOTAL 2013-14 year</b>		<b>32.7 km fencing complete</b>	<b>40,065 plants</b>	

### **Nga Whenua Rahui Work:**

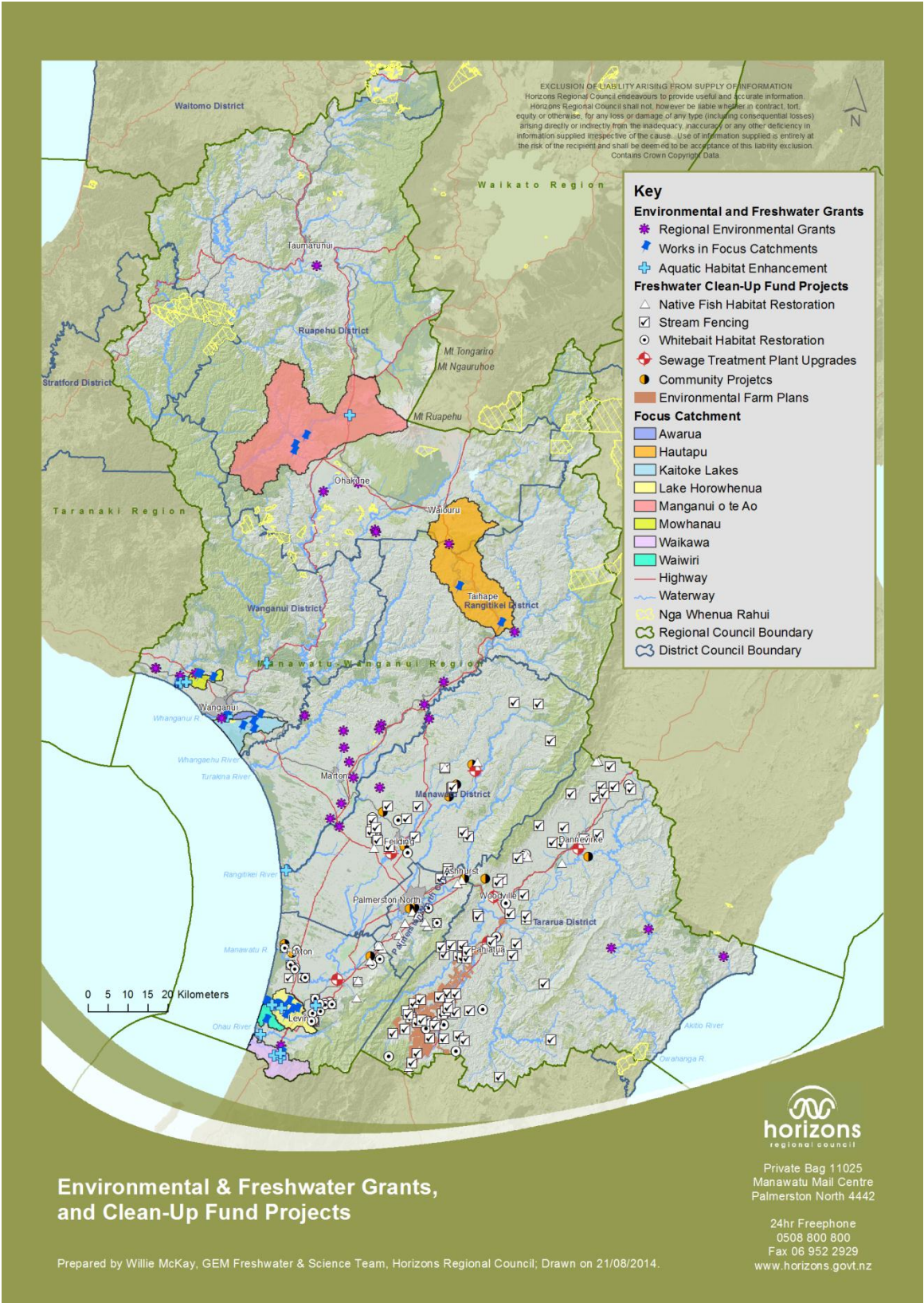
2.2.7 As discussed in the Freshwater Operational Plan, one of the Freshwater staff members undertakes work on contract to Nga Whenua Rahui (NWR), assessing proposals for protection of bush remnants, wetlands and stream sites on Maori owned land. Over this period fence line preparation work began on the 5 new sites approved earlier this year. A number of sites have been selected for intensive goat control work, to be undertaken by NWR contractors. Assistance was provided towards organising the works and to familiarise the contractors with the various sites.

### **Freshwater projects - combined map:**

2.2.8 The geographical distribution of this work across our three projects – focus catchments, sites of significance aquatic and regional freshwater grants, as well as the Manawatu Accord work, are displayed in Map 1.



Photo 2: Fencing and planting on the Awarua Stream.



**Map 1: Overview of works completed over 2013-14 as a part of the Freshwater implementation programme (including the Manawatu Freshwater Clean-up Fund project works over the 2 years of that project).**

## Enhancing the efficacy of works:

- 2.2.9 A key part of the work programme is to enhance native fish populations through physical works to enhance habitat, improving fish passage and protecting and enhancing spawning sites.

### Fish passage works

- 2.2.10 Over the year, the Freshwater and Science team have completed a range of work to identify locations where there are barriers to fish passage and worked with experts on how to best remedy these. A planned next step is to test the efficacy of the fish passes that have been installed. During the reporting period Horizons has been successful in obtaining an Envirolink grant to get advice on how best to do test the efficacy of fish passage barrier fixes and has put out a press release to encourage whitebaiters to spare a few whitebait to complete these tests.

### Identifying inanga spawning sites

- 2.2.11 Inanga are one of the five species of native fish that make up the whitebait catch and contribute around 90% of the whitebait caught.
- 2.2.12 During the 2012-13 year staff from Horizons hosted a workshop with experts from the Department of Conservation and the University of Canterbury to learn about the best techniques to find inanga spawning sites and also to learn how to then best manage these sites for inanga spawning. This led to the successful location of what was at the time thought to be the largest known spawning site in New Zealand, at Whirokino on the Manawatu River.
- 2.2.13 Following on from the lessons learned, during the 2013-14 year staff searched for and mapped inanga spawning sites on the Kai iwi, Mowhanau, coastal Rangitikei, Ohau and Waikawa streams (Map 2). This has provided valuable information for the targeting of the work programme for riparian protection work in the future (see attached map). Similar searches for the 2014-15 year are currently being scoped.



Photo 3: Whitebait catch



Map 2: Broad location of identified inanga spawning sites along the west coast of the region.

## 2.3 Waterway enhancement and protection summary

Project	Key programme deliverables	Progress to Date
Target additional focus waterway for water quality improvement	1 new target catchment added to programme	<ul style="list-style-type: none"> <li>The Coastal Rangitikei was added as a new focus waterway in 2013-14.</li> <li>In 2014-15, the Porewa is the new focus waterway.</li> </ul>
Assist dairy farmers to deliver on their Dairying and Clean Streams Accord obligations	Assist 5 dairy farmers	<ul style="list-style-type: none"> <li>Outside of the Manawatu Catchment as a part of the regional programme, the team worked with 12 dairy farmers in 2013-14, 5 with advice on riparian fencing and/or planting only, and 7 with Environmental Grant assistance.</li> </ul>
Work with individuals, community groups, or iwi to improve waterways	Work with 10 individuals, community groups or iwi	<ul style="list-style-type: none"> <li>Over the 2013-14 year, 126 individuals, community groups or iwi were visited or contacted and provided advice with 64 of these outside of the Environmental Grants process.</li> </ul>
Environmental Grant applications supported	20 Environmental Grants supported	<ul style="list-style-type: none"> <li>62 Environmental Grants supported over the 2013-14 year.</li> <li>Overall these grants have completed over 32 km of fencing and planted over 40,000 plants in riparian areas. A further 3 fish pass solutions have been implemented.</li> <li>In combination with the Manawatu Clean-up Fund projects below this activity achieved over 142 km of stream fencing, and planting of more than 76,000 riparian plants over the year, as well as eight fish pass repairs.</li> </ul>
Nga Whenua Rahui	Works completed in accordance with the contract to Nga Whenua Rahui (NWR) including assessing proposals for protection of bush remnants, wetlands and stream sites on Maori owned land.	<ul style="list-style-type: none"> <li>Over this reporting period fence line preparation work began on the 5 new sites approved earlier this year.</li> <li>A number of sites have been selected for intensive goat control work, to be undertaken by NWR contractors, and logistical assistance provided.</li> </ul>
Enhancing the efficacy of works	Identify fish barriers and determine effective solutions Identify spawning sites for restoration/protection	<ul style="list-style-type: none"> <li>Work was undertaken over the 2013-14 year to identify new sites where there are fish passage issues and work undertaken with experts to identify solutions for these sites.</li> <li>Staff located inanga spawning sites on the Kai iwi, Mowhanau, coastal Rangitikei, Ohau and Waikawa streams.</li> <li>Similar searches in the 2014-15 year are currently being programmed.</li> </ul>

Clare Ridler  
**FRESHWATER COORDINATOR**

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**FRESHWATER AND SCIENCE MANAGER**

### 3 Manawatu River Accord and Manawatu Freshwater Clean-up Fund

#### 3.1 Activity Report

##### Manawatu River Leaders' Forum:

###### Context

3.1.1 An overview of the timelines for the development of the Manawatu River Leaders' Forum and the subsequent action plan is provided in Figure 1. The action plan is overseen by the Manawatu River Leaders' Forum with meetings twice annually. Progress on the Manawatu River Leaders' Forum Action Plan was reported on in April 2014 via a public report back that was accompanied by an independent science report on the state and trends of water quality in the Manawatu.

###### Update

3.1.2 Three applications to the Community Environment Fund were submitted during the reporting period to seek funding to advance the goals of the Manawatu River Leaders' Accord. Decisions on the applications are likely to be made in August 2014. The applications ranged from seeking further funding to:

- Support community projects to be completed, building on the success of the 14 community projects completed as a part of the Manawatu Freshwater Clean-up Fund projects;
- Increase iwi involvement in water management, through supporting a part time position to facilitate communication between iwi and the regional council, and further funding for support of implementation projects; and
- Facilitate the updating of the Manawatu River Leaders' Accord Action Plan.

3.1.3 The next meeting of the Manawatu River Leaders is to scheduled for 13 November 2014.

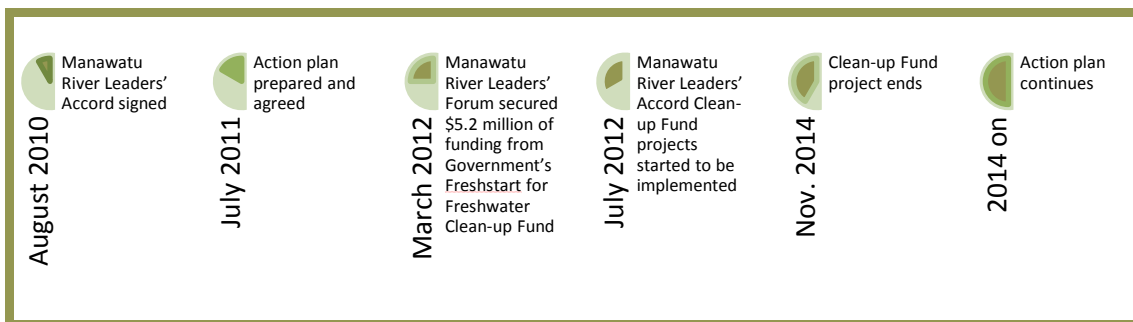


Figure 1: Manawatu River Leaders' Forum Action Plan timeline

## **Freshwater Clean-up Fund:**

### Context

- 3.1.4 The Manawatu River Leaders' Accord draws \$5.2 million from Central Government's Fresh-start to Freshwater Clean-up Fund, which is part of a \$30 million package to improve the water quality in the wider Manawatu River Catchment. The project is made up of 8 sub projects:
1. Wastewater treatment plant upgrades within Tararua District (Woodville, Dannevirke and Pahiatua);
  2. Wastewater treatment plant upgrades within Manawatu District (Feilding and Kimbolton);
  3. Land treatment of Shannon's wastewater within Horowhenua District;
  4. Stream fencing (primarily working with sheep and beef farmers and on dairy run-offs);
  5. Native fish habitat restoration;
  6. Whitebait habitat restoration;
  7. Environmental Farm Plans; and
  8. Community projects.
- 3.1.5 More information on how these projects link to outcomes is available to Councillors upon request.
- 3.1.6 The project is managed via a Steering Group and a Governance Group. The Governance Group consists of the Chair and Chief Executive of Horizons Regional Council, Independent Chair of the Manawatu River Leaders' Forum and a representative from Ministry for the Environment (MfE). The Steering Group consists of two staff from Horizons Regional Council and one staff member from MfE.

### Update – Project Status

- 3.1.7 Over the 2013-14 year the Manawatu Clean-up Fund project completed a significant amount of work on all projects. Overall the size of the project work in 2013-14 was larger than anticipated as work from 2012-13 was carried forward into the year. Further work was also able to be added to the project through the expenditure of unallocated funding (from savings, interest accumulation and lower allocation to community projects than expected). A brief project summary is provided below and a more detailed project update and map showing the locations of the works is provided in Appendix 1.
- 3.1.8 Two of three District Council projects completed all their MfE co-funded milestones e.g. the Shannon land purchase and Feilding's wastewater treatment upgrades. Tararua District Council (TDC) made steady progress across the projects and had revised project plans and timeframes approved during the year, allowing for completion in November 2014.
- 3.1.9 Horizons' projects all progressed well over the year and to accommodate the additional workload were provided an extension to continue to the end of August 2014.
- The Stream Fencing project completed over 160 km of fencing, including over 73 km of substantial fencing. On an equivalency basis, this amount nearly doubles the target of 200 km of 2-wire equivalent fencing. Further stream fencing continues, utilising the additional unallocated funds.
  - The Native Fish and Whitebait Habitat Restoration projects have both progressed well and exceeded their targets for fencing and planting work.
  - The Native Fish project has six fish pass solutions programmed for completion over July and August to ensure all targets are met.

- The Environmental Farm Plan (EFP) exceeded its target of 80 EFPs, completing 83 of the 88 farms in the Mangatainoka catchment. A further 15 farm plans are now being undertaken in other sub-catchments of the Manawatu, with savings made.
- Of the 15 funded community projects, nine were complete at the end of June 2014, 1 applicant withdrew from the process and 6 are on track for completion by the end of August.

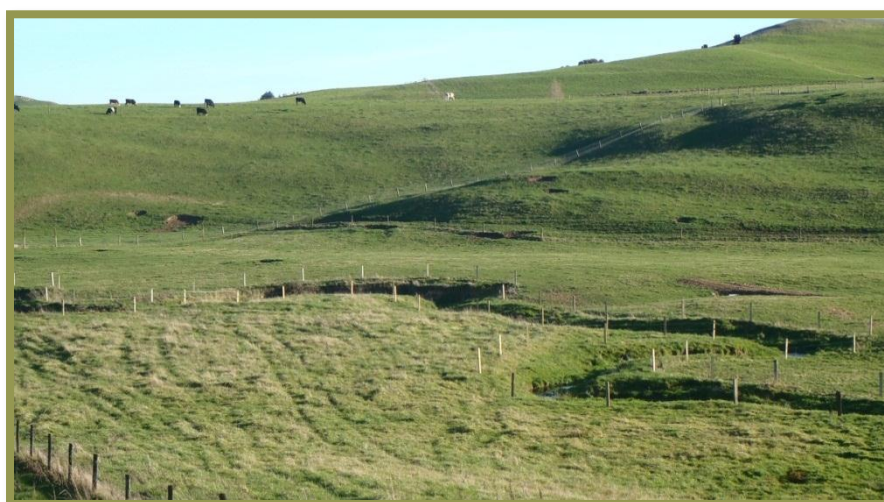
3.1.10 Overall the Stream Fencing, Native Fish and Whitebait Habitat Restoration projects of the Manawatu Freshwater Clean-up Fund have completed the installation of 178.6 km of fencing, two fish passes, two fish friendly floodgates and 46,938 plants within the first two years of the Clean-up Fund project (Table 1).

**Table 4: Summary of completed works from the combined stream fencing, native fish and whitebait habitat restoration projects over the two years to 30 June 2014 showing the further commitments being worked on through July and August 2014.**

	Total Metres Fenced	Total Plants Planted	Fish Passage Repairs
Completed by 30 June 2014	178,631	46,938	5
Committed	32,416	16,167	8
End of project predicted	211,047	63,105	13

Activity during the reporting period:

- 3.1.11 A variation to the contract deed between MfE and Horizons has been completed to enable changes to deadlines for the Horizons Regional Council led projects (end of August) and the Tararua District Council led projects (30th November 2014). Subsequent variations of contracts have been completed with Tararua District Council and some of the community project recipients.
- 3.1.12 The annual report for the project was drafted during the reporting period and is undergoing the independent audit process in August-September before being submitted at the end of September.
- 3.1.13 Over the months of June and July 2014, considerable focus has been placed on delivery of projects. This period has been by far one of the busiest during the project. As an example of this the stream fencing project delivered 97 km of fencing over the year, with 68 km being delivered in April, May and June of 2014.



**Photo 4: Two wire electric fencing**



Photo 5: Stream fencing and planting along Stony Creek



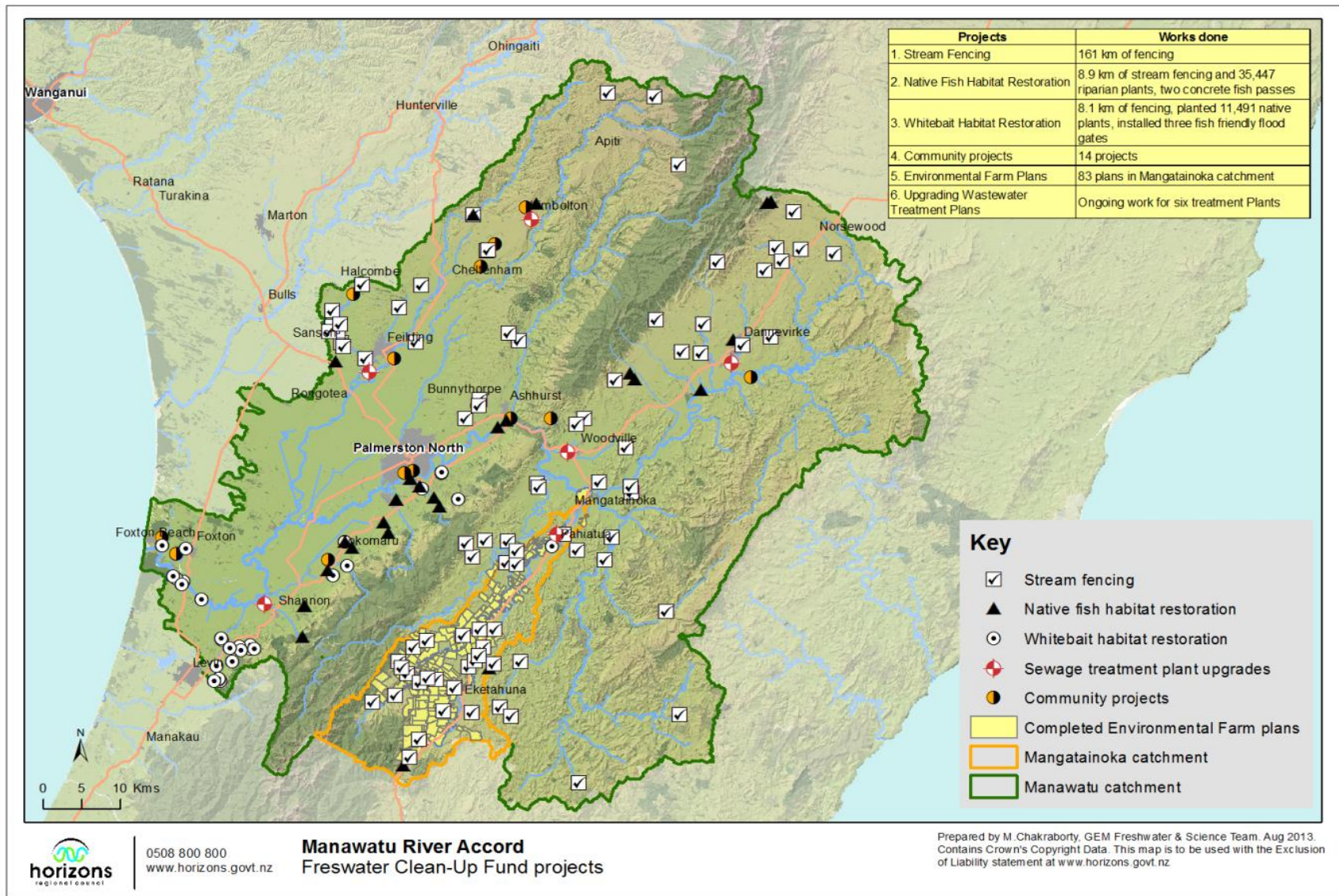
Photo 6: One of the fish pass solutions using mussel rope through a perched culvert in Koputaroa catchment.

Lucy Ferguson  
**FRESHWATER COORDINATOR**

Jon Roygard  
**FRESHWATER AND SCIENCE MANAGER**

### 3.2 Clean-up Fund summary as at June 30, 2014

Project	Key Clean-up Fund Programme Deliverables	Progress to Date
1. Tararua District Council	<ul style="list-style-type: none"> <li>■ Woodville treatment plant upgrades.</li> <li>■ Dannevirke land treatment.</li> <li>■ Dannevirke treatment plant upgrade.</li> <li>■ Pahiatua treatment plant upgrade.</li> </ul>	<ul style="list-style-type: none"> <li>■ Land treatment investigation completed. Pond lining complete, new baffles and aerators installed.</li> <li>■ Landowners identified, agreement signed. Consent application drafted. Design work for delivery of effluent underway</li> <li>■ Pond 4 lined, pond 3 on track for lining in October. Five aerators purchased to be installed in August/September.</li> <li>■ Land treatment investigation completed. Aerators ordered and delivered to site.</li> </ul>
2. Manawatu District Council	<ul style="list-style-type: none"> <li>■ Feilding treatment plant upgrades.</li> <li>■ Kimbolton treatment plant upgrades.</li> </ul>	<ul style="list-style-type: none"> <li>■ MfE co-funded milestones complete. Actiflo clarifier units and disc filter installed at the Feilding plant.</li> <li>■ Floating media installed at Kimbolton. Further equipment purchased for installation over the coming summer.</li> </ul>
3. Horowhenua District Council	<ul style="list-style-type: none"> <li>■ Land purchased for land treatment of Shannon's wastewater</li> </ul>	<ul style="list-style-type: none"> <li>■ MfE co-funded milestones complete. Land area identified and purchased 9 months ahead of schedule. Land treatment investigation completed. Consent process underway.</li> </ul>
4. Stream fencing	<ul style="list-style-type: none"> <li>■ 200 km of 2- wire equivalent fencing over 2 years.</li> </ul>	<ul style="list-style-type: none"> <li>■ 161.5 km completed over 2 years including 73 km of substantial fencing. Over 97 km of fencing delivered in year 2, with 68 km delivered in April, May and June of 2014. Programme is ongoing with a timeframe extension to spend additional funding from interest/unallocated funds. Farmer/external contributions averaged over 56% with over 790K from external sources. This well exceeds the target of 33% from externals.</li> </ul>
5. Native fish habitat restoration	<ul style="list-style-type: none"> <li>■ Landowner contact, weed control, 8 fish barriers remediated, 6 km of fencing, 5000 native plants planted.</li> </ul>	<ul style="list-style-type: none"> <li>■ Landowner contact has been made. A total of 8.9 km of riparian fencing has been completed and 35,447 plants have been planted. Two rock and concrete fish passes have been installed. A further 6 fish barriers are planned to be fixed either with mussel rope being installed or via total removal of the barrier. With these complete the project will have met all of its targets.</li> </ul>
6. Whitebait habitat restoration	<ul style="list-style-type: none"> <li>■ Implementation of work at two separate spawning sites. Includes weed control, fencing, planting and other spawning site enhancement.</li> </ul>	<ul style="list-style-type: none"> <li>■ As at 30 June 43 jobs had been completed. These included 8.1 km of fencing, 11,491 plants planted, 2 fish friendly floodgates have been installed and 1 weir removed. Whitebait habitat restoration has occurred at a range of sites throughout the catchment, including the Whirokino site where straw bales have been used successfully to enhance spawning habitat availability.</li> </ul>
7. Environmental Farm Plans	<ul style="list-style-type: none"> <li>■ Completion of 60-80 Environmental Farm Plans</li> </ul>	<ul style="list-style-type: none"> <li>■ The target of 80 EFPs has been exceeded with 83 EFPs completed by end of March. Additional work is now being undertaken in other sub-catchments of the Manawatu with the saving made in completing the work in the Mangatainoka sub-catchment. Eight farms in the Mangapapa Catchment have been soil mapped. The EFPs for these have been completed with budget from a separate programme. Work has started in the Tiraumea with 10 out of 11 dairy farmers signing on for a farm plan to be completed by the end of August. In the Pohangina catchment all 5 dairy farmers signed on.</li> </ul>
8. Community projects	<ul style="list-style-type: none"> <li>■ 8 community projects completed over 2 years</li> </ul>	<ul style="list-style-type: none"> <li>■ Fifteen community projects were approved for funding. One project applicant decided not to proceed with the project. Nine projects were completed by 30 June 2014 with the others in their final stages and due for completion by the end of August 2014.</li> </ul>



Map 1: Location of projects funded through the Manawatu Clean-up Fund over the 2 years of the project

## 4 Lake Horowhenua Accord and Lake Horowhenua Freshwater Clean-up Fund

### 4.1 Activity Report

#### The Lake Horowhenua Accord and Clean Up Fund

##### Context

- 4.1.1 The Lake Horowhenua Accord was signed on 4 August 2013. The Accord development was led by Horowhenua District Council and draws together five partners: the Lake Horowhenua Trustees (who represent the beneficial owners of the Lake); the Lake Domain Board; Horowhenua District Council; the Department of Conservation and Horizons Regional Council. The Accord has the following objectives:
- Return Lake Horowhenua as a source of pride for all people of Horowhenua;
  - Enhance the social, recreational, cultural and environmental aspects of Lake Horowhenua in a fiscally responsible manner that will be acceptable to the community of Horowhenua;
  - Rehabilitate and protect the health of Lake Horowhenua for future generations; and
  - Consider how to respond to the key issues, management goals and 15 guiding action points.
- 4.1.2 The Freshwater Clean-up Fund project for Lake Horowhenua was announced by Minister Amy Adams on February 25, 2014. The total project cost is \$1,270,500 with the Government's Freshwater Clean-up Fund contributing \$540,000. The balance of the funding is from local government (Horizons Regional Council, Horowhenua District Council) and in-kind support from industry (Tararua Growers Association and DairyNZ). The Minister outlined in the announcement that "The Government has decided to help out with funding because of the partnership that's developed between iwi, farmers and the local council".

##### Update

- 4.1.3 The Lake Accord Partners released a broader Lake Accord Action Plan to outline to strategy for restoration of the lake over the next 2 years. The Action Plan document identifies the roles and responsibilities of the 5 signatories to the Lake Horowhenua Accord and a brief overview of the 8 key issues/ challenges for the restoration of the lake. This includes a summary of some of the science work that has recently been completed by Horizons and others. The Action Plan also documents the tasks that are going to be undertaken in response to 15 management actions identified in the Lake Accord.
- 4.1.4 Overall, 34 tasks are identified within the Action Plan with many of these programmed to be completed over the next 2 years. After 2 years a review of progress will be undertaken, with a full review of the Lake Horowhenua Accord and a refreshment of objectives to take place in August 2018. The Action Plan document identifies that a key part of the review process will be to reflect on the management objectives and goals of the Accord and the overall vision that Lake Horowhenua is: he taonga tuku iho; he taonga mo te katoa mo te katoa (a treasure handed down from our ancestors for the enjoyment of all).

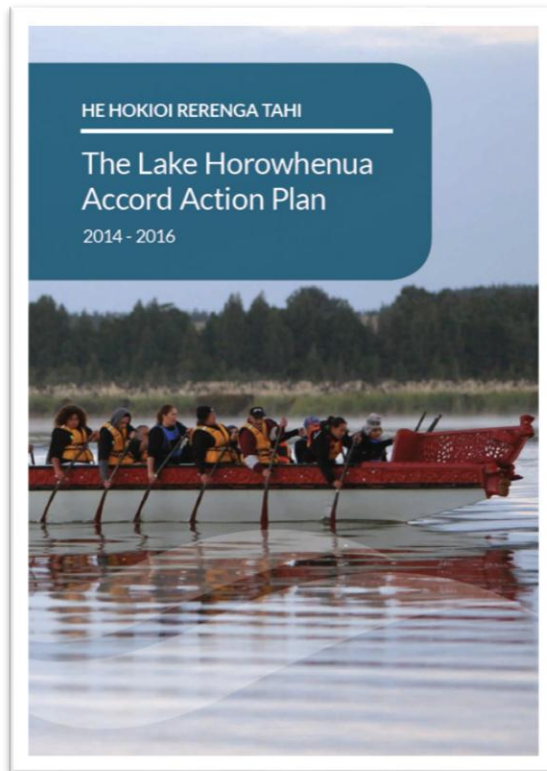


Figure 2: The cover of the Lake Horowhenua Accord Action Plan.



Photo 7: The Lake Horowhenua Action Plan was released in Levin on August 3<sup>rd</sup>.

## Lake Horowhenua Clean-up Fund Projects

### Context

4.1.5 The projects that were selected for the funding proposal link strongly to the management actions outlined in the Lake Horowhenua Accord and are included in the Tasks of the Action Plan. The suite of eight projects were selected in order to improve the suitability of the lake for recreational use, reduce the inputs of sediment and nutrients into the lake and to improve native fish populations in the lake. These projects were selected as they represent an opportunity to make considerable water quality or lake health gains in a short space of time and are within the scope of the Clean-up Funding criteria, including contribution of co-funding. Primarily the projects in this work programme are to provide physical and infrastructural assets that address the key issues of toxic algal blooms, including via lake weed harvesting, sediment and nutrient inputs to the lake from rural and urban sources and to improve habitat and access to the lake for native fish. The suite of 8 projects are:

1. Purchase and operation of lake weed harvesting equipment;
2. Provision of a boat wash facility in Levin township;
3. Riparian fencing and planting;
4. Installing stormwater treatment systems;
5. Installing a sediment trap/treatment wetland on the Arawhata inflow to the lake;
6. Creating integrated drainage and sediment control plans for up to 500 ha of cropping farms;
7. Preparing sustainable milk production plans for dairy farms in the catchment; and
8. Fish pass and habitat improvement for native fish.

4.1.6 The projects were selected based on sound science including Horizons commissioned reports on restoration options for Lake Horowhenua (Gibbs 2011, Gibbs 2012); and monitoring information collected by and for Horizons (e.g. fish monitoring information completed by Waikato University, Tempero 2013). Upgraded monitoring programmes and continued work with NIWA have helped to develop the final package. Feasibility has been ensured through a range of mechanisms, including discussions with practitioners e.g. the Tararua Growers Association and consultants experienced in farm management to reduce nutrient/sediment run-off. Horizons engineers, who manage the drainage scheme into the lake on the Arawhata, have also been consulted. They have the technical skills to design weirs and fish passes, which will enable the implementation of interventions such as a sediment traps and fish passes. Feasibility of the stormwater treatment work has been ensured through having experienced Horowhenua District Council engineers, who manage the stormwater network for Levin, leading the project.

4.1.7 Overall, the plan to restore the Lake Horowhenua will take time and this Clean-up Fund project is one part of the ongoing efforts of a range of groups and agencies to restore the lake. The projects form a package of interventions and the benefits of some of the actions are expected to occur within the timeframes of the project and to endure beyond that.

### Update - Progress over the reporting period

4.1.8 Works as a part of the Clean-up Fund were initiated in June following the signing of the Clean-up Fund contract between Horizons and the Ministry for Environment.

4.1.9 During the reporting period:

- The boat wash facility was constructed and officially opened by Minister Nathan Guy.
- Fencing and planting work was undertaken in the Arawhata and Hokio streams.
- Survey work for the intergrated stormwater management plan for the Arawhata was completed. On-farm mapping for this stormwater management plan work was initiated and the first outputs from the mapping were processed.

- Initial design work for the sediment/trap wetland for the Arawahata was initiated.
- Further monitoring and science work to inform the lake weed harvesting project was commissioned.



Photo 8: Minister Guy testing out the new boat wash facility built as a part of the Lake Horowhenua Clean-up Fund project

Jon Roygard  
**FRESHWATER AND SCIENCE MANAGER**



## 5 Water Monitoring & Research

### 5.1 Annual Plan targets

MEASURE	2013-14 reporting period				YTD ACTUAL	July 2014
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		
Track changes in the health of the region's water resource	25%	25%	25%	25%	100%	10%
Inform policy and non-regulatory programme development	25%	25%	25%	25%	100%	10%
Assess policy and implementation effectiveness	25%	25%	25%	25%	100%	10%

5.1.1 The water monitoring and research activity summary is arranged in four sections to summarise work on groundwater, surface water quantity (allocation), surface water quality and biomonitoring. A summary of the progress made against the targets over the year for each of these areas has been provided in a table at the end of each of the sections. Further details on some of these projects have been provided in previous Environment Committee reporting. Some further brief updates for the reporting period (June, July 2014) are overviewed in the sections below.

### 5.2 Activity Report (groundwater)

#### Groundwater monitoring programme:

##### Update

5.2.1 The review of Horizons' groundwater monitoring programme has now reached the implementation stage, with new groundwater level sites included from July 2014 and additional water quality monitoring sites being incorporated into the network throughout the next six months. In June, 10 wells were incorporated into a National Age Tracer Monitoring programme to inform long-term trends in groundwater age, and an additional 5 wells are to be included in the National Groundwater Monitoring Programme from September. Both programmes are core-funded GNS Science programmes that contribute to the national understanding of groundwater as well as informing Horizons' groundwater and wider science programmes.

5.2.2 Thirty-two sites have been selected for the 4-yearly National Pesticide Survey. Sampling is scheduled for late 2014 and will be carried out by Horizons. Data analysis, interpretation and reporting is overseen by the Institute for Environmental Science and Research (ESR).

## **Drinking Water Report:**

### Context

- 5.2.3 Previous reporting of Horizons' groundwater quality monitoring data (PDP, 2013), identified elevations of nutrients, metals and microbiological parameters throughout the region that could impact the suitability of groundwater for drinking water supply. While assurance of water quality for drinking water supply remains the responsibility of water suppliers and is beyond the scope and role of the Regional Council, it is important that relevant information held by Horizons is communicated to these parties to raise awareness of groundwater quality issues so that they can be appropriately managed. To this end, Horizons commissioned the drafting of a technical report and public information material (brochure and report) by PDP.

### Update

- 5.2.4 The reports and brochure are now with Horizons for formatting and are due to be released in the coming weeks. The development of a communication plan is in progress to ensure this information is appropriately delivered. Workshops with water suppliers, territorial authorities and public health officers will be held initially to ensure that these parties are informed as soon as practicable, while providing opportunity for discussion. Following this, the information will be made available to the public.
- 5.2.5 In addition to the reports, Horizons has also carried out a stock take of regional drinking water supplies to ensure our data is up to date and that registered drinking water supplies are considered in consent processing where discharges to land or water may impact suitability for use, as required by the National Environmental Standard for Sources of Human Drinking Water.

## **Envirolink and Hydrogeological Studies:**

### Context

- 5.2.6 Horizons' has made considerable progress in developing our understanding of some of the region's most utilised aquifer systems during the past year, with the assistance of funding from Envirolink (total \$70,000). These research grants have enabled us access to technical expertise at Crown Research Institutes such as GNS Science and NIWA that we otherwise would not have been able to resource within our existing funding. These research projects primarily inform regional groundwater management, however in some cases they also contribute on a national or international level, such as with the recent lag time study delivered collaboratively by Horizons and GNS Science staff.

### Update

- 5.2.7 Four Envirolink-funded reports were completed during the reporting period and are now available:
- Hydrogeology of the Upper Manawatu and Mangatainoka catchments
  - Review of hydrogeology of Rangitikei and Turakina Groundwater Management Zones
  - Groundwater lag times in the water discharges from the Whanganui, Rangitikei and Manawatu catchments
  - Lake Horowhenua water balance assessment and quantification of uncertainties; and Lake Horowhenua health assessment: effects of changing inflow volumes (combined reports).
- 5.2.8 Both hydrogeology reports provide a crucial foundation for further science research in these catchments in terms of understanding how water is stored and transported through the subsurface, which will in turn contribute to improved resource management in terms of

allocation of water resources and improving our understanding of land use activities and their impact on water quality.

- 5.2.9 The groundwater lag time report informs both surface water and groundwater management and research in terms of understanding the transport time of groundwater (and accompanying contaminants such as nutrients) from land to surface water. It also provides key information for the development of wider resource management projects, such as nutrient accounting.
- 5.2.10 The Lake Horowhenua reports encompass both an assessment of the water balance and the effects that abstraction of groundwater has on lake health. While attempts have been made in the past to quantify a water balance for the catchment, this report provides quantification of the uncertainties of the water balance and relates water abstraction with water quality effects in the lake itself. This has informed both the immediate management of water allocation and provides direction for acquiring key information that will improve long-term management of water in this area.

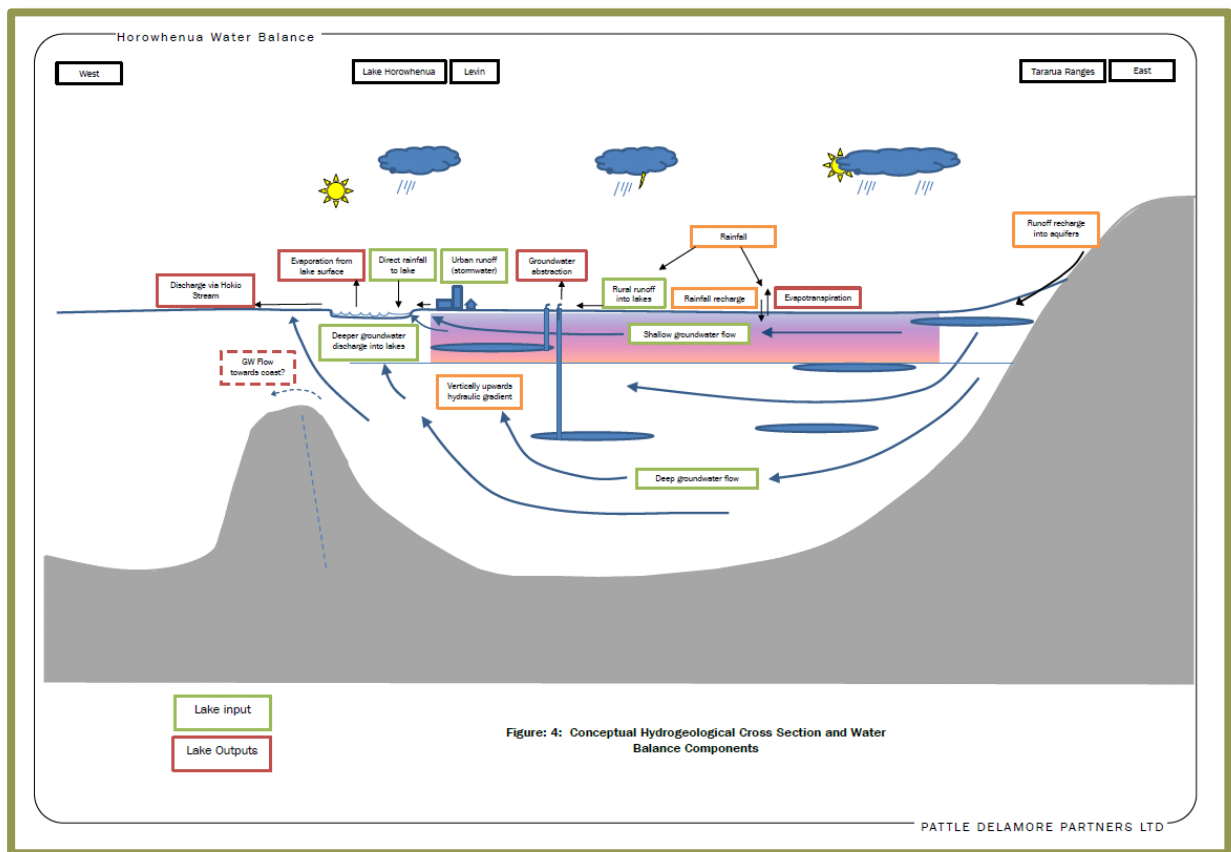


Figure 3: Conceptual hydrogeological cross section of Horowhenua GWMZ (PDP, 2014).

### 5.3 Groundwater Monitoring and Research summary

Project	Key Deliverables	Progress to Date
Groundwater monitoring programme	Upgraded monitoring programme implemented	<ul style="list-style-type: none"> <li>■ New monitoring programme is now in the implementation stage.</li> <li>■ Water level monitoring sites have been added to the network.</li> <li>■ Water quality sampling will move to a quarterly schedule from September 2014.</li> <li>■ National pesticide survey is scheduled for late 2014.</li> </ul>
Land use and groundwater / surface water quality	Fate and transport of nutrients research	<ul style="list-style-type: none"> <li>■ Progressing to schedule.</li> <li>■ A spring water level survey is in the planning stage. Groundwater age tracer samples were collected in June.</li> <li>■ Geochemical analysis of the summer 2014 water quality survey is now underway.</li> </ul>
	Artificial recharge in the Lake Horowhenua catchment	<ul style="list-style-type: none"> <li>■ This research is progressing, with the delivery of a preliminary report by October 2014.</li> </ul>
	Coastal lakes project *	<ul style="list-style-type: none"> <li>■ Lakes have now been selected and monitoring will be undertaken from September 2014.</li> </ul>
	Horowhenua water allocation project	<ul style="list-style-type: none"> <li>■ Water balance report completed.</li> <li>■ The focus of this project for the coming year will be upgrading water metering and telemetry to improve water use accounting.</li> </ul>
Envirolink and hydrogeology projects	Conceptual geological model of the Mangatainoka catchment	<ul style="list-style-type: none"> <li>■ Reports for Santoft hydrogeology and Mangatainoka hydrogeology have been received.</li> <li>■ A \$20,000 Envirolink grant is being sought to process Horizons' historic groundwater quality data and provide guidance for future monitoring.</li> </ul>
Drinking water project	Brochures and report	<ul style="list-style-type: none"> <li>■ Currently being reviewed for public release</li> </ul>
	Presentations, workshops, communication to relevant parties	<ul style="list-style-type: none"> <li>■ Report completed.</li> <li>■ Presentation to staff and Council programmed for late 2014.</li> <li>■ External workshops and presentations programmed for late 2014.</li> </ul>
Santoft Resource Management	Santoft water user group	<ul style="list-style-type: none"> <li>■ The next meeting is scheduled for November 2014.</li> </ul>
	Santoft resource management project	<ul style="list-style-type: none"> <li>■ Scoping for this project has been advanced during the reporting period and will be refined based on the recommendations from the GNS hydrogeology report.</li> </ul>
	Water balance assessment	<ul style="list-style-type: none"> <li>■ Currently underway, reporting is anticipated late 2014.</li> </ul>
* Collaborative Horizons Science Team project		

## 6 Water Allocation

### 6.1 Activity Report (water allocation)

#### Water allocation monitoring programmes:

##### Update

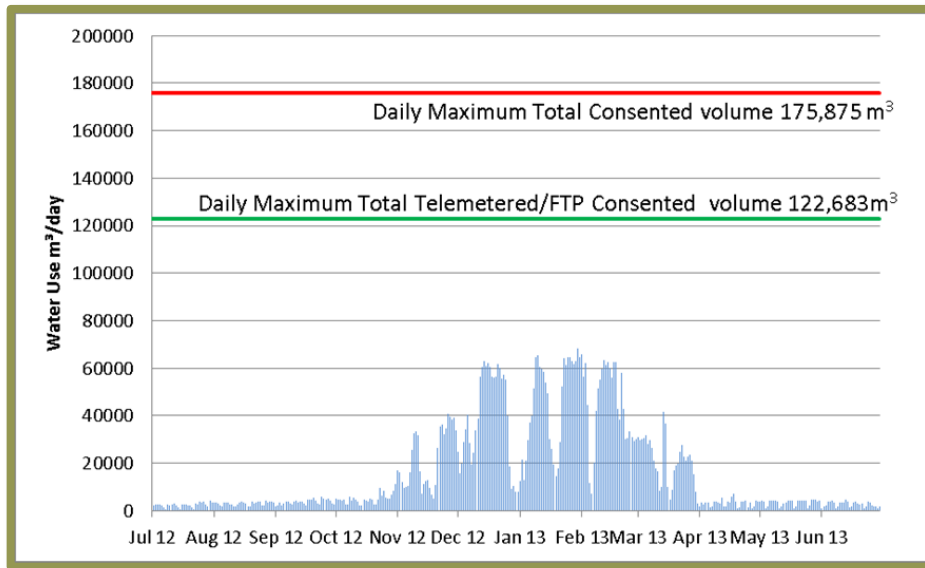
- 6.1.1 Monitoring programmes for surface and groundwater quantity are ongoing. The winter months are typically quieter for the fieldwork team, as irrigation takes cease during this time. The focus has been on processing the telemetered water use data collected since the beginning of the programme, and loading it into the Hilltop database. This data is now being used for analysis as actual water use against consented volumes.

##### Context

- 6.1.2 Over the 2013-14 year the Science Team has undertaken an audit of the information on allocation status throughout the region i.e. assessing the amount of consented allocation compared to the allocation limits in the One Plan. Work has also been undertaken to analyse the relationship between the amount of water actually used compared to the maximum amount consented for the water takes areas across the region. This assessment has been completed using the water use records collected by Horizons through the telemetry programme. A further component of these reports is publishing historic information on the frequency and duration of water restrictions to provide guidance for water users.

##### Update

- 6.1.3 A report on the Upper Manawatu area has been completed and results were presented to Councillors during the reporting period. In addition, a report on the Rangitikei catchment is nearing completion (awaiting formatting before printing). A report on the remaining areas in the region is currently under review and will be completed shortly. Results from the Rangitikei analysis show that over the 2012-13 water year, according to data from 30 telemetered sites reviewed, the maximum use over any one month was 56% of the consented total. This occurred in January 2013. Minimum flow restrictions in the Rangitikei, over the particularly dry 2012-13 season, occurred between 31 January and 17 April, therefore the data shown here for January is expected to be a good representation of maximum likely water use in the area.
- 6.1.4 Table 5 summarises the information in a graphical format. The red line indicates the total consented allocation in the catchment, the green line indicates the total volume for which Horizons automatically receives water use data. The blue trace shows the total recorded water use for the 30 telemetered consents analysed. Analysis does not allow for any low flow restrictions that may have been in place during the season. The inclusion of this factor is a next step to be completed.



**Table 5: Total daily water use for the consent providing water use information via telemetry / File Transfer Protocol (FTP) in the Rangitikei catchment**

- 6.1.5 Looking ahead, it would be ideal to be able to look at the relationship between consented volumes and daily use on a daily basis to get a more complete picture of the water use as it fluctuates over a season and in relation to minimum flow restriction.
- 6.1.6 Understanding the way people are using their allocated water in relation to their consented volumes provides valuable information for managing the resource into the future, and to continue to promote fair, efficient and “reasonable” water use.

## 6.2 Water Allocation Monitoring and Research summary

Project	Key Deliverables	Progress to Date
Water Allocation Status and Monitoring Programmes	Reports including water allocation audits for catchments within Horizons region; and relationship between consented water and actual use.	<ul style="list-style-type: none"> <li>Upper Manawatu completed, Rangitikei Catchment report in pre-publishing, and final two reports (rest of the Manawatu and the remaining catchments) are under review.</li> </ul>
	Surface and groundwater quantity monitoring including flow monitoring.	<ul style="list-style-type: none"> <li>Ongoing.</li> </ul>
Water metering programme / National Water Metering regulations	Telemetry installed to automatically measure water use in the region.	<ul style="list-style-type: none"> <li>Ongoing, to date 331 telemetry sites (including secondary sites, FTP and nomad logger sites) have been installed.</li> <li>1 new install during the reporting period</li> </ul>
	Annual inspections of water take flow meters as part of the telemetry programme.	<ul style="list-style-type: none"> <li>Ongoing, 238 sites inspected from a total of 284 sites. Inspections will start again as the irrigation season begins.</li> </ul>
	Verifications complete as per the National Water Metering regulations.	<ul style="list-style-type: none"> <li>Ongoing, to date 108 verifications have been completed. Fourteen new verifications completed during the reporting period.</li> </ul>
	Quality assurance and archiving of historical water metering information.	<ul style="list-style-type: none"> <li>Ongoing, to date 275 out of 315 (87%) sites have been processed (up from 76% last reporting period).</li> <li>41 sites are to be followed up on due to issues – some of these may not be able to be resolved (~30).</li> </ul>
	Documentation on how to process water use records	<ul style="list-style-type: none"> <li>Work underway on completing process documentation around water meter recording data – final version planned for Dec 2014</li> </ul>
	Meeting requirements of the National water metering regulations – takes 10-20 L/s must comply by 10 Nov 2014	<ul style="list-style-type: none"> <li>There are 103 consents in this category. To date 65 are confirmed as metered, 43 of which provide data automatically, and 2 are pending telemetry installation. Follow up on the remainder is underway (Compliance)</li> </ul>
	Communication with industry stakeholders	<ul style="list-style-type: none"> <li>Workshop planned for 2 October 2014</li> </ul>
Dairy Farm Water use project	Support of PhD study in collaboration with Massey University and DairyNZ.	<ul style="list-style-type: none"> <li>Project initiated in 2013. Work is ongoing with farmers being contacted and sites being set up. Expected completion date is 2016.</li> </ul>



## **7 Surface Water Quality**

### **7.1 Activity Report surface (water quality)**

#### **Water quality monitoring programmes:**

- 7.1.1 Monitoring programmes for surface water quality are ongoing and work over the current reporting period has focused on finalising reporting for the end of the financial year.

#### **Lake Horowhenua weed mapping:**

- 7.1.2 As part of the Lake Horowhenua Clean-up projects a further two rounds of mapping macrophyte distribution and density in Lake Horowhenua is to occur before the end of January 2015. This work is to inform the weed harvesting work planned as a part of the Clean-up Fund project.

#### **Lake monitoring:**

- 7.1.3 During the reporting period Horizons has continued to implement its upgraded lake monitoring programme, with monitoring programmed to commence on a number of coastal lakes over August and September. Some of this work is planned to be delivered through the use of sampling from a helicopter. This has some advantages in terms of time required and overall cost of delivery of the programme. A key component of this is the reduced expenditure required in terms of labour to complete the sampling and reduced costs for setting the sites up to be sampled e.g. enabling boat access to some of the lakes. The priority list of lakes to be sampled has been identified and further work is underway to confirm permissions prior to finalising the list.
- 7.1.4 Monitoring is ongoing in Lakes Horowhenua, Dudding, Heaton, Wiritoa and Pauri.

## 7.2 Surface Water Quality Monitoring and Research summary

Project	Key Deliverables	Progress to Date
River water quality monitoring programme	Continuous river water quality monitoring	<ul style="list-style-type: none"> <li>Continuous water quality monitoring of sediment, pH and dissolved oxygen continues within the established measurement networks for these parameters.</li> <li>An independent report on the state and trends of water quality in the Manawatu from this network and other water quality information was completed.</li> </ul>
	Monthly river water quality sampling via the State of Environment and discharge monitoring network	<ul style="list-style-type: none"> <li>Programme ongoing (2013-14 monitoring complete). Additional temporary sites established in the Manawatu focusing on areas where works are being undertaken through the Freshwater Clean-up fund.</li> <li>Data from this project has been provided for reporting on Land, Air, Water Aotearoa (LAWA).</li> <li>Report on the state and trends of nutrients information from this network completed..</li> </ul>
	PNCC wastewater monitoring programme peer reviewed	<ul style="list-style-type: none"> <li>The hearing for the PNCC review has been set for the week of the 11 November 2014.</li> </ul>
Contact recreation monitoring programme	Contact recreation monitoring completed and reported via websites and annual report	<ul style="list-style-type: none"> <li>2013-14 monitoring completed.</li> </ul>
Lakes monitoring, reporting and informing lake restoration programmes	Lake Horowhenua monitoring programme upgrades completed.	<ul style="list-style-type: none"> <li>Monthly sampling of Lake Horowhenua reinitiated in July 2013.</li> <li>Weed survey map completed in Jan. 2014</li> <li>Two further macrophyte mapping surveys to be completed prior to January 2015.</li> <li>Lake buoy deployed and operational from July 2013.</li> <li>New boat for use solely on Lake Horowhenua was launched with a blessing from Lake Trustees representatives.</li> </ul>
	Lake Pauri and Wiritoa restoration options report	<ul style="list-style-type: none"> <li>\$20,000 Envirolink grant secured and report completed in the 2013-14 financial year.</li> <li>Lake monitoring initiated in Feb 2014.</li> </ul>
	Lake Monitoring	<ul style="list-style-type: none"> <li>New sampling programme initiated in February 2014 with Lakes Wiritoa, Pauri, Dudding and Heaton sampled in February and May 2014</li> <li>Site visits being undertaken to assess feasibility of sampling on the proposed coastal dune lakes.</li> <li>Additional samples collected over February to inform NIWA zooplankton investigation.</li> <li>Planning for the upgraded lake monitoring programme for 2014-15 underway with permissions currently being sought. Sampling is likely to be completed through a mixture of sampling by boats and sampling via helicopters.</li> </ul>
Nutrient management	As a part of the ongoing discussion with a range of groups around nutrient management, Horizons has sponsored two conferences that provide a forum for practitioners to meet and discuss nutrient management	<ul style="list-style-type: none"> <li>The Fertiliser Lime Research conference themed Nutrient Management for the Farm, Catchment and Community was supported by Horizons and was held in February at Massey University.</li> <li>The LandWISE conference titled "Ever better: Farmers, land and water" has been supported by Horizons and was held in Palmerston North in May.</li> </ul>

## 8 Biomonitoring

### 8.1 Activity Report (biomonitoring)

#### Biomonitoring update

##### Update

8.1.1 The biomonitoring programme contains the invertebrates, periphyton, cyanobacteria, didymo and freshwater fish monitoring programmes. During the reporting period much of the focus of the programme was on furthering the reporting on information collected over the year. The independent science report for the Manawatu Catchment completed in April 2014 reported on the invertebrate, periphyton and cyanobacteria monitoring information completed as a part of this programme.

8.1.2 In summary:

- Invertebrate monitoring was completed for the year in March with 81 sites sampled;
- The monthly periphyton monitoring programme continues with an additional 5 sites added in 2013-14 in the Mangatainoka, and monitoring in the Mangatainoka increased to twice a month. This work aligns with the focus of the several regional council programmes on nutrient issues in this sub-catchment and the considerable amount of interrelated research work underway in the catchment related to nutrient accounting and setting of water quality targets;
- Collection of cyanobacteria samples at all sites where it is encountered during the monthly periphyton runs continues. Write up of the results of toxin analysis and its distribution is to take place this financial year;
- Surveillance and monitoring for didymo is undertaken throughout the region's rivers in November, February and May. Monitoring was completed during May 2014, with all samples returning negative results. The next round of monitoring is to be completed in November 2014; and
- Freshwater fish monitoring is ongoing with surveys of the State of the Environment sites and the Sites of Significance Aquatic sites having commenced in December 2014, with 33 sites completed in the 2013-14 financial year. Mudfish monitoring for 2014-15 has commenced with 9 sites completed to date.

#### **Macroinvertebrate monitoring:**

8.1.3 During the reporting period a final copy of the 2012-13 monitoring report was received. Figures 1 and 2 in Appendix 1 show the results visually for the Northern and Southern areas of the Region. The key messages from this report are:

- Overall, 86% of the SoE monitoring sites were rated good or better by the MCI in 2013 compared with 71% in 2012, 67% 2011, 75% in 2010, and 60% in 2009. The sites in poor condition in 2013 are the same sites that were in poor condition in 2012. These are the Hautapu River upstream of the Rangitikei confluence, Arawhata Stream at Hokio Beach Road, and Hokio Stream at the lake outlet weir.

8.1.4 Two sites – Whanganui at Te Maire and Pipiriki – showed statistically significant positive (improving) trends in MCI. Despite a good habitat score, the strongest MCI trend was in the Hautapu River upstream of the Rangitikei confluence, where MCI values continue to trend downwards (indicating degrading water quality). An investigation into possible causes of the degradation in the Hautapu catchment has commenced (earlier in 2014) with monitoring results and a draft report to be produced by the end of the year.

- 8.1.5 The number of sites being recorded in the good and excellent categories in terms of percentages appears to be increasing, although this must be interpreted with caution as the number of sites has increased slightly to include more reference sites and to get a better gradient of land use. We expect to be able see any improvements within sites to be reflected in the trend analysis. The number of sites able to be analysed for trends will significantly increase with the next year of data.

**Fish pass effectiveness:**

- 8.1.6 As part of the Manawatu River Clean-up Fund a number of fish passes have been installed with the advice from NIWA. To ensure that the fish passes are effective in allowing the target species to overcome these barriers an application was made and granted by Envirolink for NIWA to run a workshop on how to monitor the effectiveness of the fish passes and to write a manual to allow Horizons to undertake this monitoring in the future. A press release has recently gone out to whitebaiters requesting volunteers to donate part of their catch to assist with this work

**Cyanobacteria:**

- 8.1.7 Very little is currently known on the ecological effects of cyanobacteria in waterways, for example whether the toxicity of cyanobacteria has any effect on invertebrates in the river. During the reporting period an application was made to Envirolink, and granted, to have Cawthron Institute develop a monitoring plan that will allow Horizons to answer these questions. We are currently in discussions with other regional councils to see which would be willing to adopt some of the recommendations and help with the sample collection.

## 8.2 Biomonitoring monitoring and research summary

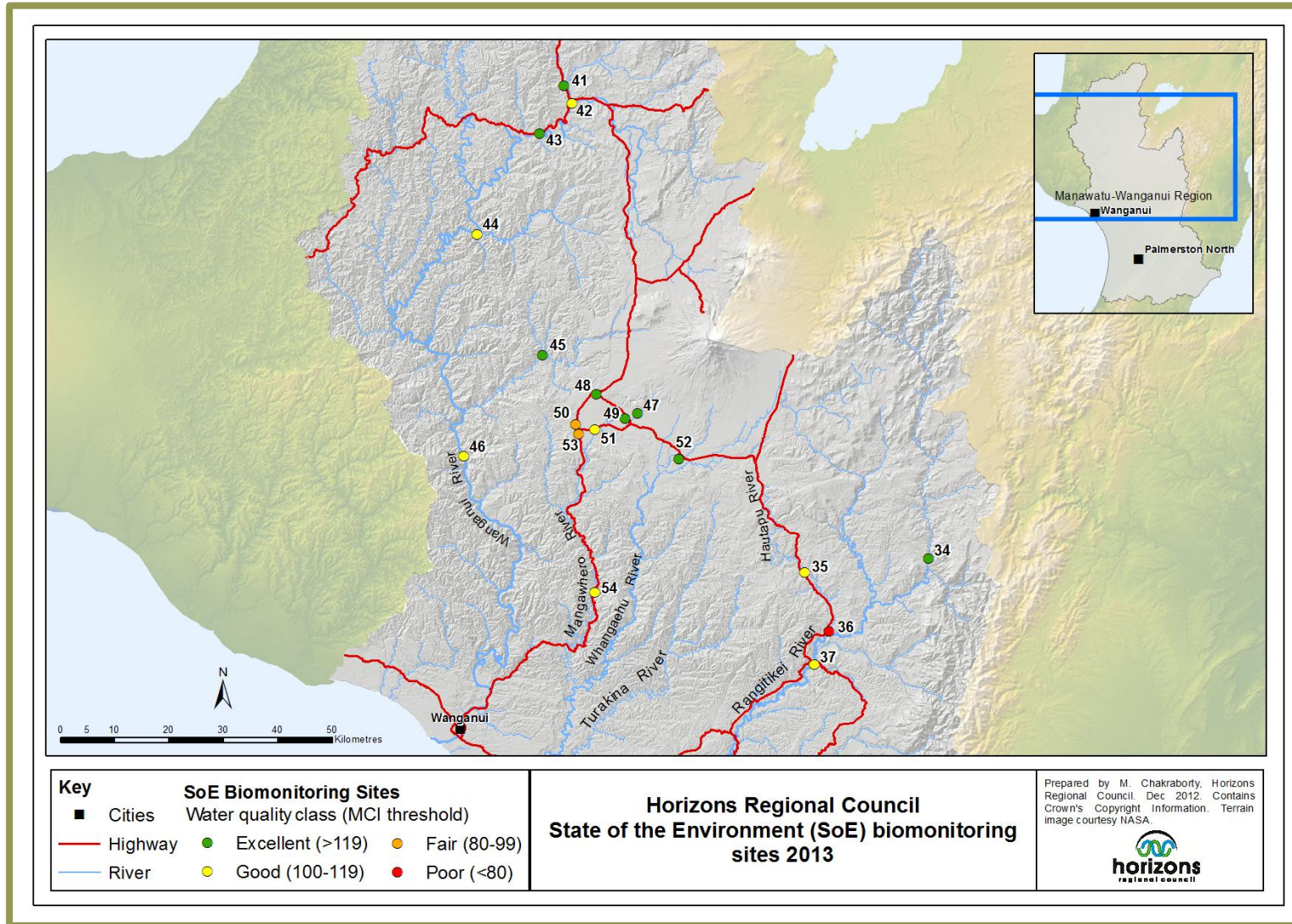
Project	Key Deliverables	Progress to Date
Invertebrates	State of Environment information on the health of the region's water ways (both state and trend)	<ul style="list-style-type: none"> <li>■ A final copy of the analysis of information collected in 2012-13 year has been received.</li> <li>■ Monitoring has been completed for the 2013-14 season with 80 surveyed.</li> <li>■ 50 of the 80 samples have been sorted and species of macroinvertebrates identified.</li> <li>■ In April 2014 an independent report on the state and trends of water quality in the Manawatu reported on information collected in this monitoring programme.</li> <li>■ Data from this monitoring programme has been provided for reporting on the LAWA website.</li> </ul>
Periphyton	State of Environment information and knowledge of the relationship between flow, nutrients and periphyton growth around the region	<ul style="list-style-type: none"> <li>■ Monthly monitoring is ongoing</li> <li>■ An additional 5 sites have been added to the Mangatainoka Catchment to enhance knowledge of periphyton and cyanobacteria in this catchment. These sites will be monitored twice monthly to get a better understanding of the periphyton and cyanobacteria growth in this key catchment for nutrient management research in the region.</li> <li>■ Horizons' periphyton information has been used to inform the national objectives framework development. The data sets were rated as the best in the country for this work and increasingly other regional councils are undertaking monitoring in a similar manner. A report on the analysis was released publically by MfE in November.</li> <li>■ In April 2014 an independent report on the state and trends of water quality in the Manawatu reported on information collected in this monitoring programme.</li> </ul>
Cyanobacteria	Benthic cyanobacteria	<ul style="list-style-type: none"> <li>■ A draft copy of the report paid for by Envirolink analysing the Horizons weekly cyanobacteria dataset has been received and currently being reviewed.</li> <li>■ Samples of cyanobacteria from around the region are being collected to look at regional toxin production.</li> <li>■ A report is being prepared by Cawthron and NIWA analysing the results from the sediment, phosphorus and mat interactions work completed in early 2014.</li> <li>■ In April 2014 an independent report on the state and trends of water quality in the Manawatu reported on information collected in this monitoring programme.</li> <li>■ Envirolink funding was received to allow Cawthron Institute to design a monitoring programme to look at the ecological effects of cyanobacteria.</li> </ul>
Didymo	Monitoring to check for didymo incursions.	<ul style="list-style-type: none"> <li>■ Monitoring occurs three times per year (May, Nov and Feb).</li> <li>■ May monitoring round complete with all samples returning negative results.</li> <li>■ Next round of sampling to be completed in November 2014.</li> </ul>
Freshwater Fish	Monitoring programme completed and reported on.	<ul style="list-style-type: none"> <li>■ State of the Environment monitoring for the 2014-15 year initiated in June 2014.</li> <li>■ Brown mudfish monitoring has commenced for the 2014-15 financial year. This monitoring is to be completed by the end of August.</li> <li>■ Further Sites Of Significance – Aquatic (SOS_A) monitoring will commence in December 2014.</li> <li>■ Funding has been received from Envirolink for advice on how to monitor the effectiveness of fish passes installed under the Manawatu Clean-up Fund.</li> </ul>
Bacterial Community Index	Contribution of regional data to a national level research programme.	<ul style="list-style-type: none"> <li>■ Monitoring programme completed.</li> </ul>

Project	Key Deliverables	Progress to Date
Stream Ecological Valuation	SEV model specific to the Horizons Region	<ul style="list-style-type: none"> <li>■ Collection of reference data is continuing .</li> </ul>

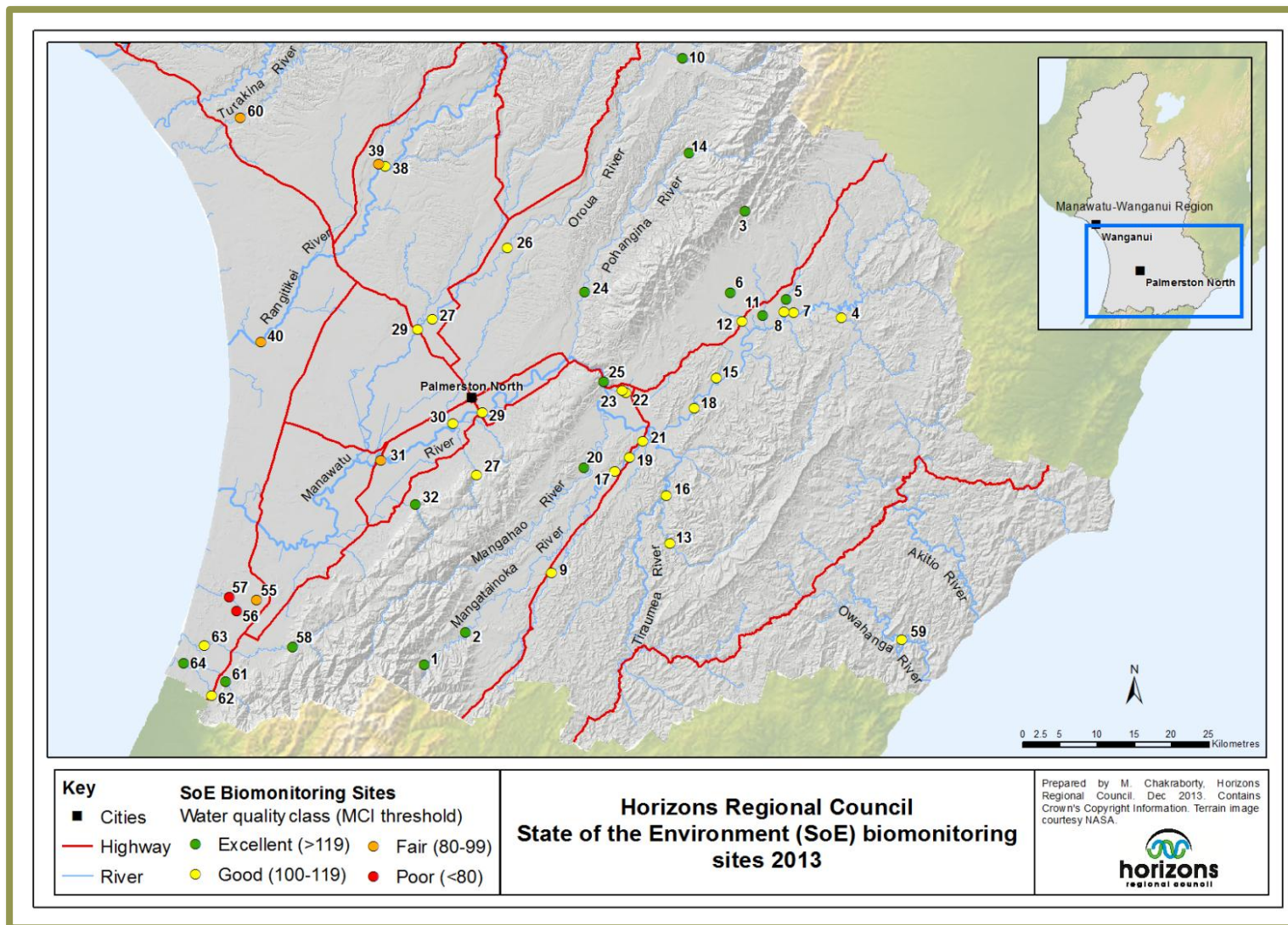
James Lambie  
**SCIENCE COORDINATOR**

Jon Roygard  
**FRESHWATER AND SCIENCE MANAGER**

Appendix 1: Maps of macroinvertebrate results for the 2012-13 season.



Map 2: State of the Environment macroinvertebrate monitoring sites and the water quality classes they fall into from the monitoring undertaken during the summer of 2013 for the Northern area of the region.



Map 3: State of the Environment macroinvertebrate monitoring sites results and the water quality classes they fall into from the monitoring undertaken during the summer of 2013 for the Southern area of the region.

## 9 Environmental Research and Monitoring

### 9.1 Annual Plan targets

Measure	2013-14 Reporting period				Actual	July 2014
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		
Complete the State of Environment report in 2012-13 year						
Undertake policy effectiveness monitoring	25%	25%	25%	25%	100%	10%
Review environmental indicators	25%	25%	25%	25%	100%	10%
Monitor Regional Pest Management Strategy effectiveness	25%	25%	25%	25%	100%	10%
Provide environmental information service to the public	25%	25%	25%	25%	100%	10%
Monitor and report on environmental health (air quality)	25%	25%	25%	25%	100%	10%

### 9.2 Activity Report

#### General summary

#### 9.2.1 In summary over the 2013-14 year:

- The dissemination of the State Of Environment report produced in May 2013 continued via presentations to the public, territorial authorities and other interested groups. Further work included completing an independent science report on the state and trends of water quality in the Manawatu Catchment;
- Policy effectiveness monitoring has focused on input in the national water reform work, study of the outcomes from the Sustainable Land Use Initiative, and air quality modelling for Taihape to determine if the National Environmental Standard will be achieved. A report on the progress made on the Manawatu River Leaders' Action Plan was also completed;
- Monitoring of the Pest Management Strategy effectiveness continued with a focus on pest management at Totara Reserve, mapping the extent of woody legumes in the Rangipo Desert and assessing the efficacy of the fur industry as an option to assist with the migration of possums into areas under pest management control by Horizons. This activity has contributed to the plant pest management strategy review that is underway; and
- Environmental information requests to the public and external agencies were completed throughout the year as requested. Many large datasets have been provided externally to support joint research projects underway between Horizons and other agencies. Website delivery of information has continued through the AirMatters, WaterMatters and Land and Water Aotearoa website (LAWA). Information was also provided via scientific reports, public presentations and presentations to conferences etc. and to groups who requested presentations.

#### 9.2.2 Further details on some of these projects have been provided in previous Environment Committee reporting. Some further brief updates for the reporting period (June-July 2014) are overviewed in the sections below. A summary of the progress made against the targets over the 2013-14 year has been provided in the Table at the end of this section.

## Policy effectiveness monitoring

### Context

- 9.2.3 The policy effectiveness projects for the 2013-14 year included:
- Assisting with development of the national objectives framework and revised national policy statement for freshwater management;
  - The work on predicting future outcomes from the Sustainable Land Use Initiative (as reported in the Land Research and Monitoring section of this report);
  - Reporting on air quality modelling for the Taihape airshed (as reported earlier in the year); and
  - Completion of an independent science report to assess state and trends of water quality in the Manawatu Catchment.

### Update

- 9.2.4 During the reporting period (June-July 2014) new work continued on the some of the projects outlined above. Horizons' participation in the national water reform work continued with staff attending meetings convened by the Ministry for the Environment to develop guidance on the National Policy Statement for Freshwater. In particular the work focused on freshwater accounting and national consistency around measurement and reporting of water monitoring information.

## Review environmental indicators

### Context

- 9.2.5 Horizons' work on environmental indicators over the 2013-14 year was wide ranging with a focus on the national biodiversity indicators project, presenting water quality information on the web via the LAWA website, and the progress report on the Manawatu River Leaders' Accord.

### Update

- 9.2.6 For this Environment Committee report, an update on the indicator of national water quality trends is presented. This indicator has been recommended to the steering committee of the LAWA website by Horizons scientists during the reporting period. The indicator aims to reflect a transparent and accurate assessment of the trends in water quality from the national data set compiled for the LAWA website. The indicator builds in the information LAWA currently presents on water quality trends for a number of different parameters over the 9-year period (January 2004 – December 2012) and 5-year period (January 2008 – December 2012). The newly proposed indicator provides a summary across a range of water quality parameters for the collection of sites that meet minimum data requirements for analysing these short-term water quality trends. Efforts have been made to reduce any bias that may be introduced through changes to lab detection limits etc. The trend analysis has been completed using a non-flow adjusted method.
- 9.2.7 Overall the results for these 5-year and 9-year trends show high numbers of stable sites for all parameters (Figure 4 and Figure 5). This may in part be due to the short length in the data set and the ability to detect trends within the variability of water quality information. It may also indicate that the decline in water quality seen in recent decades is reducing. However, rainfall and climatic conditions play a role as does the length of record available for the analysis (i.e. ability to detect trends within the variability). With the trends being updated on LAWA on an annual basis there will be an ability to monitor the trends as the length of record available increases. An update of the indicator is planned later in 2014 and work is underway to gather the data sets from the regional councils and NIWA to complete the analysis.

- 9.2.8 The results show there are positive signs that the amount of phosphorus in New Zealand rivers is decreasing, with improving trends for Total Phosphorus (TP) and Dissolved Reactive Phosphorus (DRP) outweighing degrading trends.
- 9.2.9 The trends show that there are more sites with degrading trends for total nitrogen and total oxidised nitrogen than there are improving trends. However, there has been less degradation in these indicators in the past 5 years. Ammoniacal Nitrogen (NH4), which is typically considered more associated with point source inputs, shows more improving trends than degrading trends.
- 9.2.10 Overall the bacteria indicator (*E.coli*) trends are relatively stable for both the 5-year and 9-year periods.

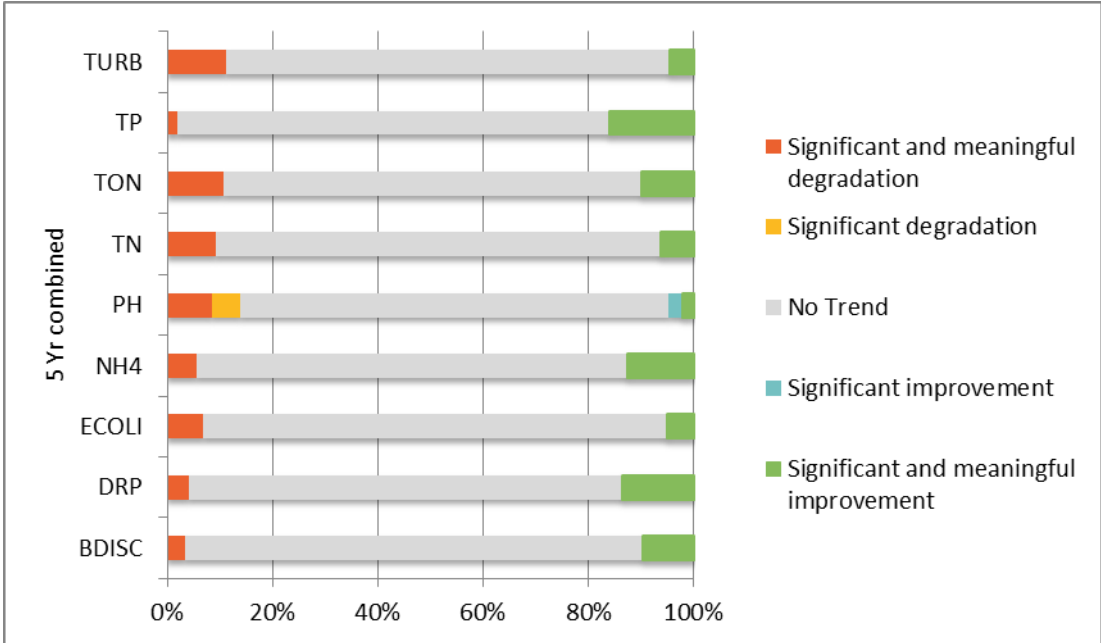


Figure 4: Overall summary of 5-year water quality trends for a range of indicators using the pool of water quality information from all regional councils and NIWA presented on the LAWA website. Note: TURB is turbidity, TP is total phosphorus, TON is Total oxidised nitrogen, TN is total nitrogen, pH is pH (acidity/alkalinity), NH4 is ammoniacal nitrogen, E-Coli is a bacteria indicator, DRP is dissolved reactive phosphorus and Bdisc is a measure of water clarity using a visibility of a black disc.

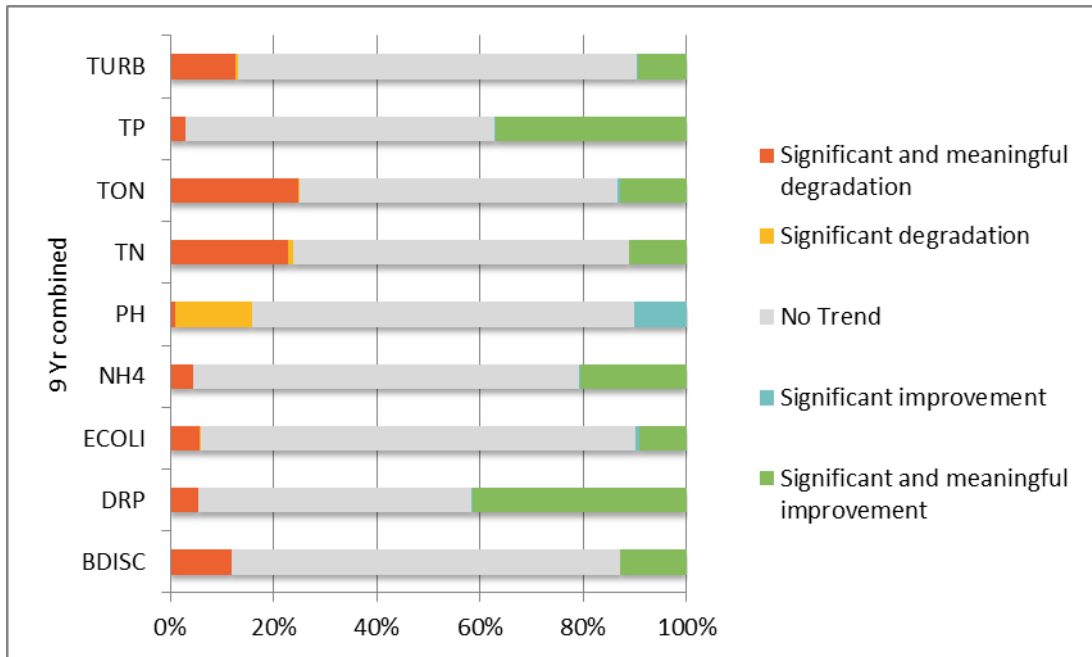


Figure 5: Overall summary of 9-year water quality trends for a range of indicators using the pool of water quality information from all regional councils and NIWA presented on the LAWA website.

## Monitor and report on environmental health (air quality)

### Context

- 9.2.11 Horizons monitors concentrations of PM<sub>10</sub> (particulate matter below 10 microns in diameter) at fixed locations in Taihape and Taumarunui as a part of the requirements of the National Environmental Standard (NES) on Air Quality. The real-time monitoring data from these monitoring sites is available publicly via Horizons AirQuality Matters website as an average daily figure. The website includes some further information about air quality and is built to automatically notify staff via email of exceedances of pre-selected PM<sub>10</sub> thresholds. The AirQuality Matters system and a report of the monitoring results to date were presented to the Environment Committee annually, most recently in May 2014.

### Update

- 9.2.12 Both air quality monitoring sites have had some equipment issues (pumps and air conditioning units) and replacement equipment has been ordered and received. The pumps have been installed with the air conditioning units to be installed later in August. Both sites continue to operate with interim fixes in place. Dr Wilton and Harold Barnett presented the Taihape Air Quality modelling report to an Environment Committee meeting earlier in the year.
- 9.2.13 Monitoring of average daily PM<sub>10</sub> concentrations this winter at both Taihape and Taumarunui has shown continued compliance with the NES i.e. there have been no exceedances of the 50 µg/m<sup>3</sup> concentration recorded at either town. The highest average daily concentration has been 44.9 µg/m<sup>3</sup> at Taihape (25 January 2014) and 47.0 µg/m<sup>3</sup> at Taumarunui (8 July 2014). Over this winter, there has been one instance where the average daily concentration has exceeded 35 µg/m<sup>3</sup> (the alert level) at Taihape and nine occasions where this alert level has been exceeded at Taumarunui.

### 9.3 Environmental research summary

Project	Key Deliverables	Progress to Date
State of Environment Report	Continue communicating the results of the State of the Environment Report	<ul style="list-style-type: none"> <li>During this financial year, presentations have been made to a range of groups and organisations including many of the district councils.</li> </ul>
	Ongoing information collection and analysis to inform future State of Environment reporting	<ul style="list-style-type: none"> <li>Ongoing through a range of programmes.</li> </ul>
Undertake policy effectiveness reporting	Input into the National Policy For Freshwater Management revision	<ul style="list-style-type: none"> <li>Staff have been involved in the reference group for the development of the national objectives framework.</li> <li>Staff have also participated in national workshops on the proposed amendments, assisted with the development of local government submission and responded to enquiries around the framework.</li> <li>Staff have contributed to the implementation guidance for the NPS amendments.</li> </ul>
	Sustainable Land Use Initiative (SLUI) outcomes	<ul style="list-style-type: none"> <li>Modelling work with Landcare Research has been initiated. This jointly funded work is reported in the Land Research and Monitoring section of this agenda.</li> </ul>
Review environmental indicators	Clear and understandable indicators for public presentations	<ul style="list-style-type: none"> <li>Work during the year has focused on developing scorecard indicators for various water quality attributes to be used in public presentations and work on the national biodiversity indicators project.</li> <li>During the reporting period work has focused on the indicator for national water quality trends for the LAWA website.</li> </ul>
Provide environmental information	Information provision to the public and external agencies	<ul style="list-style-type: none"> <li>Information provision to external organisations has continued throughout the reporting period. Several large data transfers have been undertaken.</li> </ul>
	Information provision via websites	<ul style="list-style-type: none"> <li>Horizons AirQuality Matters and WaterQuality Matters websites continue to provide up to date information on a daily basis.</li> <li>Work on the LAWA website has continued, including further development of automated analysis of information. A launch of the site was completed in March.</li> <li>Work is underway on the annual update of water quality information for the LAWA website.</li> </ul>
Pest Management Strategy Effectiveness	Review the Regional Plant Pest Management Strategy	<ul style="list-style-type: none"> <li>As reported in the Biodiversity Monitoring and Research section of this report.</li> </ul>
Monitoring and report on environmental health (air quality)	Air quality monitoring and reporting	<ul style="list-style-type: none"> <li>Air quality monitoring continues in the Taihape and Taumarunui airsheds.</li> <li>Equipment breakdowns have occurred. Interim fixes are in place and replacement equipment has been received for installation at the end of August.</li> </ul>
	Air quality modelling for the Taihape airshed	<ul style="list-style-type: none"> <li>The findings of the Taihape Modelling Report were presented at the May Environment Committee meeting along with an overview of the air quality issues in the region. The Taihape report was funded via Envirolink.</li> </ul>

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## 10 Land Research and Monitoring

### 10.1 Annual Plan targets

Measure	2013-14 Reporting Period				YTD Actual	YTD Actual July 2014
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		
Track changes in the health of the region's land and fluvial resource	25%	25%	25%	25%	100%	10%
Inform policy and non-regulatory programme development	25%	25%	25%	25%	100%	10%
Assess policy and implementation effectiveness	25%	25%	25%	25%	100%	10%

### 10.2 Activity Report

#### 10.2.1 In summary over the 2013-14 year:

- Tracking the changes in the health of the region's land and fluvial resource has been completed through fluvial surveys in the South East Ruahine and in the Manawatu River section just upstream of the Gorge. A survey was initiated in the Kawhata sub-catchment of the Rangitikei River, however that will need to be finalised in the 2014-15 year. Further survey work was completed in the Arawhata sub-catchment of Lake Horowhenua.
- Informing policy and non-regulatory programme development has been achieved through several projects, including contributions to the development of the Lake Horowhenua Clean-up Fund project. Management of on-site wastewater treatment has been informed through funding support for assessments of the effectiveness of treatment systems and completing further work on the implementation of the regional policy document the One Plan. Further, research was completed on the efficacy of tephra for treating municipal effluent.
- Policy and implementation effectiveness work has focused on outcome modelling for the Sustainable Land Use Initiative (SLUI) and further developing the SednetNZ model to test management options for SLUI throughout the region. This work, completed in partnership with Landcare Research, calibrated the model for the region and tested several options for implementation of SLUI to predict the likely impact on sediment outcomes in the region's rivers.

10.2.2 Further details on some of these projects have been provided in previous Environment Committee reporting. Some further brief updates for the reporting period (June/July 2014) are overviewed in the sections below. A summary of the progress made against the targets over the 2013/14 year has been provided in the Table at the end of this section.

#### Fluvial monitoring and reporting:

##### Context

10.2.3 The fluvial monitoring and reporting programme has a primary focus on establishing good information about the levels of river beds through cross-sectional surveys and the amount of gravel extracted from rivers. This information is provided to Horizons' river design engineers and other operations staff to inform the long term and day to day management of the gravel resource within the region's rivers.

## Update

River cross-section survey work for the 2013-14 financial year was reported to the last Committee meeting. The last part of the survey programme in 2013-14 involved the Kawhatau River, a major tributary of the Rangitikei River. Only one of four identified sections of the survey work was able to be completed due to high flow conditions. The remaining work is scheduled to be completed this financial year when flow conditions allow.

The 2014-15 fluvial survey programme has been determined following a meeting involving the Science, Operations and Survey teams. The agreed priority for the programme is as follows:

1. Kawhatau River (complete the remaining 29 cross-sections on the river);
2. Upper Mangahao River (39 cross-sections);
3. Upper Whanganui River (55 cross-sections);
4. Lower Rangitikei River (to Onepuhi – 40 cross-sections); and
5. Mangatainoka River (40 cross-sections).

The survey programme will work through these as budget allows. We are expecting reduced fluvial revenues again this financial year.

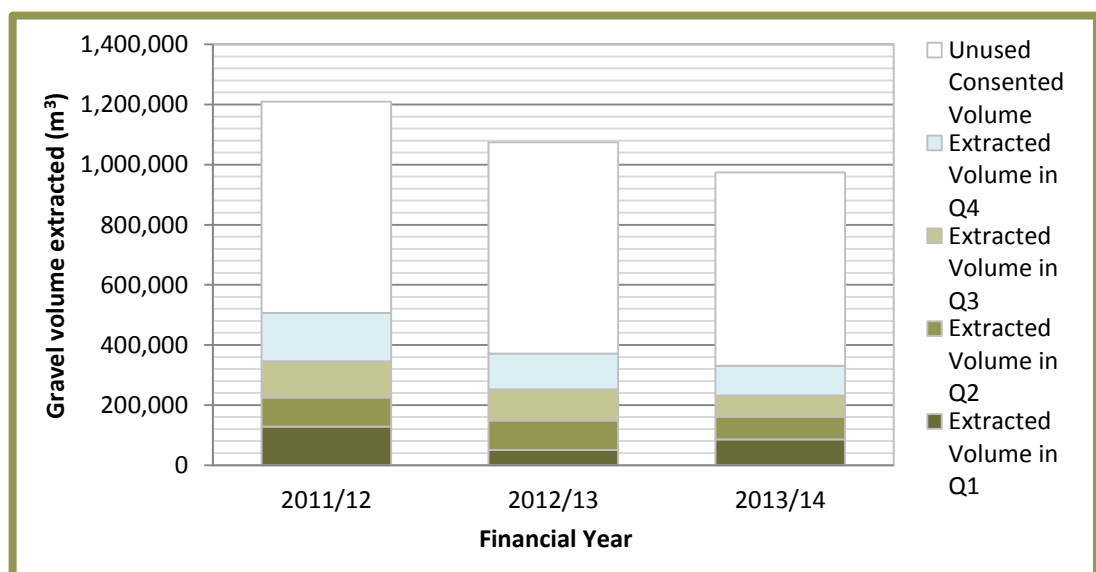
## **Gravel Extraction:**

### Update

Collection and storage of information on the amount of gravel being extracted from schemes and consents is ongoing on a quarterly basis.

The sum of the gravel extracted in the 2013-14 year fell slightly behind last year's total and even lower than the 2011-12 year (Figure 1). This is likely primarily due to a combination of factors, including reductions in overall volumes of gravel consented, some relatively new constraints on amount of gravel available in the some consented areas, and the level of demand for gravel. Resource consent constraints around gravel extraction in the river and around dotterel nesting season may also be encouraging gravel extractors to focus their activity in alternate sites away from the river channel.

This lower extraction has resulted in reduced income (via extraction levies) for Council's fluvial survey programme and work loads were partially reduced last year to accommodate this.



**Graph 2: Gravel extraction consented volumes and actual abstraction volumes over the past three financial years (July to June). Note Q1, Q2, Q3 and Q4 refer to the quarters of each year where Q1 is July, August and September.**

## Arawhata stormwater management:

### Context

Work drawing together the land and fluvial research portfolios has been undertaken in the Arawhata catchment where Horizons is working with the Tararua Growers Association and the Ministry for the Environment to develop an integrated stormwater management plan for the area as a part of the Lake Horowhenua Clean-up Fund project.

### Update

Work during the reporting period focused on surveying the Arawhata Drainage Scheme, discussing options with the growers to improve the drainage scheme and on-farm mapping for the farm plan component of the work. Further work on the design of the sediment trap/wetland planned to reduce sediment input from the Arawhata to Lake Horowhenua was also undertaken.

## Sustainable Land Use (SLUI) outcomes reporting:

### Context

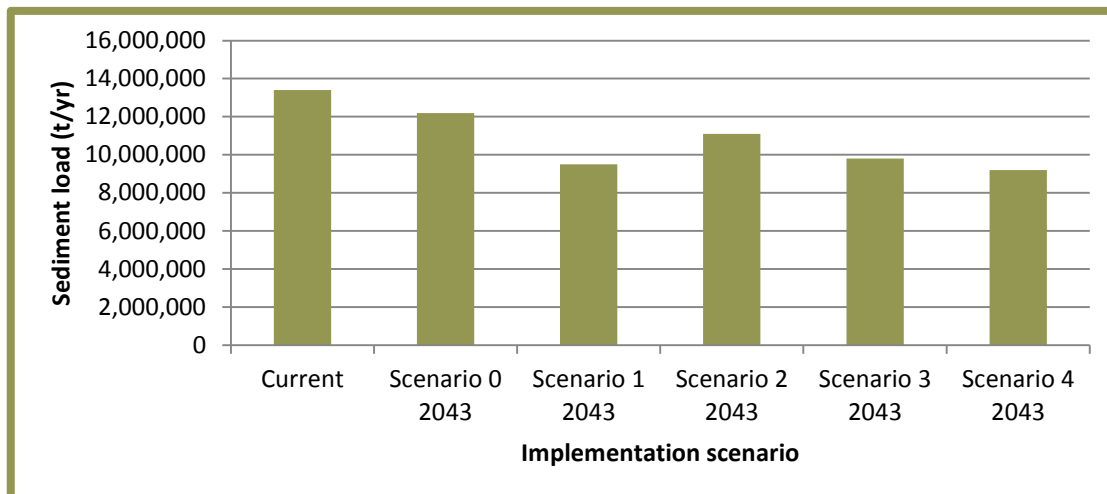
- 10.2.4 Horizons has partnered with Landcare Research in a jointly funded project that links the farm scale actions from the SLUI programme to the Sednet NZ model to determine likely in-river sediment outcomes of alternative implementation scenarios of SLUI. This work builds on previous research to understand the sediment loads in-river and separately to develop modelling of erosion processes in catchments and how they contribute to sediment loads in-river. This new project advanced that work, calibrating the SednetNZ model to the whole region where previously it was only calibrated for the Manawatu Catchment. The calibration tested the model against the measured loads from Horizons continuous sediment monitoring network. The model is also being improved to enable farm scale information from SLUI to be incorporated.

### Update

- 10.2.5 The project progressed well over the 2013-14 year and a final copy of the report was received. Landcare scientists presented the work to the Catchment operations committee in August 2014. The scenarios and results are overviewed in Table 6.
- 10.2.6 The results from this study show that if SLUI was to stop today there would be a 9% reduction in sediment by 2043 across the region. If SLUI was to continue under a number of different management scenarios it would be expected that sediment loads to rivers across the region would be reduced by up to 31%, depending on the rate of new farm plans and implementation works. The report noted that for some water management zones that are a priority for SLUI, improvements of approximately 40% by 2043 were possible.
- 10.2.7 Horizons and Landcare staff have advanced further work on SLUI outcomes under various climate change scenarios. An application has been lodged with Envirolink to support this.

**Table 6: Scenarios modelled by Landcare Research and the predicted results.**

Scenario	New Farm Plans per year (ha)	Implementation	Reduction in Annual Sediment Load
0	0	No further works after 2014	9%
1	55,000	No constraint on forestation	30%
2	35,000	No new afforestation	17%
3	35,000	No constraint on forestation	27%
4	55,000	Work completed in priority order with no constraint on forestation.	31%



Graph 3: Reduction in sediment yield in the Region for the different SLUI implementation scenarios.

Table 7: Percentage reductions by 2043 for major catchments in Manawatu-Wanganui region

Catchment	Scenario 0	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Whangaehu	9	22	16	21	22
Rangitikei	8	22	15	22	26
Whanganui	5	29	12	26	30
Turakina	19	47	30	45	51
Manawatu	11	31	21	27	36
Akitio	14	49	26	45	52
Owhanga	13	56	25	51	58

### 10.3 Land research and monitoring summary

Project	Key Deliverables	Progress to Date
Fluvial monitoring and research to inform gravel management	Cross-sectional survey information to inform gravel management and flood control works	<ul style="list-style-type: none"> <li>■ 2013-14 fluvial cross-section programme was completed, including survey work of the South East Ruahine scheme and Upper Manawatu River</li> <li>■ Programmed survey work in the Kawhatau River was 30% completed - this work was affected by high river flows and budget constraints. Completion has been re-scheduled for 2014-15</li> <li>■ The survey programme for 2014-15 has been agreed and will commence as river flows allow.</li> <li>■ Gravel extraction data continues to be collected and collated on a quarterly basis.</li> </ul>
Fluvial research	Information on how river management for flood protection and gravel extraction can be completed in a way that provides for other values of waterways e.g. fish habitat	<ul style="list-style-type: none"> <li>■ A summer scholarship for a Massey University student to undertake survey and monitoring in the Kahuterawa has been supported by Horizons.</li> <li>■ The work will coincide with the initiation of a 10-year restoration plan for native fish habitat and biodiversity values of the area and the initiation of a flood protection scheme in the area.</li> <li>■ The final report has been received from Massey.</li> </ul>

Project	Key Deliverables	Progress to Date
Arawhata stormwater management plan.	Information for development of an integrated stormwater management plan for the Arawhata catchment	<ul style="list-style-type: none"> <li>■ Survey work of the Arawhata Drainage Scheme completed.</li> <li>■ On-farm discussions with key growers initiated and initial information collected.</li> <li>■ Design of a sediment trap/ wetland initiated</li> </ul>
Informing land treatment of wastewater	Information around wastewater treatment on land, including dairy farm effluent, onsite wastewater treatment and land treatment of municipal wastewater	<ul style="list-style-type: none"> <li>■ Tools developed by this research portfolio continue to be used on a regular basis. These are the “Dairy Shed Effluent Storage Calculator” and the “Town Effluent Calculator”.</li> <li>■ Horizons has supported the on-site wastewater system trials at Rotorua again this year, along with many other funding partners.</li> <li>■ Reporting on a trial of municipal effluent treatment using tephra at Dannevirke has been completed. Further work for 2014-15 is being scoped.</li> </ul>
Predicting water quality outcomes from the sustainable land use initiative (SLUI)	Information on expected water quality results from the SLUI work under different SLUI management scenarios	<ul style="list-style-type: none"> <li>■ A jointly funded project with Landcare Research has been established to broaden the calibration of the SednetNZ model to the whole region (previously just calibrated for the Manawatu).</li> <li>■ Four management scenarios were to be trialled and reported on.</li> <li>■ Final report received.</li> </ul>

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# 11 Biodiversity Research & Monitoring

## 11.1 Annual Plan targets

Measure	Quarterly Period				YTD Actual	YTD Actual July 2014
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		
Track changes in the health of the region's biodiversity	25%	20%	25%	25%	100%	10%
Inform policy and habitat protection programme development	25%	25%	25%	25%	100%	10%
Assess policy and implementation effectiveness	25%	30%	25%	25%	100%	10%
Provide annual operational report and provide an annual monitoring report by November each year	0%	100%	0%	0%	100%	20%

## 11.2 Activity Report

### Track changes in the health of the Region's biodiversity

11.2.1 A summary of the progress made against the targets over the year has been provided in the table at the end of this section. Further details on some of these projects have been provided in previous Environment Committee reporting. Some further brief updates for the reporting period (June-July 2014) are overviewed in the sections below.

#### Totara Reserve Regional Park Pest Management Outcomes Monitoring:

##### Context

11.2.2 As part of the package of preserving and enhancing the natural heritage of the Totara Reserve Regional Park, Horizons undertakes monitoring to assess the effectiveness of invasive weed control and pest animal control. This is done either by assessing changes in the abundances of the pests themselves, or changes in certain indicators of the quality of the natural heritage asset of the Regional Park.

##### Update

11.2.3 During this reporting period (1 June 2014 to 31 July 2014) staff continued to work on the final touches of reports on the possum, bird, weeds, and rat monitoring activities. Due to the linked nature of the pest control and the anticipated native bird response, the rat, possum, and bird results has been compiled in a combined report. The report is presently undergoing internal peer review.

#### Regionally Consistent Biodiversity Monitoring and Information Sharing:

##### Context

11.2.4 This area of activity covers a range of projects that, together, lead the regional councils toward standardised monitoring and reporting of biodiversity and biosecurity information. By working collaboratively on the collection, management and reporting of biodiversity and biosecurity statistics and trends, the regions are able to make efficiency gains by (for example) sharing information about species that cross regional boundaries, sharing the costs of developing common data management platforms, and sharing the developing measurement methodologies and costs of reporting regional statistics to the community.

### Update

- 11.2.5 No further work has been completed on the Regional Biodiversity Indicators reports during the reporting period. To date 11 of the 17 measures have final reports detailing the indicator to be reported. Work has started on the implementation of 3 of the easier measures with report on that work expected to be delivered later in the calendar year.
- 11.2.6 During this reporting period the first phase of Biodata Services Stack survey process was completed with a report on the findings of surveys and workshops to determine what kinds of bird, weed, fish, and aquatic macro-invertebrate data each regional council holds. The project will make a significant step forward later in the calendar year, when partner councils undertake functional biological data exchange.
- 11.2.7 Also over the period, a communication strategy for Dataversity (community of like-minded scientists, resource managers, policy analysts and information technology specialists working on finding solutions to barriers to sharing data) has been devised.

### **Forest Fragment and Wetlands Programmes:**

#### Context

- 11.2.8 Among the non-regulatory tools to protect and preserve indigenous biological diversity in the region, Horizons has programmes that aim to actively manage 200 high priority bush remnants and 100 high priority wetlands on private land. The Science Team provides support for this programme by maintaining the data around forest fragments and wetlands and their prioritisation as well as serving information requests on the state and extent of known forest and wetland fragments.

#### Update

- 11.2.9 Over the period, James Lambie attended a hui at Raketepauma Marae to talk to iwi about the value of the wetlands near Irirangi following survey work being completed there last year. The report was well received. Individualised landowner reports on known Tararua forest fragments and wetlands for Akitio Scheme Liaison Committee Members have now all been prepared and will be sent to the relevant landowners, along with a copy of the Tararua Forest Fragments Survey Report, as requested by the Scheme Liaison committee.

### **One Plan Implementation and Info Requests:**

#### Context

- 11.2.10 The Environment Court's decision on the Land Use Activities and Indigenous Biodiversity chapter and Schedule E (the list of threatened, rare, and at-risk indigenous habitat types) of the One Plan has given Horizons direction for the regulation of certain activities, such as vegetation clearance, which significantly affect the region's indigenous biological diversity. Horizons has committed to providing an RMA advice and information requests service for making sure the One Plan biodiversity rules are easily understood and to give advice on whether a consent is required under those rules.

#### Update

- 11.2.11 Over the period, Science staff continued with closing out work with four landowners who have requested on-site advice on either how to avoid disturbance of significant habitats or on consent application information requirements for activities in threatened habitats. Staff also assessed the status of a small bush remnant that is inside the proposed irrigation area for the treated wastewater from the Feilding Wastewater Treatment Plant. The visit was initially separate from the resource consenting process due to an oversight by the Applicant. The site was found to trigger One Plan rules for protection of natural heritage and the matter of

how best to protect the biodiversity values of the site now lies within the resource consenting process.

#### **Pest Management Strategy Support:**

##### Context

11.2.12 Horizons' Regional Pest Plant Management Strategy (RPPMS) is presently under review and a re-shape of both RPPMS and the Regional Pest Animals Management Strategy (RPAMS) into a combined Regional Pest Management Plan is being undertaken.

##### Update

11.2.13 Over the period, staff have continued to contribute to briefing papers that will be delivered to Members in time for a further workshop in August.

#### **Annual Operational and Monitoring Report 2012-13:**

##### Context

11.2.14 Reporting on biodiversity research and monitoring is primarily via the Environment Committee report. The LTP has a specific target to "Provide an annual operational report and provide annual monitoring report by November each year".

##### Update

11.2.15 The annual operational and monitoring report for the 2012-2013 year was presented to the Environment Committee in September 2013 as a part of regular reporting.

#### **Annual Operational and Monitoring Report 2013-14:**

##### Context

11.2.16 Reporting on biodiversity research and monitoring is primarily via the Environment Committee report. The LTP has a specific target to "Provide an annual operational report and provide annual monitoring report by November each year". This is normally presented to the Environment Committee as a part of regular reporting for the fourth quarter. The aim for 2013-14 is to deliver a specific report with more detail on operational matters and monitoring results. The task is built into the biodiversity monitoring and research output as a specific measure.

##### Update

11.2.17 Preparation of the content of the annual operational and monitoring report for the 2013-14 year has in effect been started as a consequence of the information presented in this current Environment Committee report, being the sum of the biodiversity research and monitoring activity over the course of the financial year.

## 11.3 Monitoring summary

Project	Key Deliverables	Progress to Date
Totara Reserve Outcomes Monitoring	Pest Plants Report	<ul style="list-style-type: none"> <li>Data from 2012 observations has been loaded.</li> <li>Observations reported to weeds field team so that they can act on the information.</li> <li>Research report pending (requires internal peer review).</li> </ul>
	Possum Report	<ul style="list-style-type: none"> <li>Field observations checked and loaded to a spreadsheet, and analysed.</li> <li>Results collated and general findings reported to Council via Environment Committee report.</li> <li>Research report pending (undergoing review).</li> </ul>
	Rat Report	<ul style="list-style-type: none"> <li>All monitoring runs complete.</li> <li>Results collated and general findings reported to Council via Environment Committee report in May.</li> <li>Research report pending (undergoing review).</li> </ul>
	Bird Report	<ul style="list-style-type: none"> <li>Field data collection and analysis complete.</li> <li>General findings reported to Council via Environment Committee report.</li> <li>Research report pending (undergoing review).</li> </ul>
Forest Fragments and Wetlands	Evaluation of current systems	<ul style="list-style-type: none"> <li>Scoping of issues continues.</li> </ul>
	Report of Tararua Forest Fragments Survey	<ul style="list-style-type: none"> <li>Report finished.</li> </ul>
	Hui with Waiouru wetlands landowners	<ul style="list-style-type: none"> <li>Hui attended 7 June 2014 at Raketepauma Marae.</li> </ul>
Regionally Consistent Biodiversity Monitoring and Information Sharing	Biodiversity Indicators	<ul style="list-style-type: none"> <li>11 of the 17 indicator reports have been finalised.</li> <li>Regions have identified first indicator set for implementation.</li> <li>Implementation begins with initial contact (made to each council in March).</li> <li>Draft report on the implementation of Measure 1 – Indigenous Landcover circulated to the Biodiversity Working Group for comment.</li> </ul>
	Biodata guides	<ul style="list-style-type: none"> <li>Draft guides presented at Dataversity workshop in October.</li> <li>Completed in December.</li> </ul>
	Biodata Services Stack	<ul style="list-style-type: none"> <li>TFBIS funding secured in August.</li> <li>User cases defined and workstreams drafted in October.</li> <li>Agreement for Horizons' leadership in case studies (a funded term)</li> <li>Contracts secured in March.</li> <li>Survey questionnaire designed in March and implemented in April.</li> <li>Workshops undertaken in May.</li> <li>Phase One (survey and workshop findings report) complete</li> </ul>
	Dataversity	<ul style="list-style-type: none"> <li>Steering team teleconference in July to develop Dataversity Workshop agenda.</li> <li>Workshop sponsorship secured over the period and workshop held in October.</li> <li>Steering team catch up by email in February.</li> <li>Contract for Dataversity Communications Strategy let in May.</li> <li>Dataversity Communications Strategy document complete.</li> </ul>
One Plan Implementation and Information Requests	Provide Information	<ul style="list-style-type: none"> <li>Formal information requests (that result in a letter with disclaimer) are being served at a rate of approximately 1 per fortnight.</li> </ul>
	Undertake RMA advice site visits	<ul style="list-style-type: none"> <li>Six site visits resulting in formal letters identifying threatened, at-risk, or rare habitats.</li> </ul>

Project	Key Deliverables	Progress to Date
	One Plan Implementation	<ul style="list-style-type: none"> <li>■ More detailed notes for the guidance document supporting Schedule F have been written up.</li> <li>■ A draft plan for training staff on Schedule E has been put to the Policy Team for their review.</li> <li>■ Significant time spent giving advice to small forestry operators.</li> <li>■ In-field training of two staff as practice run / testing of Schedule F training.</li> </ul>
	Planting Guides	<ul style="list-style-type: none"> <li>■ Seed funding and plant list for an internet-based guides project was provided to Nature Space.</li> </ul>
Pest Management Strategy Support	Review the Regional Plant Pest Management Strategy	<ul style="list-style-type: none"> <li>■ Stakeholder meetings / discussion with DOC, Greater Wellington, Hawkes Bay, and MPI to discuss Horizons “Good Neighbour” rules and to compare current management regimes.</li> <li>■ Council Workshop held in April.</li> <li>■ Notes from workshop circulated to Members.</li> <li>■ Contribution to briefing papers to Members.</li> </ul>
	Legumes in Rangipo Desert	<ul style="list-style-type: none"> <li>■ Extent of broom infestation has been mapped.</li> <li>■ A bid to aid multi-party reporting of control effort was prepared to submit to Envirolink, but was not submitted due to other priorities and the limited availability of Envirolink funds.</li> </ul>
	Possum Migration from DOC estate	<ul style="list-style-type: none"> <li>■ Envirolink bid funded.</li> <li>■ Meeting with Landcare Research, industry and DOC partners to determine research blocks.</li> <li>■ Landcare’s advice on implementation of research received.</li> <li>■ Workshop with Landcare, DOC, and possum harvesters in June to plan out how to undertake the field research work.</li> </ul>

James Lambie  
**SCIENCE COORDINATOR**

Jon Roygard  
**FRESHWATER & SCIENCE MANAGER**



## Environmental Education

### 12 Environmental Education

#### 12.1 Annual Plan targets

Measure	Quarterly Period					YTD Actual	Target	%	F/cast
	1st	2nd	3rd	4th	5th				
Enviroschools workshops held	1					1	16	6%	100%
Waiora sessions conducted	5					5	30	16%	100%
Community engagements <sup>1</sup>	5					5	22	22%	100%

	Districts								Total
	Ruapehu	Wanganui	Rangitikei	Manawatu	Palmerston North City	Tararua	Horowhenua	Ruahine Kindergarten Association	
Enviroschools	5	9	1	8	6	1	1	3	34
Friends of Enviroschools	1	1	0	3	3	8	0	0	16

#### 12.2 Activity Report

##### Waiora:

- 12.2.1 The Educator conducted a Waiora session with: Takaro School twice at the Kahuterawa Reserve and again at the Kawau Stream; Carncot School at the Kahuterawa Reserve; Ngamatea School at a local farmer's unnamed stream.
- 12.2.2 Ngamatea School has currently booked out a Waiora kit to conduct a further Waiora session.
- 12.2.3 The Educator presented Waiora to all staff and assisted in planning for a Waiora session at: West End School for a two-day Waiora event; Manukura in Palmerston North; Bulls School for the River Journey for the junior classes and Waiora for the senior classes;

<sup>1</sup> Community engagements do not include Waiora sessions or Enviroschools workshops. This measure will track all other events and activities that fall within Environmental Education.

## **Enviroschools:**

- 12.2.4 The Regional Coordinator has visited Papatawa School in the Tararua District to discuss the Friends of Enviroschools initiative.
- 12.2.5 The Regional Coordinator received confirmation of funding for facilitation from Wanganui District Council of \$10,000 exclusive of GST. Mandy Brooke has renewed her contract as the Enviroschools Facilitator for the Wanganui District.
- 12.2.6 The Regional Coordinator received confirmation of funding for facilitation from Manawatu District Council of \$7,100 exclusive of GST. Rowena Brown has renewed her contract as the Enviroschools Facilitator for the Manawatu District.
- 12.2.7 The Regional Coordinator attended an all-staff meeting at Feilding Intermediate School. Feilding Intermediate School is a Friend of Enviroschools and their lead teacher requested the Regional Coordinator's assistance to introduce the entire teaching staff to the Enviroschools Programme.
- 12.2.8 The Manawatu-Wanganui Regional Team had their first team meeting for the 2014-15 financial year. The Regional Vision was revisited and amended:
- Re-establish the Enviroschools kaupapa and support networks in and between our current Enviroschools in the Horizons Region. We aim to provide encouragement and support to allow our Enviroschools to move forward on their individual Enviroschools journey and establish a time when all schools in our Region are working towards a self-directed approach towards learning for sustainability.*
- 12.2.9 The Regional Coordinator held an Early Childhood Education (ECE) sector-specific workshop in Palmerston North. All ECE centres in the region were invited to attend with 14 participants on the day. It was themed at making connections with Te Whāriki and exploring how the programme fits into an ECE framework.
- 12.2.10 The Enviroschools Term 2 Reports and Annual Summaries for the 2013-14 financial year are not included in this report, but are available on request.

## **Other:**

- 12.2.11 The Educator, alongside Amy Shears, presented to Paraparaumu College on the Manawatu River. The focus was water quality but it also provided a look at the history of the Manawatu River, what changes have occurred throughout its history, and how Horizons Regional Council has been working to improve water quality.
- 12.2.12 The Educator presented to the Ashhurst Cubs on the topic of water quality using both River Journey and a Love Your Coast presentation on the impact of litter on the environment. The Cubs then created posters with messages that include: reduce, reuse, recycle; no littering; protect our marine and freshwater animals. From this activity the Cubs who participated earned their "Conservator" Badge.
- 12.2.13 The Educator, alongside Aaron Madden, met with Cornerstone Christian School regarding support for the school to plant native areas throughout the grounds.
- 12.2.14 The Educator, alongside Anna Deverall, presented a Fish Migration Day Certificate for exceptional participation to Feilding Intermediate School. Students from the school entered the colouring-in competition and, although they did not win, the calibre of the entries was to such a high degree that they were presented with native trees, a book on whitebait and the Fish Migration Day Certificate. This was all presented to the school during assembly.
- 12.2.15 The Educator, alongside Aaron Madden, met with Sarah Walsh regarding the Ohau Beach Walkway.

- 12.2.16 The Educator facilitated a Care Code session with all students at Weber School.
- 12.2.17 The Educator presented to the senior classes at Saint Peter's College during assembly, focusing on the impact of litter in the environment with a Love Your Coast presentation.
- 12.2.18 The following schools have requested from the Educator more information on and/or copies of Kura Kaitiaki: Water Conservation: St Johns Hill School in the Wanganui District; Bulls School in the Rangitikei District; Manukura in Palmerston North.

### 12.3 Environmental education summary

Project	Key Deliverables	Progress to Date
Waiora	<p><b>30 sessions conducted</b></p> <p><i>5 sessions conducted</i></p>	<ul style="list-style-type: none"> <li>▪ Takaro School twice at the Kahuterawa Reserve and again at the Kawau Stream.</li> <li>▪ Carncot School at the Kahuterawa Reserve.</li> <li>▪ Ngamatea School at a local farmer's unnamed stream, plus the school borrowed the kit to conduct another session later in the week.</li> </ul>
Enviroschools	<p><b>16 workshops held</b></p> <p><i>1 workshop held</i></p>	<ul style="list-style-type: none"> <li>▪ An ECE specific workshop with 14 participants.</li> </ul>
Community engagements	<p><b>22 Community engagements</b></p> <p><i>5 community engagements</i></p>	<ul style="list-style-type: none"> <li>▪ Paraparaumu College presentation on the Manawatu River.</li> <li>▪ Ashhurst Cubs presentation on water quality.</li> <li>▪ Feilding Intermediate School Fish Migration Day Certificate presentation.</li> <li>▪ Weber School Care Codes.</li> <li>▪ Saint Peter's College presentation on water quality.</li> </ul>

Helen Thomas  
**ENVIRONMENTAL EDUCATOR**

Kate Ritani  
**MEDIA AND COMMUNICATIONS MANAGER**





# Biodiversity

## 13 Biodiversity protection programme

### 13.1 Annual Plan targets – Year to date progress

Measure	Reporting Period				YTD Actual	Target	%
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>			
<b>New high priority wetlands under management</b>	<b>0</b>				<b>0</b>	<b>3</b>	<b>0%</b>
New high priority wetlands under partial management	0				0	NA	NA
<b>New high priority bush remnants under management</b>	<b>7</b>				<b>7</b>	<b>6</b>	<b>117%</b>
New high priority bush remnants under partial management	1				1	NA	NA
Environmental Grants supported	12				12	25	48%
Environmental Grants completed (paid out)	0				0	25	0%

### 13.2 Annual Plan targets - Life to Date Progress

Measure	Reporting Period					YTD Actual	YTD Target	%
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>			
<b>Total high priority wetlands under management</b>	<b>0</b>					<b>53</b>	<b>56*</b>	<b>95%</b>
Total high priority wetlands under partial management	0					26	NA	NA
<b>Total high priority bush remnants under management</b>	<b>7</b>					<b>107</b>	<b>112*</b>	<b>96%</b>
Total high priority bush remnants under partial management	1					28	NA	NA

### 13.3 Activity Report

#### General:

13.3.1 In this period staff dealt mainly with planting jobs. Staff continued to receive calls from landowners seeking advice or assistance, with many of these followed up with a site visit.

#### Community/private biodiversity:

13.3.3 A total of 12 biodiversity-related Environmental Grant and Biodiversity Support applications have been approved so far in the 2014-15 financial year. This figure includes high priority sites, lower priority sites and currently unclassified sites. Some of the unclassified sites that receive Environmental Grants are expected to be confirmed as high priority sites in time. None of these jobs have been completed or claimed on yet.

#### High priority wetlands:

13.3.4 No new wetland sites came under active management in this period. The total number of high priority wetlands under active management is 53 and the number of sites under partial management is 26. Partial management means that not all of the steps towards active management have been completed. In most cases the 'missing' part of the project is plant and/or animal pest control.

#### High priority bush remnants:

13.3.5 Seven new bush remnants were added to the list of actively managed sites in this period. They were Aotea Bush, Field's Track Roadside Bush, Joe's Bush and Mangawhero Riparian Bush in the Whanganui District, and Chan's 1, Pah Hill Bush and Bristol's Bush in the Ruapehu District. Some of these sites were upgraded from partially managed status. Read Bush Makuri in the Tararua District was added to the partially managed list. The net effect is that the total number of high priority bush remnants under active management increases to 107 and the number of sites under partial management drops to 28. Partial management means that not all of the steps towards active management have been completed. In most cases the 'missing' part of the project is plant and/or animal pest control.

Aaron Madden

**ENVIRONMENTAL COORDINATOR – BIODIVERSITY**

Bill Martyn

**MANAGER – BIOSECURITY & BIODIVERSITY**

## 14 Community Biodiversity

### 14.1 Annual Plan targets

Measure	Reporting Period				YTD Actual	Target
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		
<b>Totara Reserve Regional Park</b>						
Totara Reserve Regional Park (Manawatu)	5%				5%	100%
<b>Collaboration Projects</b>						
Manawatu Gorge (Palmerston North and Tararua)	5%				5%	100%
Pukaha/Mt Bruce (Tararua)	5%				5%	100%
Tawata Mainland Island (Ruapehu)	5%				5%	100%
Kia Wharite (Ruapehu)	5%				5%	100%
Rangitikei Environment Group (Rangitikei)	5%				5%	100%
Waitarere Beach (Horowhenua)	5%				5%	100%
PN Weedbusters (Palmerston North and Manawatu)	0%				0%	100%
<b>Community Projects (10 supported)</b>						
Manawatu Estuary (Horowhenua)	5%				5%	100%
Massey Hill (Palmerston North)	0%				0%	100%
Save Our River Trust (Horowhenua)	5%				5%	100%
Oroua Blue Duck (Manawatu) - completed	NA				NA	NA
Bushy Park (Wanganui)	100%				100%	100%
Kitchener Park (Manawatu)	0%				0%	100%
Moawhango Community Project (Rangitikei)	0%				0%	100%
Turitea Reserve (Palmerston North )	5%				5%	100%
Te Potae o Awarua (Rangitikei)	5%				5%	100%
Lower Kahuterawa Stream (Palmerston North )	5%				5%	100%
<b>New community projects supported as resources permit</b>						
Gate Pa Bush restoration (NZ Defence Force)	0%				0%	100%
Ohau Beach Walkway (Horowhenua)	5%				5%	100%

### 14.2 Activity Report (Community Projects)

#### Save Our River Trust (Horowhenua):

14.2.1 A section of the margin on Matarapa Island has been fenced to exclude cattle and has been planted with a local variety of flax.

#### Bushy Park (Wanganui):

14.2.2 The annual contribution towards pest animal control has been paid. A meeting between Horizons staff, the two local Councillors and the Bushy Park Trust has been arranged to discuss future directions.

### **Lower Kahuterawa Stream Biodiversity Restoration (Palmerston North):**

14.2.3 A successful Horizons lead community planting day called “Dig in for Kahuterawa!” was held on the 16th of August at the project site, this was in collaboration with the Linton community, NZDF, DoC, Massey University, Forest and Bird and the Keebles Bush Trust. 70 volunteers planted 2,000 plants at 3 different sites within the project area, with another 1,000 planted by contractors later in the week. The planting ended with a BBQ for all and a presentation by Horizons focusing on the projects collaboration thanking all who attended.

### **Ohau Beach Walkway (Horowhenua):**

14.2.4 A new project that sprang out of a submission to the Annual Plan. Horizons and Horowhenua District Council will support this community group to create a walkway from the end of the road through the dunes to the beach. It will include weed control and native planting and staff have already been involved with helping to plan this work.

Aaron Madden

**ENVIRONMENTAL COORDINATOR – BIODIVERSITY**

Bill Martyn

**MANAGER - BIOSECURITY & BIODIVERSITY**

## 15 Collaboration Projects – Horizons / DoC

### 15.1 Activity Report (Collaboration projects)

#### **Kia Wharite (Ruapehu/ Whanganui):**

- 15.1.1 Adjoining landowner and iwi consultation is underway for Matemateaonga 1080 block. We are currently pulling together consents and logistics for the operation. Depending on several factors this operation is due to occur in August.
- 15.1.2 Planning is also under way to include the Waitotara Conservation Area in this next round of 1080. This will ensure that there is a greater space under biodiversity protection as it adjoins the Whanganui National Park. Depending on several factors this operation is due to occur in August.
- 15.1.3 Kiwi survey was completed for the year. Weather was not ideal but we managed to complete the survey regardless. Listening points across up to 18 sites in the Matemateaonga were surveyed for kiwi call counts. This is a long term survey and results have been collected over several years.
- 15.1.4 Goat control – final block of hunting is currently being completed. Tendering process has also been completed for the hunting contracts for the subsequent 3-year period. Total 39,733 hectares to be controlled for goats includes: Te Mata, Mangapurua, Matemateaonga, Kaiwhakauka.
- 15.1.5 A national whio session was held in Whakahoro last month where specialists and community groups working to protect whio met to discuss protection methodologies, research and to do some general networking of like minds. Challenges with different trapping methods and geographic variables were discussed. The group reinforced the value of protecting the remaining founder populations of whio for their genetic diversity that they provide to the greater population. Our security site would be considered to contain a founder whio population.
- 15.1.6 Community Conservation Partnership Fund – applications were received and are being processed for community led biodiversity projects across the country. There were some local applications that may fit within the framework of Kia Wharite and we await the national decisions on the fund to see if there are any further additions to the work of Kia Wharite by other community members/ groups.

#### **Manawatu Estuary (Horowhenua):**

- 15.1.7 Horizons runs two predator trapping programmes (mustelids and rats) in the project area:
  - On the farmland between Foxton and Foxton Beach townships and extending out onto the area known as Fern Bird Flat. Trap checking is undertaken monthly, increasing to fortnightly over the Spring-Autumn period; and
  - In and around Foxton Beach settlement where 30 traps are checked weekly.
- 15.1.8 DOC undertakes weed control in the Estuary and is close to eradicating spartina. Other weeds controlled include sand acacia, marram and pink ragwort in the dunes.
- 15.1.9 DOC and Horowhenua District Council have reached agreement in relation to the derelict wharf at the Boat club reserve. This wharf is likely to be demolished and replaced with a concrete slipway in the near future.

## **Te Apiti – Manawatu Gorge (Palmerston North and Tararua):**

- 15.1.10 The Manawatu Gorge Biodiversity Project (MGBP) has gained wide public interest in the last 12 months with a number of speaking engagements outlining the stakeholder partnership and how it has been so successful in achieving the project's mission and vision. This success is attributed to the sharing of resource and expertise between the stakeholder group, sticking to the project plan, and the focus around strategic planning into the future. These are the key notes of interest presented when addressing such audiences as the Local Government Strategic Planning Group and the NZ Recreation Association Conference. Presentations to community groups have a strong focus on the restoration of the flora and fauna, planting of trees, the rata programme, animal and plant pest operations, track and facilities development plus what is in progress, such as a new mountain bike track.
- 15.1.11 A meeting was held early in July to consider how the sustainable development, protection and promotion of Te Apiti – Manawatu Gorge should be supported and organised in the future. The outcomes from the meeting are currently being finalised. We expect this will result in the establishment of a legal entity and a future-proofed governance and management structure for the project.
- 15.1.12 A new section of mountain bike track was opened on the Tararua side of the project area. A blessing by Rangitāne kaumatua was held at dawn to mark the occasion. The level of public utilisation of this facility will affect future DOC support for expanding the mountain bike network within the Te Apiti project.
- 15.1.13 A sub-project was also supported in the last year as part of the wider Gorge Biodiversity Project. Te Hononga Maunga (the Joining of the Mountains) was introduced to manage cultural aspects of any works planned for the Gorge and to provide oversight of further cultural artworks planned. The "Te Hononga Maunga Advisory Group" is co-chaired by Craig Mitchell (HRC) and Wiremu Kingi Te Awe Awe (Te Rangimarie Marae). In addition to 'signing off' any cultural aspects of the Gorge project it is also charged with securing additional funding to ensure that it can remain in operation after the current carving project is completed.
- 15.1.14 Carving of the maihi (fascia boards) for the information kiosks or whare at the Gorge entrance is well advanced. Craig Kawana is the master carver and is carving at the Ashhurst Domain where a facility has been set up to carry out the work. A positive unintended consequence of this project being set up has been the steady stream of people from the general public and overseas going along to watch the carvings taking shape.

## **Pukaha/Mt Bruce (Tararua):**

- 15.1.15 Catch Tally to date:
- Ferrets .....7
  - Stoats ..... 10
  - Cats .....31
  - Rats ..... 122
  - Hedgehogs .....125
  - Other .....25
- 15.1.16 The Pukaha Board is seeking an opportunity to investigating with horizons, opportunities to intensify pest control within the perimeter buffer zones. This is seen as the best method of reducing the risk of mustelid incursions to the Kiwi territories within the reserve.

### **Totara Reserve Regional Park (Manawatu):**

- 15.1.17 The Totara Reserve Regional Park Asset Management Plan has been approved by Council and is awaiting sign-off by the Minister of Conservation.
- 15.1.18 Staff attended the Central Energy Trust AGM and thanked the Trustees for the Grant received for purchasing additional electric barbecues and installing extra powered camping sites. Councillor Rieger had also mentioned it during his appreciation speech that covered three projects and organisations he has involvement with and that had received Grants that year.
- 15.1.19 The lease agreement for Camp Rangī Woods Trust was presented to the Trust along with an invoice. The CRW Trust is yet to sign the lease agreement and wishes to negotiate some of the terms of the lease.

### **RAMSAR:**

- 15.1.20 DOC is currently assessing the review requirements for the Manawatu Estuary RAMSAR site. The 5-year review of the site is due. Once a clear understanding of the requirements is known, resources will be directed to the review process. Outcomes will be reported in due course.
- 15.1.21 The current review of the Manawatu Estuary Management Plan is almost complete and will be shared with Horizons in order to enable a collaborative approach.

### **Foxton Loop:**

- 15.1.22 DOC has held discussions with Horowhenua District Council in order to understand expectations in regard to the Foxton Jetty (wharf). It is anticipated that interested parties will be asked to meet in order to plan a pathway forward and it is hoped that this initiative might lead to a more collective approach to the management of the Loop in its entirety.

### **Nature Central:**

- 15.1.23 1.1.20 The Project Co-ordinator for Nature Central has resigned effective April 2014, the role has been advertised and applications are being received. Sarah Owen has been seconded to the role for twelve months from her Partnerships Management role in Wellington. Sarah has taken up the Nature Central position based in Hawke's Bay Regional Council in Napier. DOC is funding this position for the twelve month period. Nature Central provides a unique opportunity for Central and Local Government in the southern North Island to work in closer collaboration. Benefits include operational and planning efficiencies. Also the opportunity to develop strategic direction in collaboration is proving very beneficial. Examples include pest/predator management including research initiatives, recreation asset development and management, joint land management and use (specific sites). A significant project is currently addressing the co-ordinated approach to wilding pine eradication. Knowledge and experience sharing among the agencies is proving advantageous. Secondment and location sharing opportunities are also considered worthy of consideration.

Bill Martyn  
**ENVIRONMENTAL MANAGER – BIOSECURITY & BIODIVERSITY**

Chris Lester  
**RELATIONSHIP MANAGER – PALMERSTON NORTH – DOC**

## 15.2 Biodiversity summary

Project	Key Deliverables	Progress to Date
High priority bush remnants and wetlands	3 wetland sites and 6 bush remnant sites under active management	<ul style="list-style-type: none"> <li>■ Bush remnants target has been exceeded but no progress to report on wetlands target</li> </ul>
Save Our River Trust	A fenced margin to protect flax plantings from stock.	<ul style="list-style-type: none"> <li>■ Fencing and flax planting completed on Matararapa Island.</li> </ul>
Bushy Park	Contribute to pest control work.	<ul style="list-style-type: none"> <li>■ Annual contribution paid.</li> </ul>
Lower Kahuterawa Stream	Organise a public planting day.	<ul style="list-style-type: none"> <li>■ Planting day organised for mid-August.</li> </ul>
Ohau Beach Walkway	<p>Improve access and undertake initial weed control.</p> <p>Assist group in developing a project plan.</p>	<ul style="list-style-type: none"> <li>■ Site visit completed and contractor engaged to undertake initial weed control and track cutting.</li> </ul>
Te Apiti – Manawatu Gorge	Investigate options for a formalised governance structure.	<ul style="list-style-type: none"> <li>■ A successful facilitated workshop with stakeholders and partners identified a preferred option and details are currently being worked through.</li> </ul>



## Biosecurity Activity (Animals)

### 16 Possums (Possum Control Operations)

#### 16.1 Annual Plan targets

Measure	Reporting Period				YTD Actual	Target	%
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>			
Control maintenance operational areas (by count)	-				-	62	0
Control initial operational areas (by count)	-				-	8	0
Deferred operation (by count)	31				31	31	100%
<b>Overall programme control (by count)</b>	<b>31</b>				<b>31</b>	<b>101</b>	<b>30.7%</b>
Control maintenance operational areas (by area)	74,491				74,491	632,167	11.8%
Control initial operational areas (by area)	-				-	101,210	0
Deferred operation (by area)	323,821				323,821	323,821	100%
<b>Overall programme control (by area)</b>	<b>398,312</b>				<b>398,312</b>	<b>1,057,198</b>	<b>38%</b>
MOH Approvals	70				70	70	100%
Record all inputs	-				-	70	0

#### 16.2 Activity Report

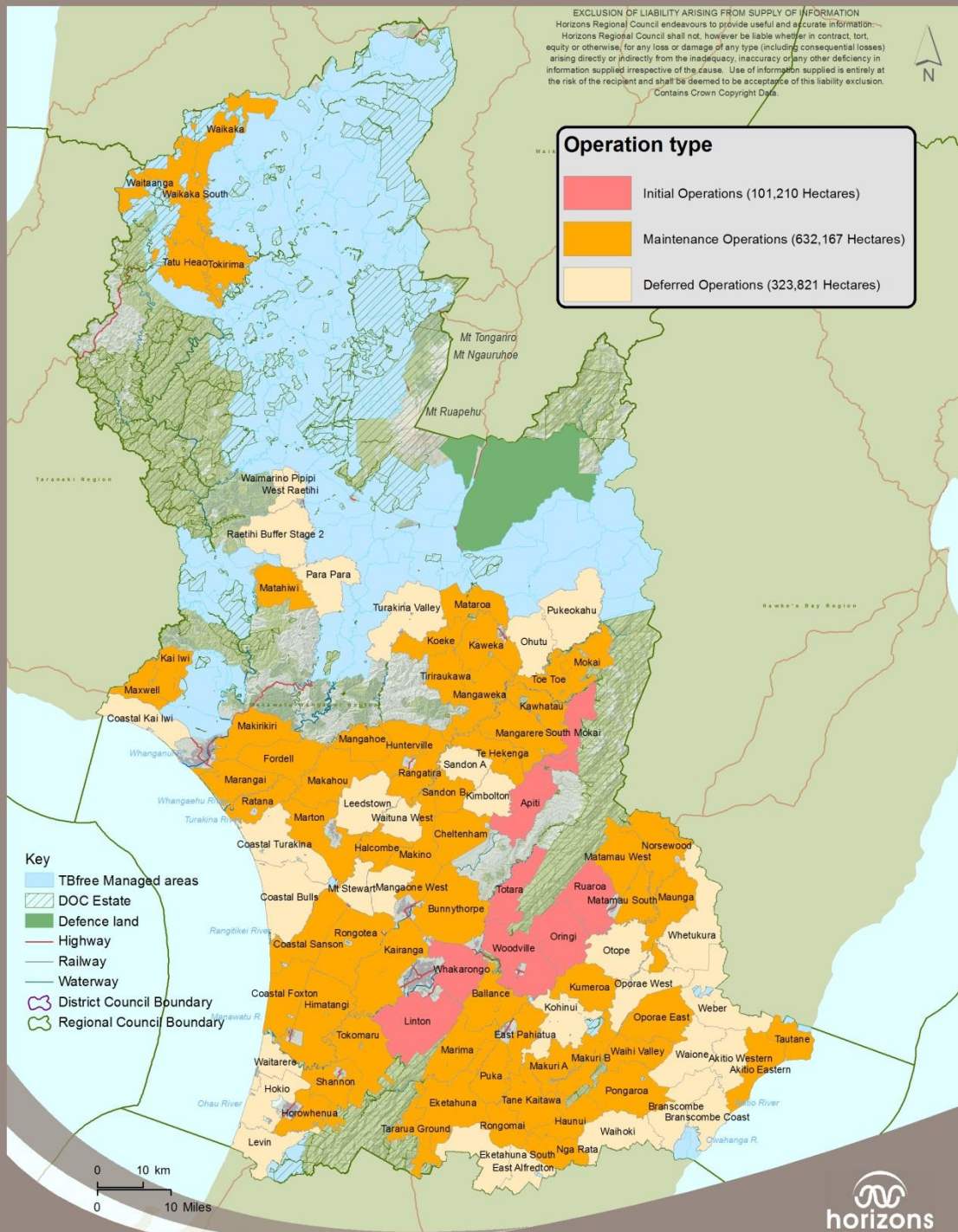
- 16.2.1 The last of the 2013-14 operational work was completed in early July. Overall the programme went well with very few issues/problems experienced. All of the service providers delivered the operational data, reports and other information relating to the contract specifications in a professional timely manner.
- 16.2.2 The 2014-15 PCO has commenced with 62 x maintenance and 8 x initial operations confirmed in the programme. The operational plans submitted by the service providers for the ongoing maintenance contracts have been reviewed and approved. The contract documents for all of these operations have been signed.

- 16.2.3 A considerable amount of time has been spent obtaining Medical Officer of Health approval to use controlled substances in the PCO areas (all permits have been obtained).
- 16.2.4 The RRT have been allocated four of the new operations this year, with remaining four going out to tender. We have 17 external contractors pre-approved for possum control work in the region, which ensures a very robust tender process. The tenders are currently out and close on Friday 22 August. We hope to have all of the contractors selected and contracts signed by the end of August.

Table 8: Initial Possum Control Operations 2014-15

PCO Name	Service Provider	Area (hectares)
Apiti	Tendered	11,921
Linton	RRT	18,417
Oringi	RRT	13,041
Ruaroa	Tendered	12,396
South Mokai	RRT	9,028
Totara	Tendered	9,219
Whakarongo	Tendered	11,052
Woodville	RRT	16,136
		<b>101,210</b>

Eric Dodd  
**ENVIRONMENTAL PROGRAMME COORDINATOR (ANIMALS)**



## Possum Control Operation - 2014-15 (Year 9)

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Map 4: 2014-15 PCO (Year 9)



## 17 Rooks

### 17.1 Annual Plan targets

Measure	Reporting Period				YTD Actual	Target	%
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>			
Existing rook colonies (rookeries)	-				-	Record	
New sites	-				-	Record	
Total rook colonies (rookeries) (a + b)	-				-	90	
<b>Aerially treated rookeries</b>	-				-	<b>90</b>	
<b>Ground based rook control operations</b>	-				-	<b>6</b>	
Report ground control efficacy (% estimated kill)	-				-	90%	
Ensure all contractual obligations are completed before annual rook control programme begins	1				-	Contracted signed with aerial provider	

### 17.2 Activity Report

- 17.2.1 No rook control was undertaken during the reporting period.
- 17.2.2 Dead rooks were positioned on a paddock in the Waituna West area, to deter rooks away from the site.
- 17.2.3 Over the late autumn-early winter period we received very few calls from landowners relating to crop/pasture damage caused by rooks. This is a reflection of the success of the aerial nest baiting work over the past 2-3 seasons.
- 17.2.4 Rooks have begun revisiting breeding sites to build/tidy up nests in preparation for the new season. The RRT team are gearing up for the aerial programme with poison being prepared, landowner contact lists updated etc. It is anticipated that this year's aerial programme will target fewer than 350 active nests and work is planned to commence in the first week of October.

Eric Dodd  
**ENVIRONMENTAL PROGRAMME COORDINATOR (ANIMALS)**

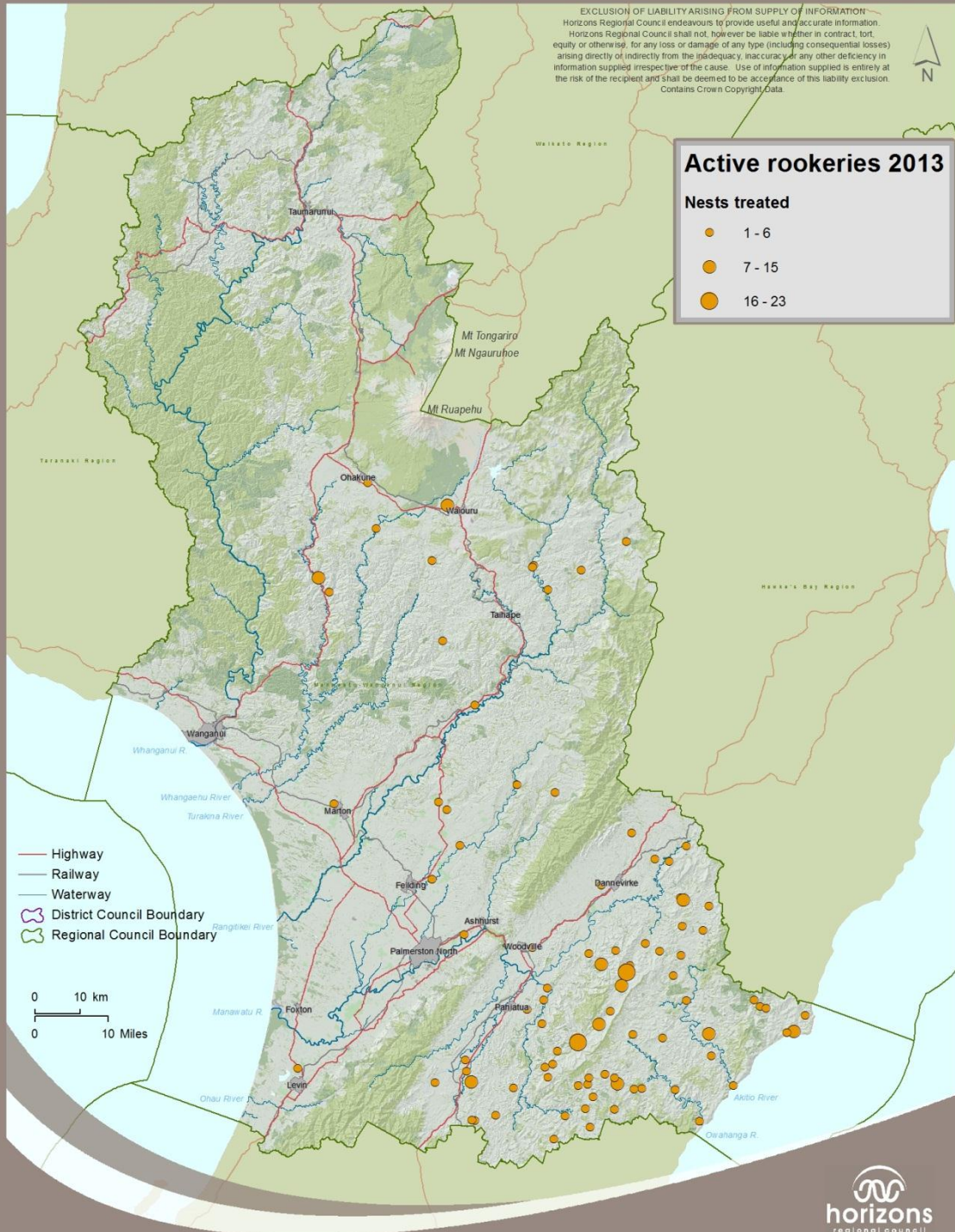
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**Active rookeries 2013**

**Nests treated**

- 1 - 6
- 7 - 15
- 16 - 23



**Rookery Distribution Post Aerial Control 2013**



Private Bag 11025  
 Manawatu Mail Centre  
 Palmerston North 4442

24hr Freephone  
 0508 800 800  
 Fax 06 952 2929  
[www.horizons.govt.nz](http://www.horizons.govt.nz)

## 18 Amenity Pests

### 18.1 Annual Plan targets

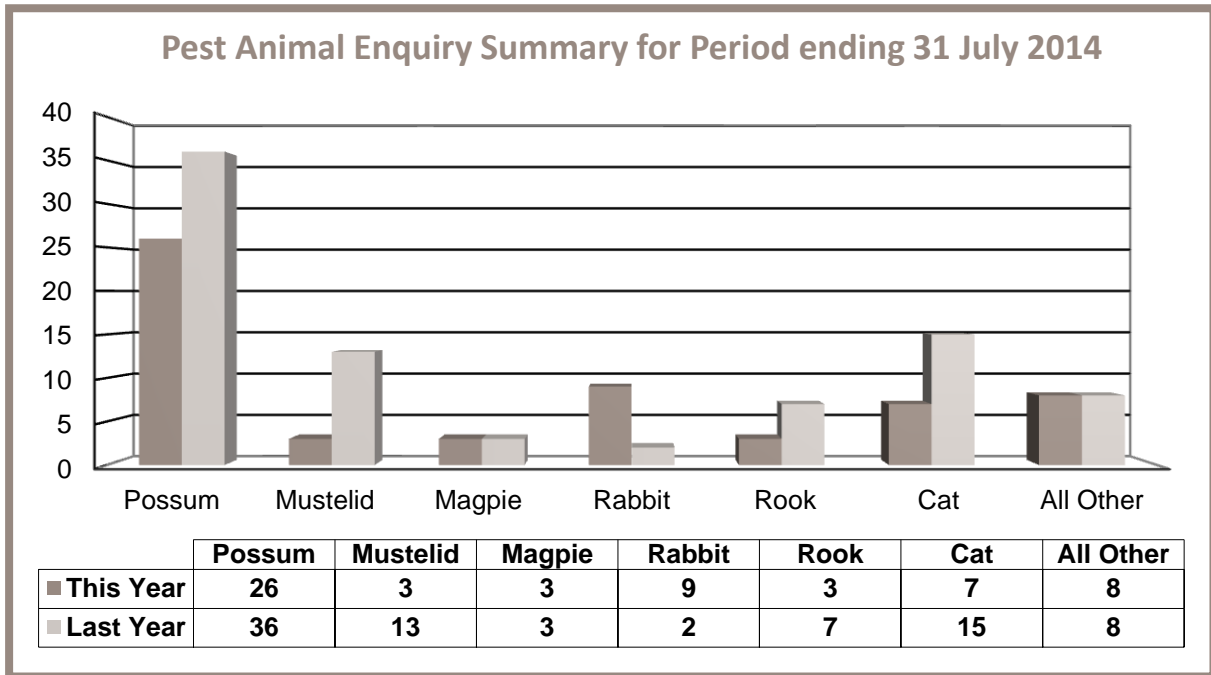
Measure	Reporting Period				YTD Actual	Target	%
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>			
Manage and record all amenity pest enquiries using 'Frontline' corporate database	59				59	Record	100%
Respond to all enquiries within 48 hours of receipt	55				55	100%	93%
Close out or action all enquiries within 5 working days of receipt	45				45	100%	76%
Report on all amenity pest enquiries	Reported below						

### 18.2 Activity Report

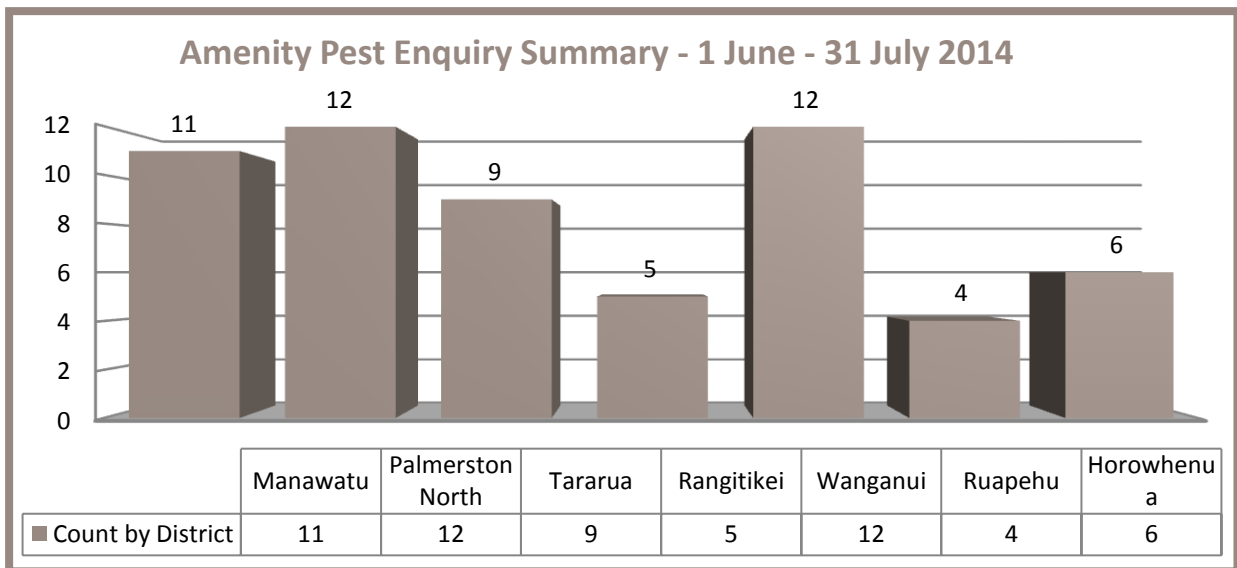
- 18.2.1 Due to Ray Wilman being away on holiday for 3 weeks a number of frontline enquiries weren't followed up and actioned within the 24 hr – 5-day period. All enquires were assessed as they came in, with anything considered urgent dealt with immediately and the others held over until Ray returned to work. Ray has worked his way through the balance of enquiries since he has returned to work and they are now all up to date.
- 18.2.2 A total of 59 enquiries were received over the reporting period. These enquiries are summarised in graphs 1 and 2.
- 18.2.3 The highest number of enquiries received were shared between landowners from Palmerston North and Wanganui areas followed by the Manawatu and Tararua Districts.
- 18.2.4 Enquiries about possums topped the list (26). Landowners were assisted with advice on control techniques and were supplied with traps and baits in some circumstances. We continue to get regular requests for bait to 'top up' bait stations in PCO areas.
- 18.2.5 Seven enquiries relating to cats were received. Overall the number of cat related enquiries is trending down. We continue to work with District and City Councils to encourage them to assist with cat control in urban and peri-urban areas.
- 18.2.6 There were 9 rabbit related enquires. Numbers don't seem large for this pest but this is normal for this time of year. All enquiries related to peri-urban sites (in gardens and around buildings). Pindone poison and advise on control options were provided.



Photo 9: An 'urban possum' caught in a possum master trap (photo Ray Wilman)



Graph 4: Pest Animal Enquiry Summary – by Pest Type



Graph 5: Pest Animal Enquiry Summary – by District

Eric Dodd  
**ENVIRONMENTAL PROGRAMME COORDINATOR (ANIMALS)**

## 19 Monitoring

### 19.1 Annual Plan targets

Measure	Reporting Period				YTD Actual	Target	%
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>			
Monitor agreed sample of ex-TBfree PCOs	-				-	6	0
Monitor agreed sample of new (initial) PCOs	-				-	14	0
<b>RTC of sampled ex-TBfree PCOs</b>	-				-	<5%	
<b>RTC of sampled maintenance PCOs</b>	-				-	<10%	

### 19.2 Activity Report

- 19.2.1 The last four wax tag monitors for the 2013-14 year were completed in the reporting period.
- 19.2.2 The two ex TBfree operations (East Alfredton and Kohinui) returning 0.1% and 3.1% RTC results respectively against a target of 5% RTC. The two Horizons initiated operations (Leedstown and Kimbolton) returned a 7.3% and 1.2% RTC result (against a target of 10% RTC). All four of these operations will be 'deferred' from control work next year.
- 19.2.3 The overall result for the 2013-14 PCO was excellent with only 1 of the 20 operations monitored failing to meet the predetermined operational target. The average RTC result across the 20 programmes monitored being 3.03 %.
- 19.2.4 The 2014-15 Monitoring Plan has been prepared. Twenty PCOs (totalling 198,071 hectares of land) are scheduled to be monitored by approximately 277 wax tag lines. Refer to the monitoring map for the location of the areas that are planned to be monitored in the coming year (map 3).
- 19.2.5 The 'monitor designs' have been completed for the first 4 operations, with the first of the lines likely to be set in the next fortnight.
- 19.2.6 The full summary of monitoring results will be presented in the end of year monitoring report.

PCO life to date average RTCi results (June 2006 to 31 <sup>st</sup> July 2014)	
Ex TBfree operations <b>5% target</b>	Initial operations <b>10% target</b>
<b>2.30% average</b> (27 x operations)	<b>4.91% average</b> (29 x operations)
Overall average (56 x operations) <b>3.67%</b>	

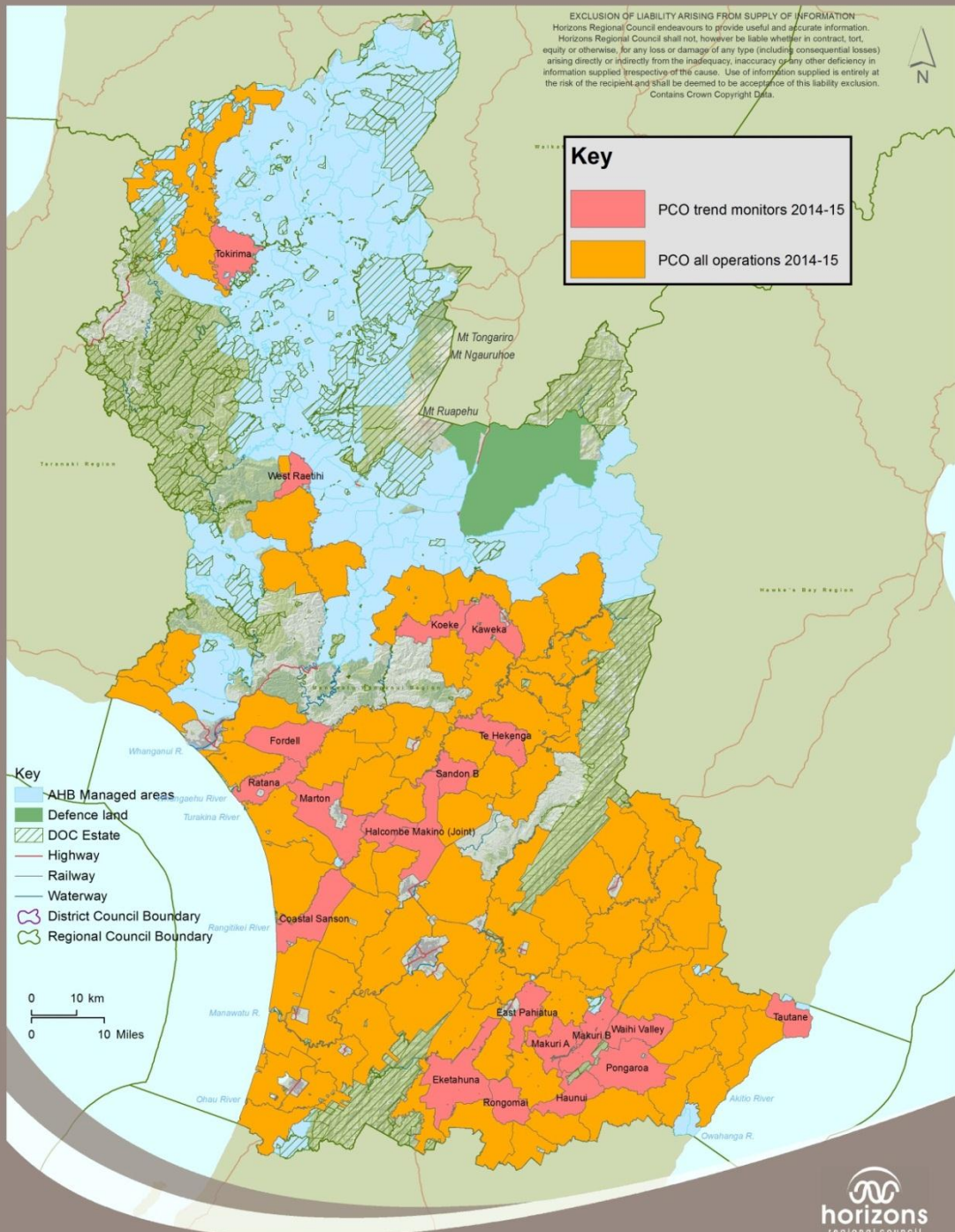
Eric Dodd  
**ENVIRONMENTAL PROGRAMME COORDINATOR (ANIMALS)**

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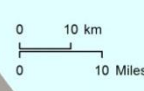
**Key**

- PCO trend monitors 2014-15
- PCO all operations 2014-15



**Key**

- AHB Managed areas
- Defence land
- DOC Estate
- Highway
- Railway
- Waterway
- District Council Boundary
- Regional Council Boundary



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**Possum Control Operation - 2014-15 (Year 9) Monitoring Plan**

Prepared by GEM, Horizons Regional Council; Drawn on 14 08 2014. Contains Crown Copyright Data.

Map 5: 2014-2014 PCO monitoring map.

### 19.3 Biosecurity Activity (Animals) summary

Project	Key Deliverables	Progress to Date
Possum Control Operation	Operational Implementation	<ul style="list-style-type: none"> <li>2014-15 Operational plan reviewed and approved</li> <li>Control work commenced early July</li> <li>9 x operations underway</li> <li>7% of programme completed</li> <li>Tender process commenced for external contracts</li> <li>MOH permits obtained</li> </ul>
	Success indicators	<ul style="list-style-type: none"> <li>Monitoring Plan prepared</li> <li>Operational areas selected</li> <li>4 x monitoring programmes due to commence</li> <li>Audit programme being developed</li> </ul>
	Data Management	<ul style="list-style-type: none"> <li>2014-15 folders have been set up</li> <li>Data starting to come in from service providers</li> </ul>
Rook Management	Aerial Nest Baiting	<ul style="list-style-type: none"> <li>Bait being prepared</li> <li>Contact lists updated and equipment checked</li> <li>Helicopter firm contract review</li> <li>Environment Report update</li> </ul>
	Ground Control	<ul style="list-style-type: none"> <li>No action to date</li> </ul>
	Rook Database	<ul style="list-style-type: none"> <li>Reviewed and updated</li> </ul>
Amenity Pest Programme	Respond to enquiries/complaints within agreed timeframes	<ul style="list-style-type: none"> <li>'Frontline' database reviewed daily</li> <li>Individual 'enquiries' actioned</li> <li>Database updated regularly</li> <li>Environment Committee Report</li> </ul>
	Assist landowners with advice on appropriate pest control techniques	<ul style="list-style-type: none"> <li>Ongoing - advice provided as appropriate</li> <li>Loan trap and other equipment supplied</li> </ul>
	Initiate appropriate enforcement action against land occupiers who do not comply with strategy rules.	<ul style="list-style-type: none"> <li>No action required to date</li> </ul>
	Ensure that information on control methods for amenity pests is available on the HRC website.	<ul style="list-style-type: none"> <li>Ongoing (updated as required)</li> </ul>
Animal Pest Monitoring programme	Possum Control Operation	<ul style="list-style-type: none"> <li>Monitoring Plan developed</li> <li>20 x operational areas selected</li> <li>The first 4 monitors planned to commence shortly</li> <li>Environment Committee Report updates</li> </ul>
	RPAMS Monitoring Report	<ul style="list-style-type: none"> <li>Data being collated</li> <li>Report to be prepared following the 2014 aerial rook control work (November 2014)</li> </ul>





## Biosecurity Activity (Plants)

### 20 Zero Density/Containment Species

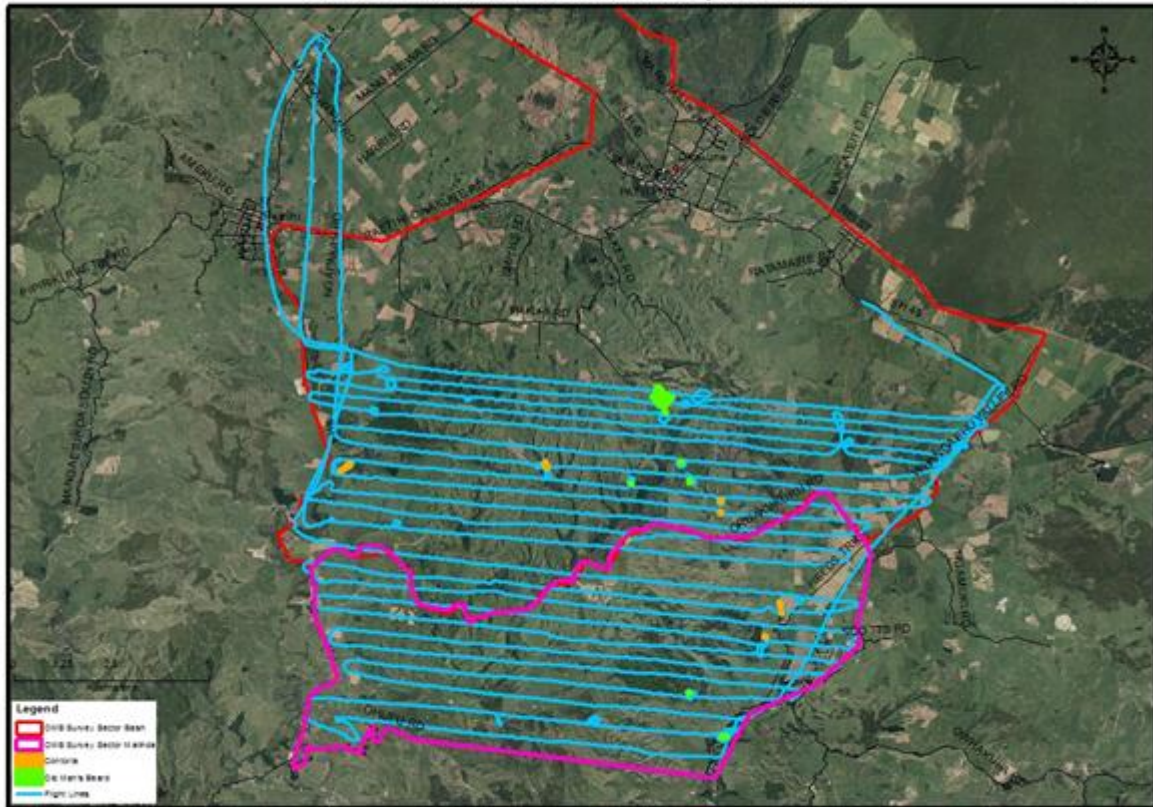
#### 20.1 Annual Plan targets

Measure	Reporting Period				YTD Actual	%
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		
Survey & record status of all known and new Zero Density & Containment species	3118				3118	-
New sites	0				0	-
<b>Total sites</b>	<b>3118</b>				<b>3118</b>	<b>-</b>
<b>Zero Density progress (cumulative sites at zero density)</b>	<b>1766</b>				<b>1766</b>	<b>57%</b>

#### 20.2 Activity Report

- 20.2.1 Species worked on during this period include: banana passionfruit, Chilean rhubarb, climbing spindleberry, Darwin's barberry, ginger, old man's beard and *Pinus contorta*
- 20.2.2 Activity during this period is typically confined to cutting and pasting of stems or felling trees. Sites controlled earlier in the season were inspected and assessed. Staff reported good success from their control programmes across the majority of sites inspected. This pleasing result is reflected in the gradual shift of our known sites from Active and expanding to Clear.
- 20.2.3 Work programmes were developed for the species targeted early in the season, such as Darwins barberry, banana passionfruit and Chilean rhubarb. One aspect of establishing prioritised work programmes is to survey areas for either previous control success or to find new sites in areas previously not worked.
- 20.2.4 An aerial survey for *Pinus contorta* and Old Man's Beard was conducted in the Waimarino. Making the most of the distinctive bearded seedhead of old man's beard and the vivid green of contorta during winter enabled a thorough survey and turned over a number of sites of each. We plan to control the trees by aerial basal barking shortly. Landowners have been notified and we are waiting on weather as trees must be dry and frost free when treated this way.

Old Man's Beard And Contorta Survey June 2014



W:\herman\P\85\03\12\GIS\Output Maps\Contorta and OMB survey June 2014

Map 6: Waimarino survey area showing flight lines, omb and contorta sites discovered, (R.Bashford)

20.2.5 Treescape were engaged to remove three large contorta on the Lewis's property directly adjacent to SH 1 at Turangarere, south of Waiouru. Due to the proximity of the trees to SH 1 Treescape had to close the road when felling a tree.



Photo 10: Contractors using digger to control large contorta trees adjacent to SH1, (M. Matthewson).

Craig Davey  
**ENVIRONMENTAL COORDINATOR – PLANTS**

## 21 Production Species

### 21.1 Annual Plan targets

Measure	Reporting Period				YTD Actual	Target	%
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>			
a. Record and treat all known & newly discovered zero-density species	490				490	-	-
b. New sites	0				0	-	-
<b>Site total</b>	<b>490</b>				<b>490</b>	-	-
<b>Progress toward zero density target</b>	292				292	-	56%
Boundary complaints received & actioned	<b>3</b>				<b>3</b>		

### 21.2 Activity Report

- 21.2.1 Species managed: African feather grass, variegated thistle, Australian sedge, woolly nightshade and nassella tussock.
- 21.2.2 Complaints or enquiries were received about ragwort, gorse and blackberry
- 21.2.3 Checks were made at many of our control sites looking for seedlings and regrowth.
- 21.2.4 We gave control advice and information about our rules to new landowners about variegated thistle in the Kurarau valley. We also met with landowners in Whangamomana concerned about a potential increase of blackberry in a block of 4 farms recently purchased for a redwood forestry operation.
- 21.2.5 Woolly nightshade has been targeted in Horowhenua, Pahiatua and Wanganui. Notices of directions were issued against 2 landowners with a successful outcome in 2 weeks. We are progressing well against woolly nightshade across the region except for a couple of areas of historically heavy infestations near Wanganui.

Craig Davey  
**ENVIRONMENTAL COORDINATOR**

## 22 Biological Control

### 22.1 Annual Plan targets

Measure	Quarterly Period				YTD Actual
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	
Monitor and report on bioagent release sites - Sites inspected	6				6
Monitor and report on bioagent release sites - New releases/transfers	0				0

### 22.2 Activity Report

#### Overview:

- 22.2.1 Planning is underway for the 2014-15 release and monitor programme. We are planning to release agents against broom and Darwin's barberry, continue working with the very successful tutsan and field horsetail community groups, and implement the early stages of a national initiative born from the necessity to answer the 'how successful is biocontrol?' question.
- 22.2.2 Horizons was represented at a special meeting of the National Biocontrol Collective at the end of July to develop an assessment protocol based on new releases of biological agents. It was decided that the lead agency for each agent will drive plant infestation baseline data collection projects. This will involve collecting pre- and post-release data to gauge the correlation of agent release and infestation change. Horizons is the nominated champion for the EPA assessment process for the next old man's beard agent, the field horsetail agents and the tutsan agents. As such, Horizons will champion the nationwide pre-release assessment of host plant infestations and monitor the future situation within our region and coordinate information from other regions to thus create a national picture.
- 22.2.3 Field horsetail agents are in the country, they are mowing down the laboratory supplies of field horsetail, and they are breeding. The RHG is very excited with the latest reports coming from Landcare Research as we wait for the host testing results to hopefully confirm the availability of at least 2 agents to release against field horsetail. One of the agents is a large weevil that not only eats the above ground vegetation but whose larvae feeds on the root system. This agent will be a good candidate for school and community extension around collection or breeding and distribution programmes.
- 22.2.4 The tutsan biocontrol programme is also producing good reports. The first year of the last 3-year programme has got off to a great start with news from Landcare Research about a trip to Georgia (Eastern Europe) revealing a couple of species of beetles keeping natural populations of tutsan in check. Beetles are a desired outcome from this project as tutsan is a genetically complex species placing rusts or diseases which are typically very specific into the too hard basket.

Craig Davey  
**ENVIRONMENTAL COORDINATOR – PLANTS**

## 23 Non-rateable Land & Crown Agencies

### 23.1 Annual Plan targets

Measure	Reporting Period				YTD Actual	Target	%
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>			
MOU/Liaison progress	0				0	12	100%

### 23.2 Activity Report

- 23.2.1 Agencies we liaise with: LINZ, DoC, KiwiRail, NZ Defence Force, NZTA, Wanganui District Council, Ruapehu District Council, Rangitikei District Council, Manawatu District Council, Palmerston North City Council, Tararua District Council, Horowhenua District Council. We also meet annually with neighbouring regional councils to discuss boundary arrangements.
- 23.2.2 We are planning to meet with the above agencies in the near future to discuss regional priorities and the respective work programmes that relate to our RPPMS and other aligned initiatives. Appointments have been established with Ruapehu District Council, Rangitikei District Council, NZ Defence Force, DoC and agents for KiwiRail.
- 23.2.3 The Environmental Coordinator has contacted all TLAs and NZTA to discuss scope and options around changes to the way Horizons, and thus the region, addresses boundary plants and roads as vectors of pests.

Craig Davey

**ENVIRONMENTAL COORDINATOR – PLANTS**

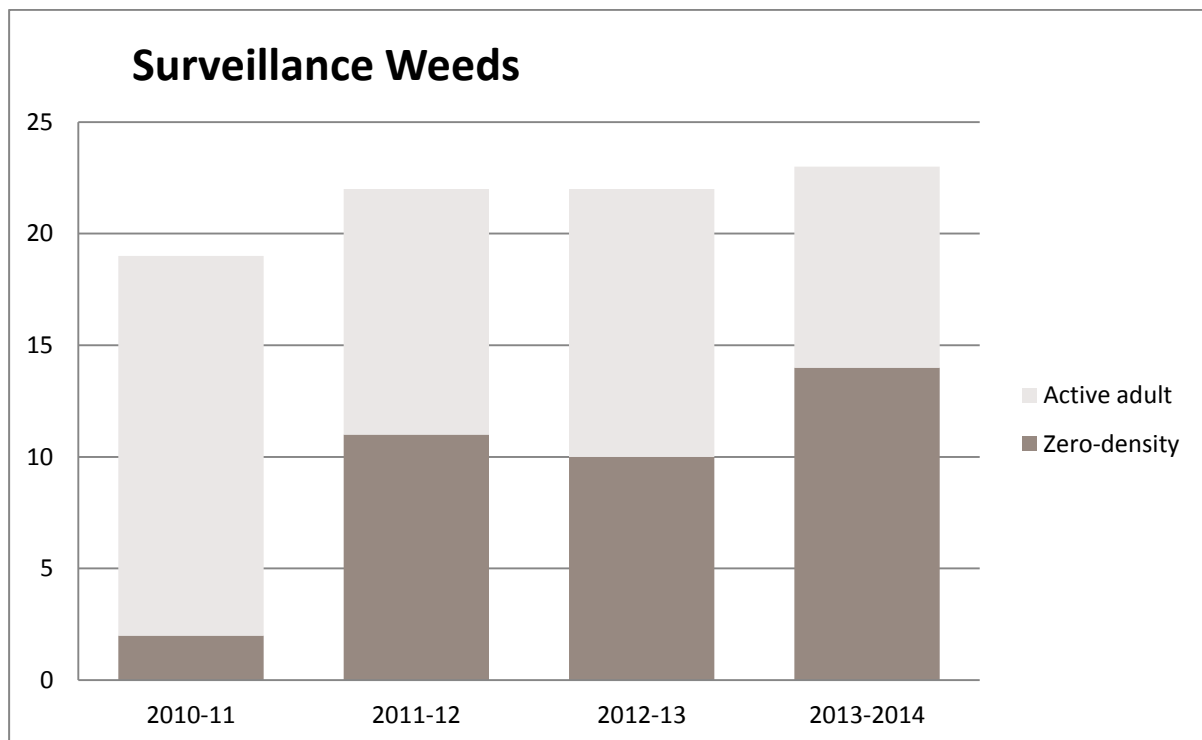
## 24 Surveillance

### 24.1 Annual Plan targets

Measure	Reporting Period				YTD Actual	%
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		
Survey and inspect all nurseries for NPPA listed weeds	0				0	100%
<b>Report all discoveries and action taken</b>	<b>Reported below</b>					
Survey & record status of all known and new Surveillance species sites	23				23	-
New sites	0				0	-
<b>Total sites</b>	<b>23</b>				<b>23</b>	<b>-</b>
<b>Zero Density progress (cumulative sites at zero density)</b>	<b>14</b>				<b>14</b>	<b>62%</b>

### 24.2 Activity Report

The following graph shows the team are now on the winning side of the zero-density equation. With only 24 known sites discovered to date we feel success is attainable.



The graph shows we are now on the winning side of the equation

Craig Davey  
**ENVIRONMENTAL COORDINATOR – PLANTS**

## 25 Awareness & Promotion

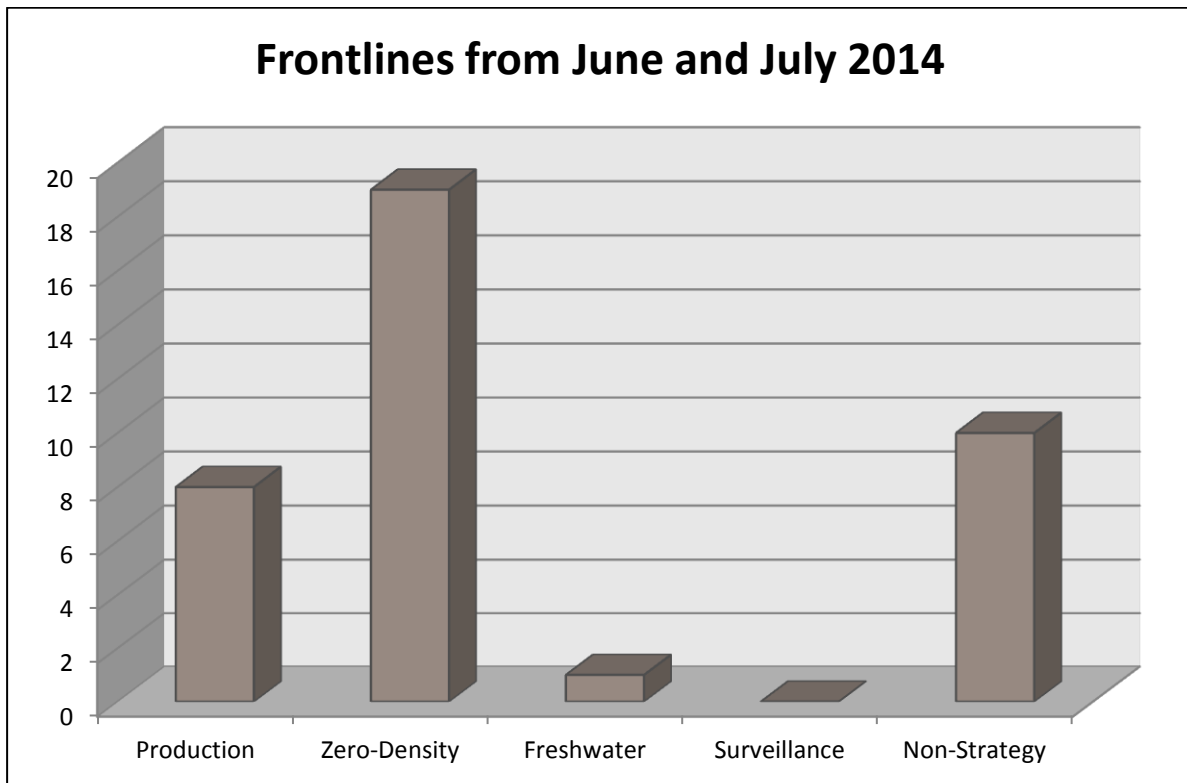
### 25.1 Annual Plan targets

Measure	Reporting Period					YTD Actual
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	
Report on all awareness and promotional activity	Reported below					
Respond to all enquiries (with agreed timeframes)	38					38

### 25.2 Activity Report

Activity	What
Media releases	<ul style="list-style-type: none"> <li>▪ Wanganui Chronicle 3/6/2014 Coastal Care Group, comment on weed work</li> <li>▪ Rangitikei District Monitor 3/7/2014 - Forest &amp; Bird Talk about pest plants</li> <li>▪ Manawatu Standard – Field horsetail NZ survey for existing bioagents</li> <li>▪ Central District Times , Ruapehu Press, Rural News – One stop shop for FH information</li> </ul>
Talks to groups	<ul style="list-style-type: none"> <li>▪ Rangitikei Forest &amp; Bird</li> <li>▪ Hunterville Lions Club - Queens Park Hunterville Restoration Project;</li> <li>▪ HCC 2014 Wanganui Urban Weed Programme (WUWP)</li> <li>▪ NETS2014(WUWP)</li> </ul>
Other	Video produced with Communication department on boundary issues using tutsan as a case study.

### 25.3 Activity Report



Graph 6: Pest plant enquiries - Summary June and July 2014

25.3.1 We received 38 enquires over June and July, the majority regarding Old Man's Beard.

Craig Davey  
**ENVIRONMENTAL COORDINATOR – PLANTS**

## 25.4 Biosecurity Activity (Plants) summary

Project	Key Deliverables	Progress to Date
Nature Central Wilding Conifer Implementation Plan	Work with NC partners and other stakeholders to form: 1. plan 2. activity planning and tracking sheet 3. annual meeting schedule	1. final draft form 2. working document 3. set for August 22 <sup>nd</sup> .
Waimarino TNP Darwins barberry control programme	Organise joint work programme alongside DOC	<ul style="list-style-type: none"> <li>Contractors engaged and programme set to begin</li> </ul>
Yellow Bristle Grass Intervention Investigation	Decide on the best actions Horizons can take to arrest the spread and impact of YBG on the region.	<ul style="list-style-type: none"> <li>Contact with AgResearch around latest results from the roadside weed dispersal project.</li> </ul>
Rangitikei Horsetail Group	Assist group financially and with actions as they are required.	<ul style="list-style-type: none"> <li>Meet during July to assess first year's results and plan for future promotion and advocacy; especially with RDC and MDC roading managers and councillors.</li> </ul>
Tutsan Action Group	Assist group financially and with actions as they are required.	
Agent Assessment project	<ol style="list-style-type: none"> <li>1. Workable structure established for HRC staff to implement</li> <li>2. Tutsan assessment sites established.</li> <li>3. Other plants planned and criteria established</li> </ol>	<ul style="list-style-type: none"> <li>Initial planning underway</li> </ul>
Desert Rd Invasive Legume Control Group	<ol style="list-style-type: none"> <li>1) Relationship between parties maintained.</li> <li>2) MOU completed</li> <li>3) Coordinated action in priority areas is undertaken against the target species</li> </ol>	<ul style="list-style-type: none"> <li>Broom distribution map established</li> <li>Gorse distribution map underway</li> <li>MOU completed</li> </ul>
Wanganui Urban Weed Programme (WUMP)	<ol style="list-style-type: none"> <li>1. Yearly plan developed</li> <li>2. Implementation</li> <li>3. Programme report</li> </ol>	<ul style="list-style-type: none"> <li>Planning underway</li> </ul>
WEEDFINDERS	Develop sustainable process for recognising and supporting the public to provide HRC with plants of interest information	<ul style="list-style-type: none"> <li>Planning underway to use WUMP as a method to launch.</li> </ul>
CCG Advocacy programme	<ol style="list-style-type: none"> <li>1. Establish season plan</li> <li>2. Establish register of 'relationships' to be managed to enable wide community uptake of message.</li> </ol>	<ul style="list-style-type: none"> <li>Funding secured from DoC and MPI</li> </ul>