

Waikato Regional Pest Management Strategy

Annual Report 2009/10



Front cover photo caption: **Kauri dieback cleaning station to help prevent spread of the disease**

Prepared by the:
Biosecurity Heritage Group

for:
Environment Waikato
PO Box 4010
HAMILTON EAST

10 November 2010

ISSN: 1174-7234

Document #: 1757164

Table of Contents

Executive Summary	iii
1 Introduction	1
1.1 Background	1
1.2 RPMS implementation programmes	1
1.3 Giving effect to the Strategy	3
1.4 Report format	4
2 Progress in implementing the Strategy	5
2.1 The Financials	5
2.2 Production Pest Management	7
2.2.1 Direct control	7
2.2.2 Compliance	9
2.3 Public Threat Pest Management	10
2.3.1 Plant pests – compliance	10
2.3.2 Animal pests	12
2.4 Environmental Pest Management	14
2.4.1 Direct control – animal pests	14
2.4.2 Direct control – pest plants	16
2.4.3 Compliance – plant pests	22
2.4.4 Regional priority catchment protection	23
2.4.5 Regional priority possum control	25
2.4.6 Regional priority biodiversity sites	32
2.5 Potential Pest Management	35
2.5.1 Potential plant and animal pests	35
2.5.2 National Partnerships	35
2.6 Crown RPMS obligations	39
2.6.1 The Crown, the Biosecurity Act and regional councils expectations	39
2.6.2 Department of Conservation funded projects – 2009/10	39
3 Case Studies	41
3.1 Case study one: Protecting Hamilton’s urban biodiversity	41
3.2 Case study two: Kauri die-back project	45
Photos	
Photo 1: Mahoenui aerial possum control operation, March 2010	6
Photo 2: Environment Waikato staff and contractors removing Noogoora bur	8
Photo 3: Alligator weed, Ruahorehore Stream	18
Photo 4: Aerial spot spraying of woolly nightshade, Kauaeranga Valley	21
Photo 5: Checking for biocontrol - ragwort plume moths.	22
Photo 6: Possum kill trap, Mahoenui operation, March 2010.	26
Photo 7: More tui are visiting Hamilton	32
Photo 8: Spectacular flowering pohutukawa at Stony Bay, northern Coromandel, attributable to possum control – DOC photo supplied.	34
Photo 9: A released bellbird singing in a persimmon tree.	42
Photo 10: Te Kauri Reserve, a c.200 year old tree	45
Photo 11: Stand of infected kauri, Rodney District (Source: Auckland Council)	46
Photo 12: Symptoms of <i>Phytophthora taxon Agathis</i> (PTA)	47

Executive Summary

This Annual Report records progress made in implementing the Waikato Regional Pest Management Strategy (RPMS). It covers the period from July 1, 2009 to June 30, 2010. The Annual Report is a statutory requirement under section 85(1)(c) of the Biosecurity Act 1993.

Key achievements or project outcomes for the year are summarised below:

- Excellent possum control results were a credit to EW's professional and dedicated contractors – residual trap catch (RTC) percentages were generally well under the targets for all areas treated. Average RTC of two per cent from 13 operations
- Continued excellence in achieving low rat numbers at crucial tui nesting times under the Hamilton Halo project, at six regional sites
- Alligator weed at the Cambridge site has been absent now for three years. Planned subdivision is proceeding, with a comprehensive risk management plan in place
- A large new alligator weed site was found in the Waihi area, somewhere it has never been before. Delays in obtaining a resource consent saw large clumps wash downstream into the Ohinemuri River, draining into the Waihou River, during a flood
- Two Noogoora bur sites were found through good surveillance near Matamata and all plants were destroyed before they could set seed
- Continued reliance on the regulatory powers of the Biosecurity Act saw robust outcomes achieved with regard to dealing with non-compliance with strategy rules
- Targeted promotional/awareness material produced, e.g. Biosecurity on the Farm, Insight possum newsletter and joint newsletters produced with DOC over the treatment of Mt Karioi
- Surveys of known stands of kauri show that the *Phytophthora taxon Agathis* (PTA) disease is not known to be in the Waikato. EW is part of a MAFBNZ co-ordinated team to manage the response, and
- Almost \$60,000 was allocated to small scale community groups, mainly from the Coromandel area, for biodiversity enhancement work.

An operational surplus of \$532,900 resulted at 30 June 2010. This surplus was a result of three main factors – uncompleted work in which the outstanding funding was carried over into the 2010/11 year, savings made from tenders awarded during the year and work that was unable to be done due to redirection of staff resources and other delays in work that were outside the ability of EW to directly influence.

Of this surplus, \$414,400 was transferred to the 2010/11 budget to fund projects such as: possum control at Mokauiti in January 2011, a koi carp cage capture trial at Lake Waikare, implementation of the Significant Natural Areas project and investigation of region-wide consents for herbicide applications to control aquatic pest plants.

The Department of Conservation undertook work to satisfy RPMS Crown exacerbator obligations for controlling climbing spindleberry, old man's beard, woolly nightshade, ginger, gorse, pampas, possums and alligator weed, totalling \$140,000 for the year. Despite excellent relationships with the DOC Conservancy offices there is still an

annual shortfall of approximately \$150,000 to 200,000 for DOC to satisfactorily meet its RPMS obligations. EW will continue to advocate for increased Crown funding for RPMS projects under the MAFBNZ Future of Pest Management Project (FOPM).

Challenges for 2010/2011 include:

- implementing the significant natural areas (biodiversity enhancement) project to complement Priority Pest Control Areas (PPCA) work
- investigating outcome monitoring methods and applying them to existing work to better measure and demonstrate the benefits of the work carried out
- undertaking a project to try and streamline the consent process to make it easier to undertake work wherever pests such as alligator weed, spartina, salt water paspalum and sagittaria are found in the region – a possible region-wide consent, and
- maintaining PPCA landowner support for the current range of pest control methods and raising the awareness of the successes being achieved through these programmes.

The Regional Pest Management Strategy is an important enabling and regulatory document. The challenge for Environment Waikato is to meet increasing demands, making sure that its processes are sound and its decisions are fair and reasonable. This needs the continued co-operation and involvement of all land occupiers in the region.

1 Introduction

1.1 Background

The Biosecurity Act 1993 ('the Act') guides pest management in New Zealand. Its main purposes are to prevent new pests from entering the country through border control surveillance and to facilitate management of pests that are already established in the country. Regional councils are responsible for the latter task. The Act enables Environment Waikato to develop an approach to pest management specific to the region's needs and expectations by developing a Regional Pest Management Strategy.

The Council recently completed a major review of the second RPMS. A new strategy, the third RPMS completed by Environment Waikato, was adopted by the Council in June 2007, to cover the period 1 July 2007 to 30 June 2012. Following appeals and other Council processes it became operative on 11 December 2008 and will remain in force until 10 December 2013.

This Annual Report covers the work programme covering the period July 1, 2009 to June 30, 2010, under the third RPMS.

The responsibility for most pest control work lies with landowners and occupiers. Environment Waikato has responsibilities to ensure land occupiers are aware of and meet their obligations for pest management on their properties. Environment Waikato will also undertake direct pest control where there is clear justification and regional benefit.

Under section 85 of the Biosecurity Act, the management agency for a pest management strategy must prepare an operational plan. The RPMS Operational Plan may be covered as part of the Council's overall Annual Plan. The Plan must be reviewed and reported on annually, no later than five months after the end of each financial year.

This report notes progress made against objectives and performance measures contained in the Council's 2009/10 Waikato Regional Pest Management Strategy Operational Plan and expands on these objectives where appropriate. Financial information is in summary form only.

1.2 RPMS implementation programmes

Each pest in the Strategy has been placed into one of three management categories, based on different criteria (for example, its effects, distribution, density and the control methods available:

- **Eradication pest**

A pest with limited distribution or density. The desirable end goal is eradication, although 'zero density' is more practical to achieve. Environment Waikato will fund and undertake control of these pests, such as rooks and alligator weed, including providing advice and information and monitoring control progress.

- **Containment pest**

A pest that is well established in the region. The goal is to prevent harmful effects on the environment, health and the economy and, where practicable for some pests, reduce the area affected by such programmes as community possum control schemes. Land occupiers are required to control plant pests under this category either across the whole property ('total control', such as woolly nightshade) or along a property boundary ('boundary control', such as gorse).

- **Potential pest**

A pest of concern that Environment Waikato will monitor and record to ensure it doesn't become widely established in the region (such as fringed water lily). Control of these pests may be undertaken at any time if required.

Environment Waikato achieves practical pest management through the following methods.

- **Direct control**

Environment Waikato funds and undertakes the control of 15 high-threat plant pests and six animal pests in a 'pest-led' management approach. Control of relevant pests will also be undertaken in areas of high ecological importance on private land in the region, under a 'site-led' approach.

- **Community initiatives**

Communities with particular pest problems sometimes want to make a combined local effort. Environment Waikato can assist communities with group facilitation. We can also help with initial pest control to get numbers down to manageable levels or provide 'seed' money to help get the group started.

- **Information and advice**

To help landowners control pests, Environment Waikato provides practical advice through factsheets, Environment Waikato's website (www.ew.govt.nz), field or demonstration days and through a direct Freephone link to accredited staff or pest contractors in the region (0800 BIOSECURITY - 0800 246 732).

- **Monitoring/surveillance**

Regular property inspections make sure that strategy rules are being adhered to. Monitoring (where robust techniques are available) is also undertaken before and after most pest control operations to ensure that control targets are achieved. Surveillance identifies new pest problems in the region and in neighbouring regions, and helps ensure that current problems are not getting worse.

- **Enforcement**

Fair and reasonable rules, prescribed in the strategy, require landowners to control pests to a specific standard. Every effort is made to achieve voluntary compliance. However, an enforcement procedure is available and used where appropriate.

- **Biological control**

Environment Waikato supports the national research into biological control agents for pests, such as wild ginger and woolly nightshade. We also release a number of known and approved plant pest biological control agents.

Pest control work is mostly contracted. Biosecurity Pest Plant Contractors in five contract areas have primary responsibility for monitoring, advisory, surveillance and enforcement activities. Coromandel and Hamilton City pest plant functions are carried out by staff based in Whitianga and Hamilton, respectively. Physical control is undertaken by registered chemical applicators.

Up to ten animal pest contractors bid for a number of contracts via a comprehensive tender process.

1.3 Giving effect to the Strategy

Monitoring the performance of pest management agencies

Under section 85 of the Biosecurity Act, Environment Waikato, as the principal management agency, must specify the manner in which it intends to monitor its performance.

This RPMS Annual Report principally documents whether the Council's Biosecurity Group is:

- undertaking the stated work programmes
- achieving stated objectives
- acting on complaints and enquiries
- implementing the RPMS within budget.

The RPMS Annual Report may be subject to the scrutiny of Audit New Zealand. A copy of the Council's Annual Report for 2009/10 is available to the public and should be read to give a wider picture of Environment Waikato's roles, responsibilities and achievements in managing the region's environment. While there is no formal channel for submissions to be made or heard, Environment Waikato welcomes feedback on the content of either report at any time.

Monitoring effects of the Strategy

The RPMS must specify how the effects of the Strategy are to be monitored. The term 'effect' covers two areas:

- the effectiveness of the Strategy in terms of achieving the objectives
- the environmental effects of strategy implementation.

The bulk of this report should satisfy the first point. The second point is more difficult to quantify. The following discussion looks at a number of environmental effects of implementation of the strategy.

Monitoring the effects of pest management activities on the environment is a requirement under the Biosecurity Act and is consistent with the Resource Management Act 1991. While some monitoring has been carried out as part of internal audit checks, a comprehensive investigation or report has not been compiled by Environment Waikato.

The following points highlight both positive and negative environmental effects of pest management activities.

Positive effects

- Pest populations controlled to target levels - it is not practicable to eradicate the majority of plant and animal pests from the region with the current levels of funding and methods available. However, significant gains are being made in specific high priority areas (such as rook control, possum control in the priority parts of the region and alligator weed control across the region).
- Vegetation monitoring - success of operations to control animal pests is relatively easy to determine. The long-term and more difficult assessment is whether native ecosystems are being satisfactorily restored.

- Environmental education - Environment Waikato advocates 'best practice', protocols and management options (such as Growsafe certification of chemical applicators). The information/educational programmes undertaken contribute to positive environmental outcomes by attempting to change attitudes and behaviour. However, the difficulty of how to measure the success of these initiatives remains.

Negative effects

- Environment Waikato uses a range of pesticides, herbicides and biological control agents to effectively manage many pests. There is a wealth of information on the actual and potential effects of these methods and Environment Waikato aims to keep at the forefront of new technology. Using any one method persistently is not advantageous, but the consequences of doing nothing are such that the region cannot afford to not act and let areas be destroyed by pests. The key is to minimise the adverse effects of the various methods on the environment and ensure communication is open and accurate.
- Environment Waikato is governed by very tight legislation and industry operating procedures for the use of controlled substances such as cyanide, DRC 1080 and DRC 1339 under the Hazardous Substances and New Organisms Act (HASNO). Extensive consultation and public notification is required and Environment Waikato is committed to continually improving consultation with landowners. Residue in the environment and deaths of non-target species are important issues, which the scientific community are continually investigating.
- The issue of spray drift is addressed in the Waikato Regional Plan. Contractors employ best practices and adhere to regional plan requirements when controlling pest plants on Environment Waikato's behalf.

Overall, the Council's view is that the positive benefits of the Strategy outweigh the negative effects.

1.4 Report format

This Annual Report should be read in conjunction with the Waikato Regional Pest Management Strategy, Operative 2008-2013 and the 2009/10 RPMS Operational Plan.

During the development of the 2006-2016 LTCCP the opportunity was taken to move to a project accounting format, based on expected community outcomes to manage regional biosecurity. Rather than having separate plant and animal pest programmes Council decided to focus on the anticipated outcomes of pest control, in relation to: production, public threat/health and the environment. Potential pest problems are a forth category of focus.

The main part of this report (section two) deals with pest management projects under these four outcome areas. Under each RPMS activity area, performance measures have been listed in the left hand columns. The comments in the right hand column note the achievements made for each performance measure. If the performance measure has not been met the reasons are noted. A statement from the Department of Conservation regarding their RPMS-related pest control obligations and achievements for 2009/10 is provided at the end of section two.

Section three focuses on two case studies. The first study looks at three biodiversity enhancement projects underway in Hamilton City – Hamilton Halo, bellbird releases and more recently Project Echo. The second case study looks at a potentially serious disease affecting the iconic kauri tree and what Environment Waikato is collaboratively doing to stop its spread.

2 Progress in implementing the Strategy

2.1 The Financials

The RPMS expenditure budget for 2009/10 was \$5,869,132. The actual expenditure for the year was \$5,365,578 a surplus of \$503,554. However, an overall operational surplus of \$532,900 was achieved when taking into account revenue received. The table below summarises the end of year financial positions under the four programme headings.

Expenditure	Budget (\$)	Actual (\$)	Difference (\$)	Net Surplus (Deficit)
Production pests				
Direct Control	63,511	108,452	(44,941)	(45,302)
Compliance	76,928	77,698	(771)	(1,334)
Health threats pests				
Animals	30,591	14,541	16,050	16,050
Plants	199,480	159,401	40,079	45,772
Environmental pests				
Direct control animals	297,967	128,273	139,695	139,695
Direct control plants	1,027,656	987,681	39,974	51,769
Compliance plants B1601	323,227	468,383	(145,156)	(159,919)
Priority catchments	835,173	659,174	175,999	175,999
Priority possums B1605	1,927,539	1,915,492	12,408	22,638
Priority biodiversity V1602	737,944	500,853	237,091	240,710
Potential Pests				
Potential pests	135,042	42,861	92,181	92,181
National Partnerships	244,074	302,769	(58,695)	(45,366)
Totals	5,869,132	5,365,578	503,554	532,893

An operational surplus of \$532,900 resulted at 30 June 2010. This surplus was a result of three main factors. Three operations 'straddled' two financial years - they started in 2009/10 but will not be completed until 2010/11 (e.g. Mokauiti aerial control, Karioi South and Te Akau South operations). Total cost of these projects is \$134,000.

Savings of almost \$66,000 were achieved through the contract/tender process, essentially through the Hamilton Halo Project.

Ten operations or activities were not carried out, totalling approximately \$330,000. Some staff resources were redirected to help the Maungatautari Ecological Island Trust (MEIT) project with residual rodent problems. As a result the Southern Coromandel goat control project was reduced, the geothermal pest plant removal programme was scaled back and wallaby control in the Rotorua district was deferred.

Budgeted possum control at Waikawau (between Manaia and Te Puru) was not carried out as possum densities were still low from the previous operation. Funding allocated to rabbit control in the Taupo district was not required as DOC and Taupo District Council funded all the required work. Money available for pest fish research was also put on hold pending the outcomes of collaborative research proposed with Australian scientists to trial new koi carp cage trap technology in north Waikato.

As a result of this surplus, the following requests were made to Council in August 2010 to amend 2010/11 budgets to include:

- \$134,000 to meet expenditure commitments for the three projects underway (as outlined above)
- \$123,400 for the trial installation of a prototype koi carp trap at the Lake Waikare outlet
- \$57,000 to investigate a region-wide resource consent for pest plants to mitigate the time and effort currently required for specific individual consents, and
- \$100,000 to fund biodiversity enhancement projects within the Significant Natural Areas programme.

These amendments left a RPMS implementation reserve balance of \$118,500 for the year. The total reserve money for the Biosecurity-Heritage Group, including a surplus from the previous year, as at 30 June 2010 was \$454,000.

Further discussion will be required as part of the development of the 2011/12 Annual Plan on how the remaining reserve funds are applied.



Photo 1: Mahoenui aerial possum control operation, March 2010

2.2 Production Pest Management

2.2.1 Direct control

Some pests in the region are very difficult to identify and/or successfully control. Environment Waikato will fund and manage control of seven pests which threaten regional agricultural production – (horse nettle, noogoora burr, nassella tussock/fine stemmed needle grass, variegated thistle, alligator weed (in production situations) and rooks. They are low incidence, high threat pests and the eventual goal is to achieve zero density in the region.

Budget **\$63,511**
Actual expenditure **\$108,452**

Performance Measures	Achievements
<p>Control of nassella species</p> <p>Reduction in the number of nassella tussock, fine stemmed needle grass plants.</p>	<p>Achieved. Direct control ('grubbing') carried out on nassella tussock at Waitete Bay and Te Puru with the number of plants found recorded. No plants found at Te Puru since 2007. Plants controlled at Waitete Bay down to 12 from 103 in 2007.</p>
<p>Control of alligator weed</p> <p>Reduction in the ground cover area of known alligator weed infestations on productive land, through annual density monitoring of sites at Cambridge and Orongo.</p>	<p>Achieved. Direct control of alligator weed on productive land was carried out as part of an eradication programme for this priority pest plant. Control methods were tailored to the site and a range of strategies used:</p> <ul style="list-style-type: none"> • Cambridge site – no plants found in the monitoring plots for three years now. A total of four small plants dug out on two separate occasions for the entire year. • Orongo site – herbicide spraying carried out five times over the growing season. Monitoring plots assessed showed only one percent cover in one of the 6 plots. • Ohaupo site – alligator weed was discovered in this maize block in 2007. Intensive control has been carried out every year since, using herbicide spraying and physical removal. Infestation is down to low levels and eradication is feasible if pressure is maintained. • Te Rore site – alligator weed is present on two adjacent dairy farms. The infestation is down to low levels on one farm due to landowner

<p>Control of other high-threat species</p> <p>Eradication programme begun for newly discovered Noogoora bur infestation</p>	<p>diligence. However, the other farm remains problematic with alligator weed being spread through the property due to poor weed hygiene practices. A Restricted Place notice has been issued for this property, clearly outlining which activities are restricted to prevent further spread of the weed.</p> <p>Achieved. Noogoora bur was reported by an occupier of a Te Poi 'run-off'. Noogoora bur was confirmed and a management plan for eradication was put in place, including a Restricted Place notice on the property. All plants in lesser infested paddocks were hand removed and then burned. Main infestation was 'silorated', put in a pile and then burned. Harvesting machinery was cleaned and inspected on site.</p> <p>A second new infestation was discovered in May at Matamata in a maize block. A small infestation and all plants destroyed by hand.</p>  <p>Photo 2: Environment Waikato staff and contractors removing Noogoora bur</p>
<p>Region-wide rook control</p> <p>Feedback compiled, new information followed up, locations mapped.</p> <p>Desktop analysis of locations followed up by field surveillance to confirm presence of rookeries. Recommend rookeries for control by 30 August 2009.</p> <p>Control undertaken to best industry standard, completed prior to chicks fledging, and with no incidents sustained by 30 November 2009.</p>	<p>Achieved. Ground and aerial surveillance of new and historical rookeries at sites ranging from Kaiaua to Kinloch was carried out between 9 August and 15 October 2009.</p> <p>Control of rookeries carried out by directly poisoning nests using an operator safely suspended beneath a helicopter. Rookeries typically need two or three separate control treatments to address the staggered breeding behaviour of the rooks. Control was carried out at five sites around Matamata, Mangakino, and Kinloch on 6 November and 24 November 2009.</p>

2.2.2 Compliance

This project will help ensure that rabbits, gorse, broom, ragwort, nodding/plumeless thistle, Australian sedge, Darwin's barberry and purple nutsedge do not adversely effect regional agricultural production. The project is based on a three-step enforcement process provided for in the RPMS. These eight widespread pests require control rules to be developed and an independent organisation (such as Environment Waikato) to intervene to solve neighbouring pest problems effectively. Compliance is achieved through the above three step process and is actioned on a complaints basis.

Budget **\$76,928**

Actual expenditure **\$77,698**

Performance Measures	Achievements
<p>Undertake property inspections to ensure RPMS standards are met</p> <p>Recent (last years) 'problem' properties re-visited with programmes issued where relevant and outcomes recorded in the Biosecurity Information System (BIS).</p> <p>Other potentially infested properties inspected as resources allow.</p>	<p>Achieved. Regionally based contractors and staff in Hamilton and Coromandel targeted historical problem areas and properties and responded to valid complaints received.</p> <p>All inspections were recorded in the Biosecurity Information System database.</p>
<p>Respond to public enquiries and complaints</p> <p>All complaints actioned and followed up with full recording of the compliance process in the BIS.</p>	<p>Achieved. A number of complaints were received during the year. These were responded to. Enquiries were entered into the Biosecurity Inquiry Database (BIQ) and signed off when completed.</p>
<p>Initiate enforcement action for non-compliance with rules</p> <p>The three step compliance and enforcement process outlined in section 11.3.1 of the Regional Pest Management Strategy will be followed.</p> <p>All steps of the process fully recorded.</p>	<p>Achieved – (pest plants only). Two Notices of Intention to Act on Default (under section 128 of the Biosecurity Act) were issued for non compliance. One lien was applied, to the property title, for non-payment. However, due to payment in full three months later, the lien was then released. The other debt was paid in full before the due date, therefore not requiring a lien.</p>
<p>Promotion and public awareness of production pests, particularly in Glen Massey, Te Mata and Ruapuke areas</p> <p>Provide information and advice by responding to public enquiries.</p> <p>Promotional campaigns may be carried out from time to time.</p>	<p>Achieved. Historical problem areas and properties were targeted and valid complaints were responded to. All inspections were recorded in the Biosecurity Information System database.</p> <p>A campaign targeting nodding thistle control was carried out in the Waingaro, Glen Massey area – see copy of flier next page.</p>



New resources for production threat plant pests were developed - including a 'Border Control – Biosecurity on the farm' fact sheet.

Border control!

Biosecurity on the farm

A farmer's guide to preventing weed invasions

Weed infestations can lead to financial loss for farmers and horticultural producers, and seriously harm our natural environment. This guide provides strategies for preventing new weed infestations via human activities.

Many pest plants and weeds are spread by natural means such as birds, wind and water, but farming practices and other human activities can also spread weeds. For example, stock feed originating from overseas or even just from outside the Waikato region increases our biosecurity risks. It might bring in seeds from plants previously not known to be in the Waikato or New Zealand and spread weeds. In 2009, several new weeds were linked to imported coco peat, used for potting mix.

In the Waikato region, 60 plants are legally classified as 'pests' and are subject to control or restrictions under the Waikato Regional Pest Management Strategy 2008-2013 (RPMS). The RPMS requires landowners or occupiers to control pest plants to prescribed standards, using suitable control methods. Besides these classified pest plants, many other plants with 'weedy' characteristics have naturalised, and these could adversely affect the environment and the region's economy.

Controlling widespread weed infestations can be costly. Prevention of new weed infestations is often the most economic strategy.

Alligator weed infestation on a Waikato farm.

Tips for preventing weed invasions on your farm

- 1. Be weed aware**
 - For a list of significant pest plants in your area, call Environment Waikato on 0800 BIOSEC (2487932).
 - Get pest plant fact sheets from Environment Waikato on 0800 BIOSEC (2487932) or visit www.ew.govt.nz/plantpests.
 - Tell your staff about weeds and pest plants in your area.
- 2. Clean machinery and equipment**
 - Remove soil, seeds and vegetation from all machinery and equipment:
 - entering/leaving your property prior to entry/departure. This includes diggers, harvesting equipment, ploughs and undersows
 - that has been used in weed infested areas on the property before moving it into weed free areas.
 - Ask the contractor if they have a weed management plan and use reliable contractors

www.ew.govt.nz

2.3 Public Threat Pest Management

2.3.1 Plant pests – compliance

Privet pollen and scent may contribute to breathing disorders such as asthma. The berries are poisonous to humans and while privet is a significant environmental pest, its inclusion in the RPMS is primarily for health protection purposes.

Environment Waikato intervenes to help solve privet issues in neighbouring situations and will work with rural communities and townships to achieve 'total control' of privet where support is demonstrated. A three step enforcement process is used to ensure compliance with strategy rules. Complaints are generated from rural and urban areas.

Budget	\$199,480
Actual expenditure	\$159,401

Performance Measures	Achievements
<p>Facilitate and support privet control in Te Aroha, Kawhia, Kihikihi and Tuakau</p> <p>Carry out surveillance of community initiative areas where landownership has considerably changed.</p> <p>Liaise with affected parties and community boards over management approaches.</p> <p>Follow up with control programmes, where relevant.</p>	<p>Achieved. No new initiatives were set up during the year, but existing initiatives were maintained.</p> <p>Surveys were carried out in: Pirongia, Paeroa, Te Kuiti, Kawhia, and Waihi. Meetings with the Kawhia Community Board were held and a programme put in place with the district council to provide free disposal of privet for a month over summer.</p> <p>A meeting was held with the Tuakau Community Board, property inspections carried out and pamphlets delivered to the area. Property programmes were issued and enforcement carried out on a few non compliant properties. A meeting was also held with the Hauraki District Council to review the status of tree privet in Waihi – tree privet can now be targeted for control in Waihi.</p> <p>Some discretionary direct control was carried out in several of the initiative areas.</p>
<p>Initiate enforcement action for non-compliance with rules</p> <p>The three step compliance and enforcement process outlined in section 11.3.1 of the Regional Pest Management Strategy will be followed.</p> <p>All steps of the process fully recorded.</p>	<p>Achieved. Pest control programmes were issued for community initiative areas and in response to valid health related complaints as per RPMS provisions.</p> <p>Contractors noted more enquiries and complaints from the general public in relation to privet than for any other pest plant.</p> <p>Five Notices of Intention to Act on Default were issued for non compliance. Three liens were applied to property titles for non-payment. The other two Notices were paid in full, therefore not requiring a lien.</p>
<p>Promote public awareness of the effects of privet</p> <p>Provide information and advice through responding to public enquiries.</p>	<p>Achieved. Privet control flyers were distributed in Kawhia and information placed at the local library – see example next page. A 'pull-up' poster was developed and was displayed for a period of time at district council offices in Te Kuiti and Paeroa.</p>

Promotional campaigns (including media releases and flyers) carried out where relevant.

It's time to control Privet in Kawhia

Your community decided it wanted to be a 'total control' area for privet, so landowners in your area must remove privet (except for hedges) from their properties. Privet hedges must be trimmed to prevent flowering.

Why privet is a problem
Privet flowers may aggravate asthma and hayfever. It rapidly invades bush margins and waste areas, and can displace native forest trees.

Identification
Chinese privet is a small tree or shrub and flowers from September to December. Tree privet can grow to a large tree and flowers from January to March. The small white or creamy flowers of both species are strongly scented.

What to do
Small plants – pull out or dig up, and remove the entire root system so they don't regrow.
Larger plants – apply herbicide to larger plants by: cutting down and treating the stump with herbicide to stop regrowth; or drilling holes at a downward angle around the trunk and filling with herbicide.

Suitable herbicides include: glyphosate (such as Roundup), metsulfuron (such as Escort) or herbicide gel (such as Vigilant).

If you feel you are unable to control the privet on your property Environment Waikato may be able to assist. Contact your pest plant contractor on 0800 BIOSEC (0800 246 732) to find out more. They can also help with further information and advice.

PEST privet

- Flowers believed to aggravate asthma and hayfever
- Leaves and berries poisonous to humans and animals
- Rapidly invades bush margins, waste areas and roadsides, hedgerows and urban sections

landowners' responsibilities

- In 'community initiative areas' – Kawhia, Tuakau, Whatawhata, Otorohanga, Te Kuiti, Orini, Mangatarata, Te Aroha, Waihi and Paeroa – landowners are responsible for controlling any privet on their property.
- In other areas, landowners may be required to control privet if there is a health-related complaint from a neighbour, verified by a doctor.

More information
0800 BIOSEC (246732)
www.ew.govt.nz/privet

WEED BUSTERS
Environment Waikato
REGIONAL COUNCILS

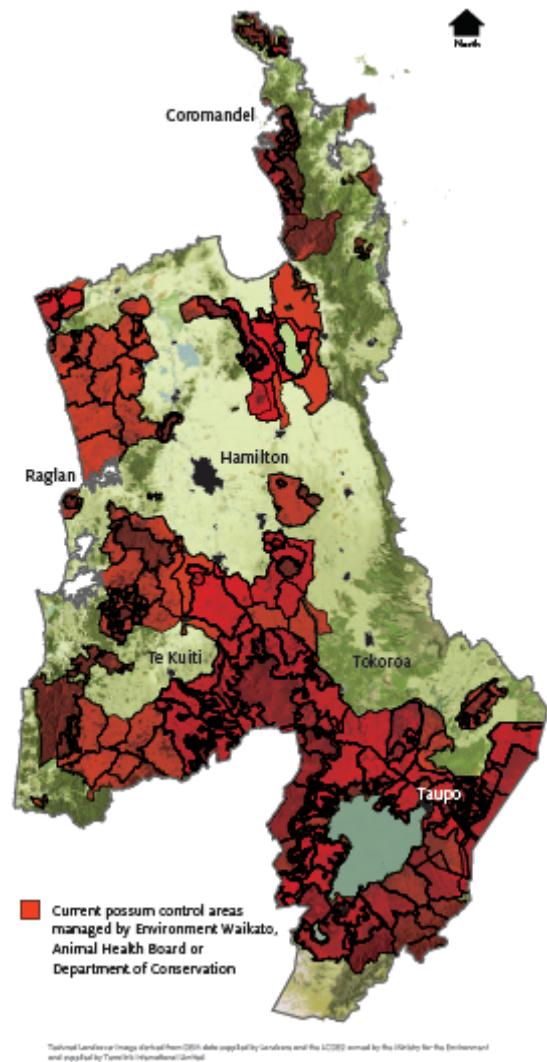
2.3.2 Animal pests

This project aims to reduce adverse effects of wasps and magpies on land occupiers at certain times of the year (magpies in spring and wasps/Argentine ants in summer). Environment Waikato will intervene to resolve complaints that may be received, through discretionary direct control or via the enforcement process, but mostly to provide effective pest control advice and information.

Control of Argentine ants will be restricted to key ecological sites where these insects pose a risk to biodiversity values.

Budget **\$30,591**
Actual expenditure **\$14,541**

Performance Measures	Achievements
<p>Respond to public enquiries and complaints</p> <p>All phone enquiries/complaints are responded to within 48 hours during the working week.</p> <p>Written or emailed enquiries/complaints are directed to an appropriate staff member and responded to within 48 hours during the working week.</p> <p>Responses may be a mixture of verbal advice, mail out of pest fact sheet, or direction to the EW Website.</p> <p>All enquiries are entered into the Biosecurity Inquiry Database (BIQ) and signed off when complete.</p>	<p>Achieved.</p> <p>A number of complaints were received mostly about magpies attacking children and cyclists in the Taupo, Cambridge and Hamilton areas.</p> <p>Due to a reduced operating budget no form of control was able to be funded. Complaints were addressed by providing verbal advice or sending fact sheets in the mail.</p> <p>Staff noted that over the summer of 2009/10 wasp complaints were higher than previous years. All complainants were provided advice on how to treat nests themselves or where to find a contractor to undertake the work.</p> <p>Enquiries were entered into the Biosecurity Inquiry Database (BIQ) and signed off when completed.</p>
<p>Maintain Environment Waikato web based information</p> <p>Animal pest information available on the EW website is reviewed annually (by 30 June 2010). Information updated if required following this review (by 30 July 2010).</p>	<p>Achieved.</p> <p>Pest control factsheets and control information is available and kept up to date on the Council website.</p> <p>In an effort to more easily provide information to the public making enquiries regarding carrying out possum trapping or night shooting for fur harvest or recreation, staff created the "Recreational and commercial possum hunting map".</p> <p>The map is located on the EW website under the following link.</p> <p>http://www.ew.govt.nz/Environmental-information/Plant-and-animal-pests/Animal-pests/Possums/Recreational-and-commercial-possum-trapping-map/</p> <p>Refer to example map next page.</p>



Recreational and commercial possum hunting map as seen on www.ew.govt.nz

Staff will update the map annually. The map details all areas known to EW where possum control is carried out by EW, DOC, or the Animal Health Board.

When the public make an enquiry regarded this activity they are directed to the map. They can then determine an area worth approaching to carry out their activity, i.e. where control has not been carried out by any of the agencies.

2.4 Environmental Pest Management

2.4.1 Direct control – animal pests

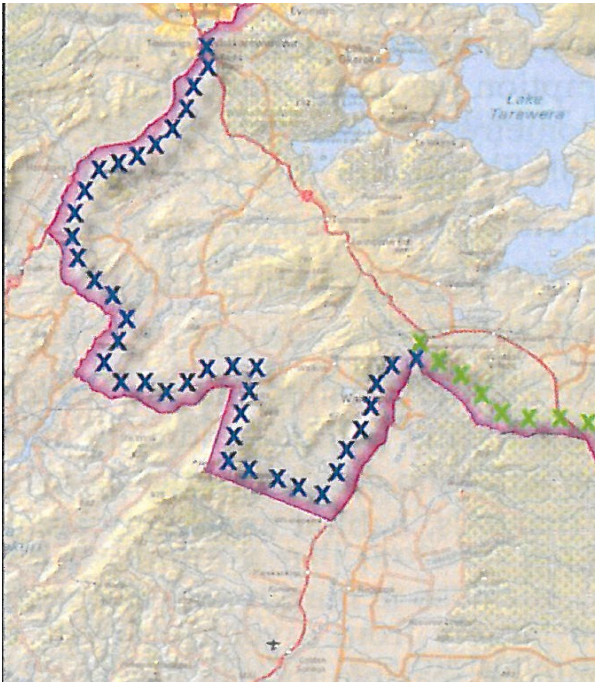
Some pests in the region are difficult to control or require regional co-ordination to manage them. This project identifies two main pests (dama wallaby and rabbits) for which direct action by Environment Waikato applies in certain circumstances. EW has

also been involved in funding pest fish research and during this year embarked on a trial project aimed at trapping live koi carp in cages.

Dama wallaby exist in the Rotorua District part of the region, in relatively low numbers. Much of the control effort relies on Environment Bay of Plenty (EBOP) and Department of Conservation (Bay of Plenty Conservancy) aligning control plans and funding, in a joint effort to achieve zero density across the regions.

Environment Waikato provides funding for a facilitator to work with community groups on the Coromandel Peninsula to undertake pest control for biodiversity enhancement. A part of the contract payment is through this project but the results of the work are reported in priority biodiversity sites, refer to section 2.4.6.

Budget **\$267,967**
Actual expenditure **\$128,273**

Performance Measures	Achievements
<p>Dama wallaby control programme in conjunction with Bay of Plenty Regional Council and DOC</p> <p>Attend quarterly operational meetings of the dama wallaby steering group and contribute support to the goal of eradication of this pest.</p> <p>Support the development and implementation of a wallaby specific toxin.</p> <p>Action plan developed for a wallaby control operation in 2009/10 or 2010/11 in the EW portion of Rotorua District.</p> <p>Investigate and record any reported sightings in the Waikato region.</p>	<p>Achieved. Meetings between the three agencies were attended as appropriate. Connovation Ltd designed, tested and registered a sodium cyanide product for the use on dama and Bennett's wallaby.</p> <p>A wallaby containment strategy was adopted to address the spread of dama wallaby in the Bay of Plenty and Waikato regions. The map below shows the boundary monitoring proposed for year two – 2010/11.</p>  <p>Three sightings were investigated. One was historical from Ngaruawahia - nothing found. One was at Te Pahu - road kill found and suspected it came from elsewhere. One was from Galaxy Road South.</p>

<p>Rabbit management in high rabbit prone areas</p> <p>Provide technical advice and support to district/city councils and other landowners in managing rabbit prone sites annually.</p> <p>Site assessments of rabbit prone sites carried out (using the modified McLean Scale) on receiving complaints from affected neighbouring landowners and followed up by using the three step enforcement process outlined in the RPMS, if properties exceed level 4 of the scale.</p>	<p>Achieved. Historical complaints usually received from rabbit prone sites at various Taupo lakeshore reserves were significantly reduced in 2009/10. This is attributed to joint work carried out in 2008/09 involving the Department of Conservation, Taupo District Council, and Environment Waikato.</p> <p>For the rest of the region, holiday settlements on the Coromandel Peninsula and areas adjacent to the Waikato river continued to generate a small number of complaints during the year.</p> <p>Each complaint was treated on a case by case basis and involved providing control advice or staff carrying out a site assessment followed by a pest control programme to the exacerbating party.</p> <p>Only one pest control programme for rabbit control was issued in 2009/10. This resulted in a satisfactory outcome for all involved.</p>
---	---

2.4.2 Direct control – pest plants

Some pests in the region are very difficult to identify and/or successfully control. The RPMS identifies 15 pests or classes of pests (African feather grass, alligator weed, cathedral bells, Italian buckthorn, climbing spindleberry, Japanese and giant knotweed, old man's beard, Manchurian wild rice, mile-a-minute, nassella tussock and fine stemmed needle grass, Noogoora bur, Senegal tea, spartina, variegated thistle and white bryony) which EW will fund and manage control of, which threaten the regional environment.

These pests are generally low incidence, high threat plants and ongoing control has occurred for most of them since 2002, or earlier, whenever they are identified. The eventual RPMS goal is to achieve zero density of these pests in the region.

Budget **\$1,027,656**
Actual expenditure **\$987,681**

Performance Measures	Achievements
<p>Undertake direct control of alligator weed</p> <p>At least annual control carried out at all known infestations, with reductions in ground cover of alligator weed.</p> <p>Records of direct control compiled in BIS via monthly reports by Pest Plant Contractors and Biosecurity staff.</p>	<p>Achieved. Alligator weed is scattered over approximately 200 hectares in the Waikato River delta area. A comprehensive, annual, herbicide spraying programme is carried out there, on scattered infestations along the Waikato River downstream of Ohinewai and Lake Whangape. A resource consent is held which allows the herbicide metsulfuron to be used and several applications may be applied over the growing season either aerially, by airboat</p>

<p>Recording of alligator weed at monitoring sites in the Waikato River delta.</p> <p>Recording of infestations using historical photo reference points.</p>	<p>or by gun and hose. Alligator weed is now present in the Te Onetea Stream and the Whangamarino River. This is a major concern as there is the very high potential for it to spread into the Whangamarino wetland – an internationally recognised wetland. Intensive control and surveillance is being carried out in these areas by DOC and EW.</p> <p>Monitoring plots are set up in the delta area and show alligator weed is reduced to very low levels where intensive control has been carried out.</p> <p>Surveillance was carried out along the Waipa River and although no alligator weed was found here it was found at Huntly which is further upstream in the Waikato River than it has been found before. Surveillance was carried out on land adjacent to the river and several areas requiring ground based control were identified.</p> <p>A new contractor was employed to carry out intensive ground based control around Lake Whangape and contractors carrying out weed control for flood protection works in the Waiuku area were employed to include alligator weed control in their works.</p> <p>A very significant new infestation was discovered in an area previously free of alligator weed. The presence of alligator weed in the Ruahorehore Stream, Waihi was reported by Newmont Gold staff. Surveillance by EW staff and BPPCs confirmed a well established infestation scattered along most of the stream and a large infestation in an effluent pond and in paddocks on an adjacent farm land. The farm is the source of the infestation and the alligator weed is likely to have been spread there through contaminated equipment.</p>
--	--



Photo 3: Alligator weed, Ruahorehore Stream

Significant delays in obtaining a resource consent to spray this alligator weed occurred due to objections from neighbouring orchard owners with a downstream water take consent. As a result the consent conditions severely limit when spraying can be carried out.


The delay in consent approval meant alligator weed in the stream had not been controlled when a flood event occurred and the weed was subsequently spread down the stream and into the Ohinemuri River. There is now a high risk the alligator weed has been spread into the Waihou River. Intensive surveillance of these areas will be carried out during the 2010/11 summer.


There are numerous infested residential properties, mostly in Hamilton City but a few in other areas such as Matangi, Te Pahu, Morrinsville and Te Aroha, with alligator weed present in lawns and/or gardens. Direct control is carried out by a spray contractor and work is monitored by EW staff. Most sites are down to very low levels but pressure needs to be maintained if gains are to continue.

Hamilton had one serious new infestation found in Woodridge subdivision (north Hamilton). This resulted in a restricted place notice (Biosecurity Act s.130) put on the site. A resource consent was obtained to trial the herbicide imazapyr. This herbicide was trialled with very good results at two restricted places sites - Perry Aggregates 'clean fill' site (River Rd) and Perry Aggregates sand quarry. Imazapyr appears to be very effective for the control of alligator weed and reduces the number of treatments required.

<p>Assist DoC in the direct control of spartina</p> <p>EW share of cost is paid.</p> <p>Report on control programme received from DOC.</p> <p>Surveillance results recorded in GIS mapping database.</p> <p>Requirements for resource consents confirmed with all parties (DOC, Biosecurity and RUG).</p>	<p>Achieved. Spartina direct control carried out by the Department of Conservation, with only small sites remaining in west coast harbours (Raglan, Aotea and Kawhia). Coromandel harbours infestations have been reduced to knapsack, follow-up sprays.</p> <p>Whangapoua, Waikawau and Tairua, sites require improved surveillance and on-going treatment will be needed for some time.</p> <p>No control was undertaken in the Firth of Thames but initial scoping was done by DOC and EW staff and found significant sites upstream of the coastal marine area which will require control.</p>
<p>Undertake direct control of other high threat environmental pest plants</p> <p>Control carried out on known infestations of eradication pest plants, via annual business plans written for each management area.</p> <p>Direct control activities recorded in BIS via monthly contractor and Biosecurity staff reports.</p> <p>Direct control projects monitored and results (effects on infestations) recorded.</p>	<p>Achieved.</p> <p><u>Old man's beard.</u> Present in southern parts of the region, mainly in the King Country area but some sites also present in Taupo district and a few isolated plants in other areas (Hamilton, Cambridge, Miranda). Mainly found in residential gardens or as garden escapes. Most infestations are reducing in size and controlled annually or biennially. No new sites found this year. Historic sites are checked annually or biennially.</p> <p><u>Climbing spindleberry.</u> Infestations in Taupo, King Country, Waipa and Matamata-Piako areas. Aerial surveillance carried out in the Taupo area. Most infestations were treated with herbicide as part of the ongoing control programme. Infestation sizes are reducing, however climbing spindleberry remains at most sites and seedling plants continue. Ongoing work is required.</p> <p><u>Contorta pine.</u> Present in the central plateau area, contorta pine is a serious threat to alpine habitats. A joint EW / DOC helicopter 'sling load' operation was carried out near Rotoaira to fell trees in heavy scrub. Further controls were implemented following GPS locations recorded during surveillance flights. In the area south of Taupo its at low levels but new trees continue to be found.</p> <p><u>Senegal tea, Japanese knotweed and evergreen buckthorn.</u> There are small infestations of Senegal tea in the region.</p>

	<p>Two new sites, one in Coromandel which has reappeared and one in an ornamental pond at Gordonton add to last years sites at Te Kowhai and near Waiuku. All infestations are at low levels and have been sprayed.</p> <p>All known Japanese knotweed infestations were retreated. Main infestations are at Taupiri and in Hamilton but other plants were found in Huntly, Taupo and Mangakino. A particularly difficult plant to eradicate and one of the UK's worst weeds. The herbicide imazapyr appears to be most effective. One site of the related giant knotweed is present, at Waikino, and was treated with imazapyr.</p> <p>Progressive control of evergreen buckthorn on residential properties in Hamilton continued. Seedlings regenerating from small, contained infestations at Kuaotunu and Turangi were also controlled.</p> <p><u>Other eradication pest plants.</u> A resource consent was obtained to use herbicide to control <i>Sagittaria platyphlla</i> in a pond at Te Pahu. Control was carried out and the infestation reduced successfully. A new infestation of <i>S. montevidensis</i> was found in the Waihou River and the lower Ohinemuri River. Further surveillance is needed to determine the extent of infestation and a resource consent will be required for herbicide control to be carried out.</p> <p>Cathedral bells was controlled at Thames and in Hamilton. One infestation near Kawhia is known on DOC land but has not yet been controlled.</p> <p>Small infestations of Africa feather grass near Taupo and at Te Kauwhata were controlled.</p>
<p>Discretionary direct control of containment plant pests</p> <p>Control carried out at identified sites – woolly nightshade possibly in Paeroa to Waihi areas.</p> <p>Direct control and surveillance activities recorded in BIS via monthly contractor and Biosecurity staff reports.</p>	<p>Achieved.</p> <p>Discretionary direct control was carried out on a number of containment pests. Small scale direct control is carried out by the Biosecurity Pest Plant Contractors at their discretion, usually targeting small outlier populations of moth plant, woolly nightshade or pampas, or assisting landowners who may have considerable difficulty controlling the pest on their land.</p>

<p>Direct control work monitored and results (effect on infestation) recorded.</p>  <p>Photo 4: Aerial spot-spraying of woolly nightshade, Kauaeranga Valley</p>	<p>Community care groups and schools are also often assisted. For example, Raglan school was assisted with control of climbing asparagus in adjacent reserve land and woolly nightshade control was carried out with the Bald Hill Care Group.</p> <p>Moth plant control was carried out at Hahei, mignonette and boneseed at various Coromandel sites, boneseed at Raglan and Port Waikato and pampas at geothermal sites near Taupo (refer to section 2.4.6).</p> <p>Initial control of a relatively large woolly nightshade outlier behind Waihi was carried out by helicopter with the landowner expected to carry out follow up work.</p> <p>Control work was recorded in the BIS and in Biosecurity Pest Plant Contractor and staff monthly reports.</p>
<p>Promote public awareness of high threat pest plants</p> <p>Provide information and advice through responding to public enquiries.</p> <p>Promotional campaigns (including media releases and flyers) carried out.</p>	<p>Achieved. Enquires were responded to in a timely manner. A range of promotional strategies were employed for the pest plant programme including:</p> <ul style="list-style-type: none"> • Monthly advertising and quarterly editorial in the Hamilton Press • Weekly weed column in the Waikato Times • Weedbusters exhibit using live plants at the National Fieldays • Exhibit at the Hamilton Boatshow • Talks to groups such as garden clubs • Flyers for specific projects, e.g. privet at Kawhia, evergreen buckthorn in Hamilton, woolly nightshade at Kauaeranga valley • New 'pull up' posters for displays • New factsheets and updated factsheets – Noogoora bur, 'Border Control – on farm biosecurity'. • Regional Weedbuster Awards
<p>Support the national biological control collaborative programme</p> <p>Attend collective workshops to participate in research decisions.</p> <p>Support field research on biological</p>	<p>Achieved. EW, along with other regional councils and DOC, is a member of the national bio-control collective. Managed under a contracted service agreement with Landcare Research NZ Ltd, Environment Waikato contributed \$60,000 to this programme. The</p>

<p>control agents for priority pest plants such as woolly nightshade.</p> <p>Undertake releases of agents when available – boneseed leaf roller in Thames, green thistle beetle, ragwort plume moth and tradescantia beetle.</p> <p>Undertake monitoring and record in BIS the success, or otherwise, of population establishments.</p>  <p>Photo 5: Checking for biocontrol - ragwort plume moths.</p>	<p>programme funds research and applications for release of new bio-control organisms.</p> <p>Staff attended a Landcare workshop in Auckland and a collective meeting to prioritise research at Christchurch. Landcare has developed a simple monitoring programme which could be adopted by regional council staff to better monitor the effectiveness of bio-control releases.</p> <p>Release of biocontrol agents includes the green thistle beetle for control of all thistles, the ragwort plume moth and the boneseed leaf roller.</p> <p>A scientist from Landcare Research visited a release site for the ragwort plume moth and found it was well established. This will enable the populations to be dispersed.</p> <p>The application to ERMA for the release of the woolly nightshade lace bug was approved and it should be available for release in the Waikato region during the 2010/11 summer.</p>
---	---

2.4.3 Compliance – plant pests

The RPMS contains methods to achieve regional expectations in controlling environmental plant pests to prescribed standards. This project is carried out to ensure that 21 widespread plants (Australian sedge, banana passionfruit, boneseed, climbing asparagus, Darwin's barberry, gorse/broom, Mexican devil, mignonette vine, mistflower, moth plant, pampas, contorta pine, wild cherries, tutsan, willows (grey and crack), wild ginger, woolly nightshade and yellow flag) do not adversely affect regional environmental values.

Many of the current rules have been in place since 2002 and others since 1996. A large part of this project is providing advice and information on control methods. The enforcement process used ensures compliance with strategy rules.

Budget **\$324,027**
Actual expenditure **\$468,383**

Performance Measures	Achievements
<p>Undertake property inspections to ensure RPMS standards are met.</p> <p>Annual surveillance programmes carried out and infestations recorded.</p>	<p>Achieved. Regionally based contractors and staff targeted historical problem areas and properties and responded to valid complaints received. All inspections were recorded in the Biosecurity Information System database.</p>

<p>Inspections followed up with advice and/or pest programmes to landowners.</p> <p>Historic and 'problem' properties and localities will be prioritised, as will specific pest plants which may have higher priority due to locality and/or proximity to significant natural areas, e.g. woolly nightshade in outlier areas.</p>	
<p>Initiate enforcement action for non-compliance with rules</p> <p>The three step compliance and enforcement process outlined in section 11.3.1 of the Regional Pest Management Strategy will be followed. All steps of the process fully recorded in the BIS.</p>	<p>Achieved. Nine section 128 Notices of Intention to Act on Default were issued, mainly for woolly nightshade and including moth plant, common pampas and kahili ginger. Six debts with regard to these costs were settled, two of which required liens, which were later removed. The remaining three notices required liens to be lodged for failure to pay debts.</p>
<p>Promote public awareness of containment pests in the RPMS</p> <p>Provide information and advice through responding to public enquiries.</p> <p>Promotional campaigns (including media releases and flyers) carried out, especially with regard to new containment pest plants in the RPMS.</p>	<p>Achieved. All enquires were responded to in a timely manner. A range of promotional strategies are employed for the pest plant programme including:</p> <ul style="list-style-type: none"> • Monthly advertising and quarterly editorial in the Hamilton Press • Weekly weed column in the Waikato Times • Weedbusters exhibit using live plants at the National Fieldays • Exhibit at the Hamilton Boatshow • Talks to groups such as garden clubs • Flyers for specific projects eg privet at Kawhia, evergreen buckthorn in Hamilton, woolly nightshade at Kauaeranga valley • New 'pull up' posters for displays • New factsheets and updated factsheets – Noogoora bur, 'Border Control – on farm biosecurity'. • Weedbuster Awards

2.4.4 Regional priority catchment protection

The long term aim of this project is to address river management, soil conservation and flooding issues across the regional catchments through goat and possum control.

In developing flood protection proposals for the Thames Coast (the Peninsula Project) a link was identified between the stability and health of upper catchment areas and the runoff and debris generated from these areas in high rainfall events, exacerbating the impacts of flooding on communities downstream. A key part of flood mitigation proposals is animal pest control in priority catchments.

With regard to river and catchment activity, there is a need to make progress from the present ad hoc animal pest control approach to an integrated priority catchment based programme once the extent of issues has been identified.

Following on from the successful implementation of the Peninsula Project in 2005/06, the River and Catchment Services Group has identified 16 regional catchments where pest control should be undertaken to reduce erosion, minimise runoff and control flooding. There are 327,000 ha. of land in these catchments that currently receive no possum or goat control.

The purpose of this project is to prioritise the most important catchments first and undertake appropriate pest control in each area. Community consultation and funding of these projects will be important issues to address in the next five years.

On the Coromandel Peninsula, Environment Waikato has entered into a partnership with DoC to eradicate/reduce goats and possums over the Peninsula, with the initial focus on the Thames to Coromandel Coast. Environment Waikato and Department of Conservation has successfully lobbied Central Government to provide DoC with extra funding to control goats and possums on Crown land along the Thames Coast.

Budget **\$ 835,173**
Actual expenditure **\$ 659,174**

Performance Measures	Achievements
<p>Peninsula Project possum and goat control</p> <p>Attendance at joint operational planning meetings.</p> <p>Possum control (contracted work) carried out using PPCA processes (see next section) and achieving 5% RTC, or less, by 30 June 2010.</p>	<p>Achieved. All planning meetings were jointly attended by EW and DOC staff.</p> <p>Possum control was planned for the central, or stage 2, area between Te Puru and Manaia. DOC undertook the bulk of the work on conservation and private land in the south end of the block, on 4,710 ha., utilising their <i>Peninsula Project</i> possum control team. Excellent results, below 5 per cent RTC, were achieved.</p> <p>EW managed tender/contracts for the Kereta West and Te Mata blocks in the north of the area. Both operations were completed during the year, with RTCs of 0.78 per cent and 1.33 percent, respectively. Possum control was not required in the Waikawau control block as possum densities were still low from previous initial control work.</p> <p>As a lead into the 2010/11 financial year, trend monitoring was carried out in the northern or stage 3 part of the <i>Peninsula Project</i>, between Manaia and Coromandel. Results indicated overall that possum densities were still at or below the 5 per cent threshold and logging activities in the 'higher density' blocks precluded any control work for the 2010/11 year. Subsequently, the budget earmarked for this work was diverted to</p>

<p>Adhere to the MOU between DOC/EW for an annual contribution to DOC expenses for goat/possum work undertaken on privately owned land.</p>	<p>the NW Waikato PPCA operations proposed for the year.</p> <p>Achieved. This was the last year of the formal agreement with DOC to contribute jointly to costs associated with running the goat/possum teams, completing work in the Kauaeranga Valley, the publicity and consultation required and the approvals needed.</p>
<p>Kaimai – Mamaku catchment management initiative</p> <p>Working collaboratively with partners in the inter-agency working group and attendance at all appropriate meetings of the group.</p> <p>Contribution provided to existing goat control initiatives, by 30 June 2010.</p>	<p>Achieved. Three meetings of the Kaimai Mamaku collaborative group were attended. The State of the Environment Report of the whole area was received and discussed. The NZ Landcare Trust (NZLT) has been appointed for a three year Ministry for the Environment funded contract to undertake community consultation to determine what catchment management issues there are and explore options to address them. Kate Akers has been appointed as the NZLT facilitator and has been proactive in engaging with communities and interest groups.</p> <p>Goat control was also achieved. Two areas within the Kaimai-Mamaku Forest Park received goat control, in operations managed by DOC but co-funded between DOC, EW and Bay of Plenty Regional Council. Over 5,500 hectares were covered in the northern Kaimai area (Waitawheta and Mangakino catchments within EW's region) using ground hunting methods, with aerial logistical support. A total of 201 goats were destroyed, compared with 350 the year before. Total cost of control was \$47,000.</p>
<p>Goat control in the southern Coromandel ranges for catchment and biodiversity values</p> <p>Environment Waikato staff are an integral part of the decision making team.</p> <p>Goat control reduces numbers in the control area to less than one goat per effective hunter day, by 30 April 2010.</p>	<p>Achieved. Goat control was carried out in the Puriri and Maratoto areas, on both Crown and private land. The collaborative programme was carried out between September 2009 and April 2010, resulting in 153 goats being destroyed. Control was by way of ground control hunters, managed under contract by DOC, hunting a total of 1,368 hours. Total cost of control was \$62,000.</p>

2.4.5 Regional priority possum control

The Waikato region has benefited economically and ecologically from millions of dollars spent by the Animal Health Board (AHB) to control possums and ferrets. Although the

main goal has been to eradicate bovine Tb in the region, these operations have produced benefits for native biodiversity.

Over the next five years (2009-2014) AHB directed possum control had anticipated to cease on over 500,000 hectares of land. This cessation process now seems to be occurring at a slower rate. Nevertheless, once bovine Tb control ceases the strategy is that possum control in these areas will transition gradually to Environment Waikato direct control programmes and be regionally funded. The intention is to 'maintain the gains' made through previous possum control carried out.

Environment Waikato has funded and undertaken work in 29 priority possum control areas (PPCA's) in recent years. Currently there are 36 PPCA's identified, some of which planning is only just underway or are being tendered for the first time. This work includes nine former AHB vector control areas which have already transitioned to the PPCA programme.



Photo 6: Possum kill trap, Mahoenui operation, March 2010.

The 13 separate possum control operations outlined in this section include a mix of initial (new) control work (at Te Miro and completion of the Woodleigh control work), former bovine Tb operations (Aria and Mokauti) entering the regional funding programme for the first time and maintenance control in a number of other PPCA's that have been running for some time (refer also to map in Figure 1).

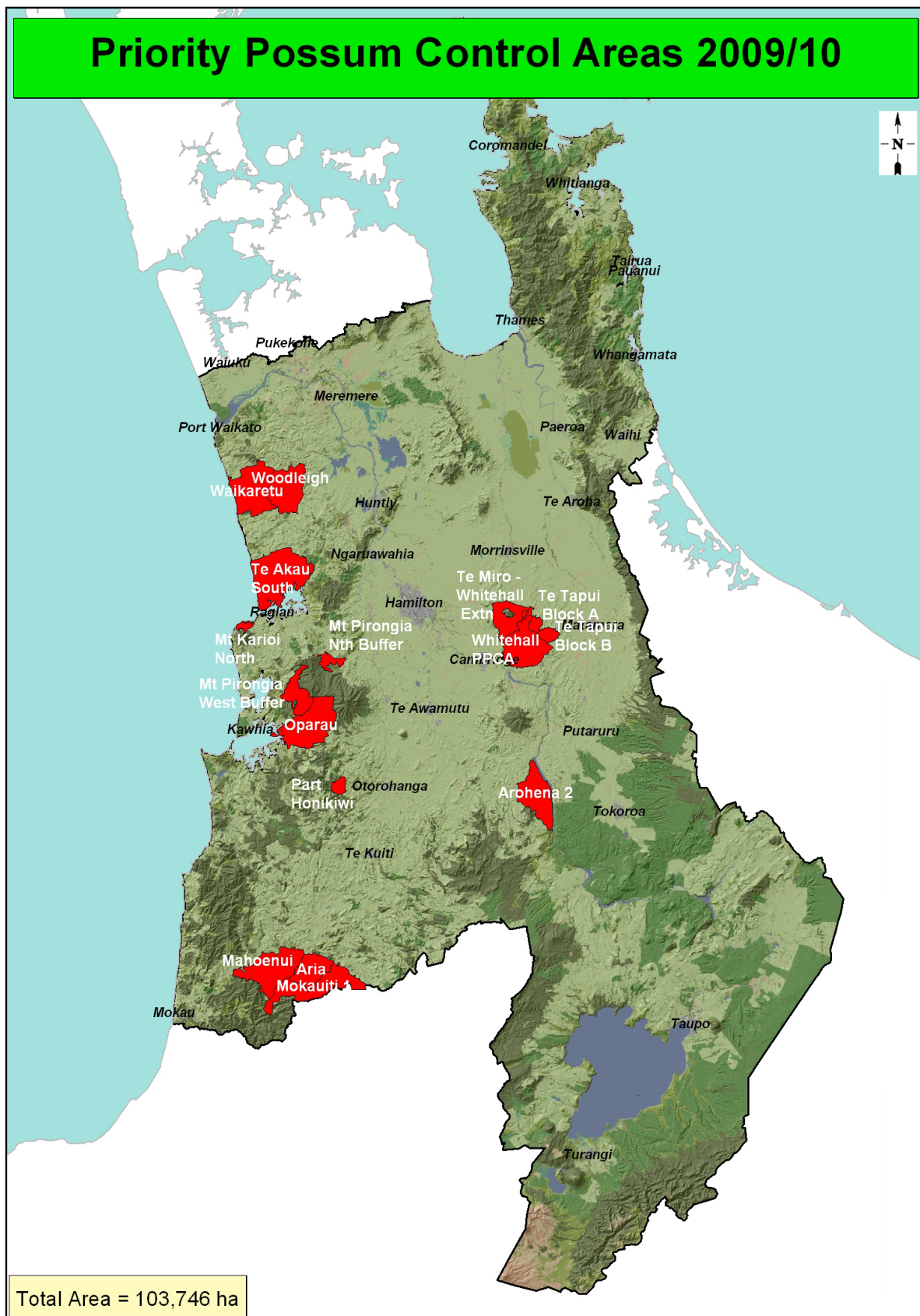


Figure 1. Priority Possum Control Areas 2009/10

Budget **\$1,927,539**
Actual expenditure **\$1,915,492**

Performance Measures	Achievements
<p>Regional possum monitoring – trend and operational (performance)</p> <p>All trend monitoring completed and monitoring results analysed by 30 October 2009.</p> <p>Recommendations for 2010/11 maintenance control presented to Regional Pest Management Committee by 30 November 2009 as part of draft annual planning process.</p>	<p>Achieved.</p> <p>Residual Trap Catch (RTC) trend monitoring for potential 2010/11 PPCA maintenance operations and analysis of results was completed by 30 October 2009. The monitoring results were used to help prioritise proposed PPCA operations for 2010/11.</p> <p>Recommendations for 2010/11 PPCA maintenance control programme as part of the draft annual planning process were received by the Regional Pest Management committee held 26 November 2009.</p>
<p>Initial possum control at Waikaretu, Woodleigh and Te Miro</p> <p><u>Waikaretu PPCA</u> – Control contractor achieves 5% RTC by 30 September 2009. (All other processes were completed in 2008/09 year).</p> <p><u>Woodleigh PPCA</u> – Contractor consultation processes completed and possum control achieves 5% RTC performance target by 30 November 2009.</p> <p><u>Te Miro PPCA</u> - Control contractor achieves 5% RTC by 30 August 2009 (All other processes were completed in 08/09 year).</p>	<p>Achieved.</p> <p><u>Waikaretu</u> Farm and Forest Pest Services Ltd carried out control between 4 May and 7 August 2009. Post operation monitoring indicated that a 0.84% RTC was achieved.</p> <p><u>Woodleigh</u> Farm and Forest Pest Services Ltd carried out control between 15 July and 11 November 2009. Post operation monitoring indicated that a 0.23% RTC was achieved.</p> <p>EcoFX Ltd was awarded the contract for <u>Te Miro</u>. The operation commenced on 4 May and continued until 26 June 2009. Post operation monitoring indicated that the control had initially failed with a 5.71% RTC achieved. EcoFX carried out re-work of the entire PPCA. This work was completed by 30 July 2009 and further post operation monitoring indicated that they control had succeeded with a 0% RTC achieved.</p>
<p>Possum control maintenance operations</p>	<p>Achieved/Achieved in part.</p>

	<p>Farm and Forest Pest Services Ltd was awarded the contract for <u>Honikiwi</u>. Control commenced on 12 November 2009 and was completed on 20 January 2010. Post operation monitoring indicated that overall an average 3.39% RTC was achieved. However some re-work was required due to a high line being recorded. The resulting re-work was completed on 5 February 2010.</p> <p><u>Other areas</u> RTC trend monitoring results indicated that the Glen Murray, Waimai Valley and Waingaro-Rotowaro PPCA's required possum maintenance control. EW processes were completed during the April 2010. A tender covering all three PPCA's was advertised on 28 June 2010.</p>
<p>Scoping of Te Akau and Hakarimata PPCA's</p> <p>Project scoping and planning processes completed by 1 November 2009.</p> <p>Consultation underway by 1 October 2009 and ongoing throughout duration of projects</p> <p>Tendering process for Te Akau operation completed by 1 March 2010 and work commenced June 2010.</p> <p>Draft Hakarimata control plan discussed with key parties by 30 November 2009 and an action plan developed to enable control in Spring 2010.</p>	<p>Achieved/Achieved in part.</p> <p><u>Te Akau PPCA</u> Initial project scoping was completed by 1 November 2009. Consultation with landowners begun in October 2009 and is still continuing on an 'as required' basis.</p> <p>The tendering process was slightly delayed and was not completed until May 2010. Control on the ground still commenced in June 2010.</p> <p><u>Hakarimata PPCA</u> A control plan was developed and early discussions were held with DOC and Environment Waikato Iwi relations staff. It was recommended that a long consultation period would be required in an effort to get iwi involved in the decision making process. Due to the requirement of this level of consultation no fixed operation date could be proposed until consultation was underway.</p> <p>Direct consultation began with iwi at a hui held at Turangawaewae on 30 May 2010. Consultation and iwi relationship building continues with the new aim of control occurring during Spring 2011.</p>
<p>Regional auditing programme</p> <p>All auditing requirements are met within the timeframes of each PPCA project.</p> <p>Any breaches are resolved within the timeframes of each PPCA project and</p>	<p>Achieved in part.</p> <p>All ERMA reporting for aerial 1080 operations (Mahoenui only) was submitted within 6 months of completion of the operation.</p>

<p>following the SOP guidelines.</p> <p>ERMA reporting for aerial 1080 operations is submitted within 6 months of completion of aerial work.</p>	<p>Staff capacity shortages resulted in fewer PPCA audits being undertaken than planned. Some prioritisation of audits was carried out to ensure that projects of a contentious nature or those with special conditions were audited.</p> <p>All audits that were undertaken were completed to the specifications of the SOP guidelines.</p>
<p>Documentation and implementation of PPCA process</p> <p>SOP presented to RPM Committee and adopted as Council policy, by 30 September 2009.</p>	<p>Achieved in part.</p> <p>The presentation of the SOP was removed from the agenda of the RPM Committee on two occasions. The SOP was finally presented to the RPM Committee in November 2009.</p> <p>The SOP has not formally been adopted by Council but has been agreed to in principle.</p>
<p>Regional PPCA newsletter circulated to all landowners</p> <p>Newsletter written and distributed by 31 October 2009.</p>	<p>Achieved.</p> <p>A draft for the first Regional PPCA newsletter entitled <i>Insight</i> was completed during October 2009. The first issue of <i>Insight</i> was delivered to the approximately 4,000 landowners involved in PPCA's throughout the region during November 2009.</p> <p><i>Insight</i> newsletters are produced three times annually. The distribution dates remain flexible depending on PPCA operational timeframes, and staffs ability to contribute material. However the aim is that <i>Insight</i> issues are distributed in late summer, winter, and spring.</p>

2.4.6 Regional priority biodiversity sites

This project takes a site-led, rather than a species-led, approach to pest management. This allows Environment Waikato to take a more holistic and integrated approach to pest control based on the particular threats to a site.

The project aims to enhance, or at least maintain, significant indigenous ecosystems (remnant forest and wetlands) on private land across the Waikato region, through working co-operatively with individual landowners, community groups, iwi groups and DoC. The project is one of a range of activities being undertaken by Environment Waikato as a means to address the issue of biodiversity enhancement in the Waikato region.



Photo 7: More tui are visiting Hamilton

Budget \$737,944
Actual expenditure \$500,853

Performance Measures	Comments																					
Hamilton Halo project Achieve a 5%, or less, rat tracking index (RTI) and a 5%, or less, residual trap catch (RTC) at: Old Mountain Road, Hope's bush, Te Miro Reserve, Maungakawa Reserve, Tirohanga Road and Pukemokemoke 'halo sites'. Annual bird monitoring surveys at selected sites using five minute bird counts. Produce and distribute the Te Miro Halo newsletter.	<p>Achieved.</p> <p>All six 'halo sites' achieved a five per cent or less RTI and RTC during October 2009 (see table below). The RTI results remained at five per cent or below in January 2010.</p> <table><tr><td></td><td>Oct-09 %RTI</td><td>Oct-09 %RTC</td></tr><tr><td>Hope</td><td>4.5</td><td>2.69</td></tr><tr><td>Old Mountain Rd</td><td>0</td><td>2</td></tr><tr><td>Te Miro</td><td>0</td><td>1.34</td></tr><tr><td>Maungakawa</td><td>3.3</td><td>0</td></tr><tr><td>Tirohanga</td><td>0</td><td>0.83</td></tr><tr><td>Pukemokemoke</td><td>0</td><td>0</td></tr></table> <p>No funding for five minute bird counts was available. However, Te Miro residents were involved via the Halo newsletter in the New Zealand Garden Bird Survey, produced by Landcare Research. Results will be used to trend long term changes in native bird species composition over time after three years of Halo pest control in the area.</p> <p>Refer to case study one for more information on the Hamilton Halo project and other initiatives.</p>		Oct-09 %RTI	Oct-09 %RTC	Hope	4.5	2.69	Old Mountain Rd	0	2	Te Miro	0	1.34	Maungakawa	3.3	0	Tirohanga	0	0.83	Pukemokemoke	0	0
	Oct-09 %RTI	Oct-09 %RTC																				
Hope	4.5	2.69																				
Old Mountain Rd	0	2																				
Te Miro	0	1.34																				
Maungakawa	3.3	0																				
Tirohanga	0	0.83																				
Pukemokemoke	0	0																				

<p>Significant Natural Areas (SNA) project</p> <p>Develop a strategy to implement pest control work on selected sites identified from the SNA database.</p> <p>Establish condition monitoring processes at selected sites to track changes in forest health resulting from pest control.</p> <p>Implement appropriate action plans at selected sites identified, by 30 June 2010.</p>	<p>Achieved in part.</p> <p>Suitable criteria were determined to identify SNA's which require remedial work in the area of animal and plant pest control or fencing/planting support.</p> <p>Condition monitoring methods have been developed but have yet to be established on selected sites.</p> <p>Action plans were not implemented by the due date because of a shortage in staff capacity to commence the project. Funding was carried forward into the 2010/11 budget and field/engagement work was underway in the Waitomo District, as at 1 November 2010.</p>
<p>Small-scale animal pest community initiatives</p> <p>Establish funding criteria and eligibility rules for Council agreement by 30 September 2009.</p> <p>By 31 October 2009, invite community groups to apply for pest control funds, allocate funds based on criteria and monitor progress of successful applicants throughout the year.</p> <p>Statement provided in RPMS annual report on work undertaken and funding provided.</p>	<p>Achieved. Council approved funding for a number of groups, as per the previous year, but agreed that the fund should become 'contestable' for 2010/11 and more region-wide.</p> <p>Funding of \$72,000 was allocated to 11 community groups:</p> <ul style="list-style-type: none"> • Hikuai Wharekawa Community Possum Control Project • Whenuakite Kiwi Care Group • Project Kiwi • Kuaotunu Environmental Action • Habitat Tuataewa • Thames Coast Kiwi Care • Whakaupoko West Franklin (Bald Hill) Land Care Group • Harkers Reserve Committee • Pukemokemoke Reserve Trust • Te Kauri Trust • Moehau Environmental Group • Coromandel Area School Kiwi Project. <p>Actual funding was \$67,000.</p>
<p>Coromandel facilitation and discretionary direct control service provided</p> <p>Any discretionary control undertaken is to be summarised monthly in reports to EW.</p> <p>Opportunities for co-funding control work is pursued with TCDC and noted in monthly reports.</p>	<p>Achieved.</p> <p>Two new groups were established in the Coromandel area by the animal pest contractor, at Tairua and Waitete Bay.</p> <p>TCDC have been in talks and have agreed in principle to co-fund pest control on reserve land that they administer.</p>

<p>Facilitation with community groups is reported monthly, noting annual and long term objectives of each group as they are established.</p> <p>Financial reporting on budget provided monthly.</p> <p>Monthly report notes groups/schemes liaised with over the period.</p>	<p>Facilitation of groups was achieved in two ways - smaller groups or individuals were contacted monthly by the animal pest contractor. Bait supplies were renewed if required. AGM's were attended for larger groups in the area.</p> <p>Feedback via monthly reporting was maintained.</p>
<p>Pest plant control in, and restoration of, geothermal sites in Taupo/Rotorua areas</p> <p>No new wilding pine seedlings or pampas plants established at Ohaaki, Crown Park and Otumuheke Stream geothermal sites, which have been previously controlled.</p> <p>Choose one new site from the regional priority list of sites and undertake appropriate plant pest control.</p>	<p>Achieved.</p> <p>Weed maintenance maintained at all the listed sites. Some additional mature pines were drilled and poisoned down stream at Otumuheke.</p> <p>Ohaaki East also known as Vanner Mills site. Wilding pines removed by owner and assistance offered for broom spraying near prostrate kanuka site.</p>
<p>Steuart Russell Reserve pest control</p> <p>Support the New Zealand Native Forest Restoration Trust to undertake possum and/or goat control to enhance biodiversity values at this site.</p>	<p>Not achieved. Due to staff capacity issues this work was not progressed. The SNA project, as outlined above, will integrate biosecurity/biodiversity needs at the site, as will a proposed priority possum control in the Nukuhakari-Awakino area.</p>



Photo 8: Spectacular flowering pohutukawa at Stony Bay, northern Coromandel, attributable to possum control – DOC photo supplied.

2.5 Potential Pest Management

2.5.1 Potential plant and animal pests

There are a number of pests that have the potential to become invasive organisms in the region. There is a regional need to manage the risks imposed by these pests. The pests include: those not yet found in the region, those known to be in isolated parts of the region but could translocate to new sites, or known to be across the whole region (in varying densities) but their effects are not fully understood.

Environment Waikato needs to be able to respond to new incursions through:

- an effective surveillance programme to detect incursions
- an ability to apply direct control measures as quickly and effectively as possible.

Budget **\$ 135,042**

Actual expenditure **\$ 42,861**

Performance Measures	Achievements
<p>Develop a surveillance strategy to respond to potential pests</p> <p>Surveillance strategy completed by 30 June 2010 and presented to RPM Committee for adoption.</p> <p>BIS database capability reviewed to ensure user friendly input, retrieval and manipulation of data is possible.</p>	<p>Not achieved. Due to staff capacity issues this work was not progressed to the point of there being a strategy in place. However, collaborative work was commenced, with DOC, looking at how the organisations could work together on identifying pathways for spread and how best to utilise the 'eyes and ears' of the many people and companies who are in outdoor work environments (e.g. parks and gardens contractors, arborists) and generally aware of ecological issues but not necessarily aware of the potential risks posed by foreign plants.</p> <p>The database review was not achieved as this was not deemed relevant in light of the non implementation of the above work. However, potential pest sightings are recorded by staff/contractors when they discover them.</p>

2.5.2 National Partnerships

The current RPMS states that partnerships with MAF Biosecurity NZ (MAFBNZ) will be considered. Current dealings of a formal nature with MAFBNZ include; being joint signatory to the National Pest Plant Accord (NPPA) and the joint management of National Interest Pest Programmes (Manchurian wild rice and white bryony). Biosecurity New Zealand warrant Council staff/contractors to implement the NPPA on its behalf and EW enters into annual contracts with MAFBNZ for the latter two projects.

Other partnership work has been in relation to assisting with one-off projects such as surveillance/monitoring associated with Asian gypsy moth and assisting MAFBNZ with river monitoring surveys for *didymo* presence/absence.

Budget **\$244,074**
Actual expenditure **\$302,769**

Performance Measures	Comments
<p>Compliance of nurseries with the National Pest Plant Accord (NPPA)</p> <p>All known nursery and plant retail outlets are inspected at least once. Results are recorded in the NPPA database.</p>	<p>Achieved. Most nurseries in the region were visited and the NPPA information disseminated. There were no major concerns with banned plants being sold. MAFBNZ notified EW of some suspected banned plants being sold on 'TradeMe' and these were followed up by staff, with trading ceased where appropriate.</p>
<p>Promote awareness of the NPPA</p> <p>Provide information and advice to outlets and provide NPPA booklets.</p>	<p>Achieved. The NPPA booklet is given to all nurseries at the time of visiting or inspection. The booklet is available to order from the EW website and is given to interested parties such as garden groups (when talks are given) or schools when requested.</p>
<p>Direct control of Manchurian wild rice and white bryony under contract to MAFBNZ</p> <p>Direct control carried out for Manchurian wild rice and white bryony as per MAFBNZ contracts, within budgets agreed.</p> <p>Reports completed as per MAFBNZ specifications.</p>	<p>Achieved. White bryony and Manchurian wild rice are classed as National Interest Pests (NIPs) by MAFBNZ. EW has agreed to manage these pests in the Waikato under a partnership agreement with MAFBNZ.</p> <p>The white bryony surveillance and control in Aria and Mokauti was carried out by subcontractors. Control was successful with all known white bryony plants found destroyed in two rounds of control. More surveillance is planned for next year.</p> <p>Manchurian wild rice control was carried out by EW works staff based in Paeroa and the BPPC for Waipa. All sites were controlled twice in the Hauraki area and the Horahora site treated once. The small Cambridge infestation was not controlled due to access difficulties which were expected to be resolved next year.</p> <p>EW hosted the Manchurian wild rice 'best practice guidelines' meeting with regional council staff from Northland, Auckland and Wellington and the MAFBNZ co-ordinator.</p>

	All known infestations were surveyed and densities assessed.
<p>Kauri die-back management (<i>Phytophthora taxon Agathis</i> - PTA)</p> <p>Collaborative and timely responses to address kauri dieback, that includes MAF Biosecurity New Zealand, the Department of Conservation, Auckland Regional Council, Northland Regional Council, Environment Waikato and Environment Bay of Plenty.</p> <p>Provision of annual funding to assist implementation of this project.</p>	<p>Achieved. Environment Waikato is a collaborative decision making partner and funding agency for the PTA project. Inspections have been carried out with DOC staff and PTA experts in the Coromandel, Waikato and Franklin areas.</p> <p>Refer to case study two for more information.</p> <p>No PTA has been found in the Waikato. Public awareness and sanitary measures have been instigated at high risk sites.</p> <p>An EW staff member was seconded to MAFBNZ for 18 months to run the national co-ordination programme.</p>

2.6 Crown RPMS obligations

2.6.1 The Crown, the Biosecurity Act and regional councils expectations

Environment Waikato spends approximately \$6 million a year on pest control, spending that is an important part of the regional council's work to protect the health of the regional economy and the environment. That money helps deal with a range of animal pests that threaten primary production and biodiversity and with pest plants that infest pasture and clog waterways, as can be seen through reading this annual report.

The Waikato's reliance on agriculture, forestry and tourism makes it particularly vulnerable to the economic threats posed by any uncontrolled introduced pests. The Council wants to make sure that the region is well prepared to handle these existing pests and any new threats that may emerge in the future. The Council is also determined to extract the greatest value from the spending on pest control, particularly by ensuring that central government is paying its fair share.

In 2009/10 EW joined other regional councils to identify some challenges and shortfalls within the current national biosecurity system and recommend some changes to improve the system for both the Crown and regional councils. One of this report's key findings is that Crown's current exemption from compliance with regional pest management strategies creates a double standard between the Crown and all other landowners.

Under the current Biosecurity Act, the Crown and its agencies do not have to abide by the same regional pest rules as all other regional ratepayers. This situation is set to change with the adoption by government of the Future of Pest Management Project (FOPM) in June 2010.

The Crown does a lot of pest control on its own lands to meet its conservation goals, and DOC and other agencies do cooperate with EW on many pest projects. The current lack of an obligation to comply with the RPMS means the government seldom provides sufficient funds to underwrite Crown agencies' work on EW-designated pests on the Crown estate.

As a result, EW has sometimes had to delay or postpone necessary pest control operations because Crown agencies do not have the proper budgets to carry out parallel operations on adjacent Crown lands. This is not good value for regional ratepayers.

However, under FOPM a commitment has been made by the Crown to meet its good neighbour obligation, subject to developing national policy direction and ensuring that RPMS's rules are consistent with the agreed national directions. The details are extremely important and will take a few years to implement. Environment Waikato remains closely engaged in this issue.

2.6.2 Department of Conservation funded projects – 2009/10

Environment Waikato currently has an informal annual agreement with the Department of Conservation (DoC) to a contribution which specifically targets animal and plant pest problems on the conservation estate, which exacerbate pest problems on neighbouring privately owned land.

The total amount of funding under this programme is limited (approximately \$130,000 to \$140,000 per annum, plus some funds able to be obtained through a nationally

contestable process). The following table outlines the RPMS/DoC works programme completed during 2009/10.

Location	Species	Expenditure	Comments
Kaimai-Mamaku forest park	Climbing spindleberry - Bay of Plenty Conservancy	1,000	Ongoing control
Te Tapui Reserve	Possums - Environment Waikato led project	102,000	Work funded over two years
Lake Whangape	Alligator Weed	20,000	Environment Waikato lead role
Ramaroa Road, Piopio	Old man's beard	800	Ongoing
Kawhia South	Ginger and pampas	2,000	Ongoing
Te Kauri Reserve	Cathedral bells, ginger	2,000	New pests being controlled
Waikawau Bay	Woolly nightshade	4,000	New project
Whenuakite	Woolly nightshade	3,200	Collaboration with Landcorp
Cathedral Cove	Woolly nightshade and gorse	5,000	Ongoing
Total		\$ 140,000	

All operations went ahead in 2009/10 as planned. In addition, a further \$9,000 contribution was made towards the cost of possum control at Te Tapui Reserve to buy the bait stations and have them left behind in Block B, which should reduce the cost of future possum control at this site.

Due to the size of the operation, Te Tapui Reserve absorbed the greater part of the budget for 2009/10 as well as a significant contribution made in 2009/09. Co-operation between the Department and EW in setting priorities meant that this did not affect the highest priority weed programmes, where EW has an objective of eradication; however, funding for many of the lower priority containment weed projects was affected. These projects will require funding in 2010/11 in order to maintain progress towards reducing impacts of these weeds on DOCs' neighbours.

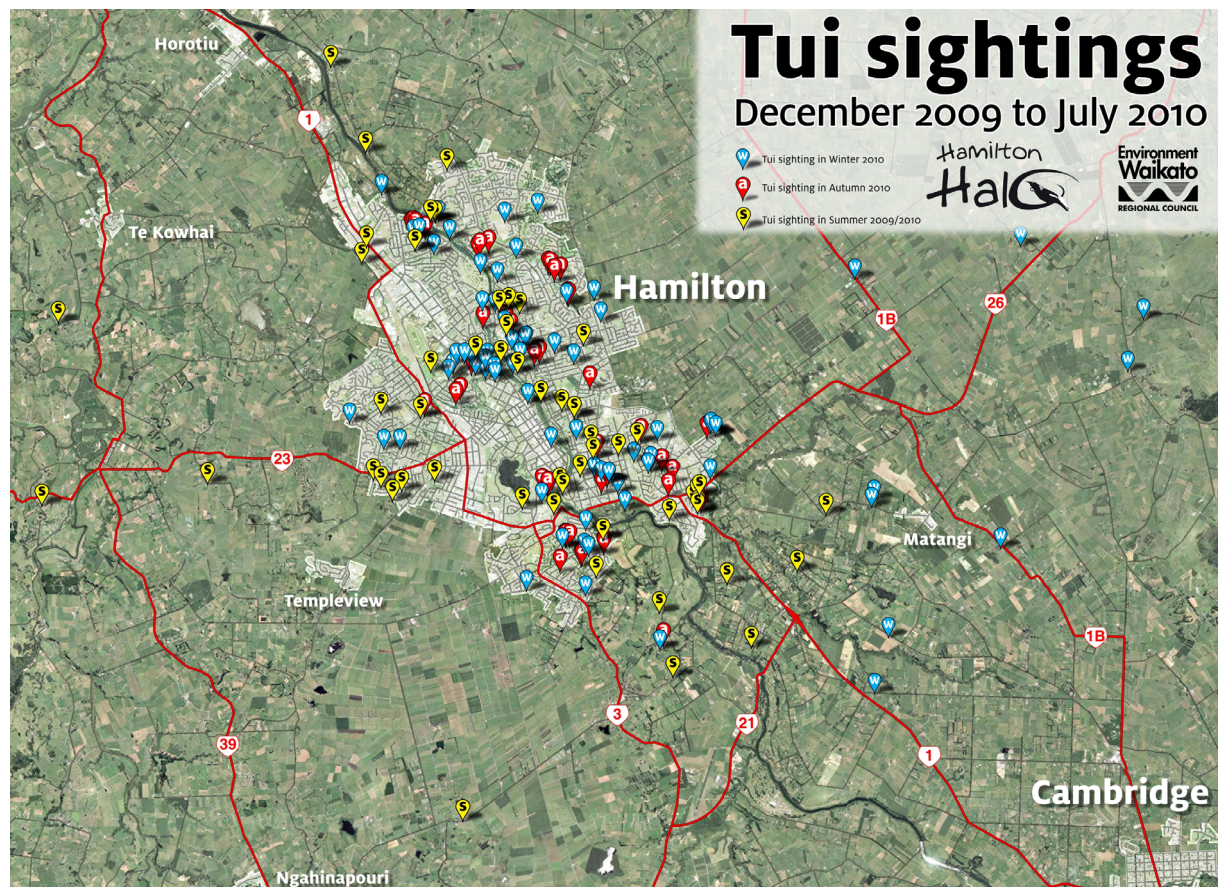
3 Case Studies

3.1 Case study one: Protecting Hamilton's urban biodiversity

In the 2009/10 financial year the Hamilton Halo project sang a merry song as Environment Waikato's Biosecurity-Heritage Group reported significant increases in the number of native birds returning to Hamilton city.

The Hamilton Halo project, which started in 2007, aims to increase urban biodiversity by bringing more native birds (especially tui) back into a 20km radius of Hamilton City. In the first six months of the year 375 tui sightings were recorded, with September numbers peaking at 53.

Because of high populations of ship rats in the Waikato region, an extensive pest control programme was undertaken at selected sites to protect native birds during the breeding season. During 2009/10, six Halo sites covering 1,024 ha. reached their optimum target of less than five per cent rodent tracking index (RTI), which is considered the safe level for chicks to fledge successfully. Anecdotal evidence from neighbouring landowners suggests that the sight and sound of birdlife returning to these areas is really noticeable.



Tui sightings based on internet and phone records between December 2009 – July 2010.

In May 2009, Environment Waikato collaborated with Landcare Research Ltd and the University of Waikato to release 50 bellbirds (also known as korimako) from Auckland's Tiritiri Matangi and Tauwharanui bird sanctuaries into the Hamilton Gardens.

Leg bands and transmitters were used to identify the birds for the first three weeks. The event attracted much media and public attention with reported sightings proving invaluable to the project post release.

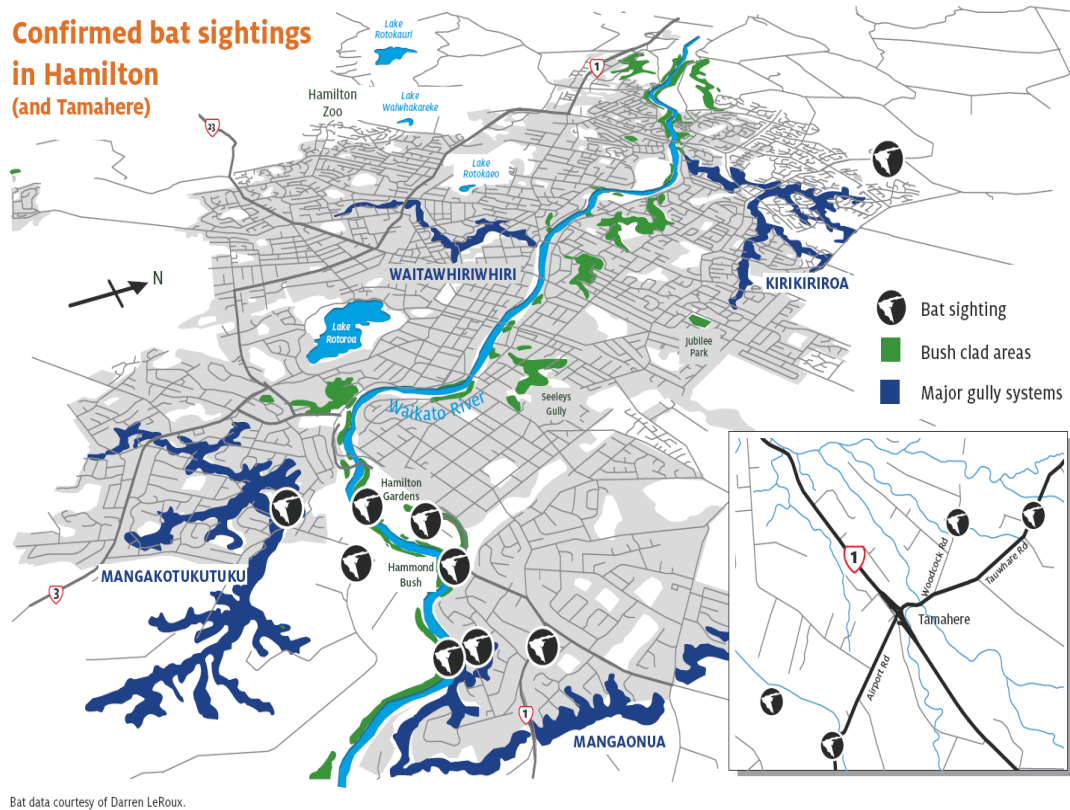


Photo 9: A released bellbird singing in a persimmon tree (courtesy of Margaret Bryant).

An unexpected and welcome side effect of the project came as previously unsighted un-banded bellbirds came out of hiding to meet their newly released counterparts. Public assistance again proved invaluable as the project team relied on sightings to track the birds. To date, over 40 bellbird sightings have been reported. Continued public assistance will help to ensure breeding bellbirds are protected through targeted pest control programmes.

In June 2009, a multi-agency group of Environment Waikato, Hamilton City Council, the University of Waikato, Department of Conservation and the Riverlea Environment Society launched a sister project to Hamilton Halo. Project Echo is a conservation initiative aimed at increasing public awareness about and supporting the City's population of long-tailed bats (pekapeka).

A bat distribution database (BatMap) has been established to record reported bat sightings. The BatMap will help with understanding which habitats bats depend on in the city.



The start of a bat distribution map for Project Echo

Project partners have encouraged the public to continue to report sightings of tui, bellbird, and bats. The growing public support and awareness during the past year has made it easier to track bird and bat numbers and monitor the progress of these projects. As these projects mature, the information gathered will help with future planning to determine what work is needed and where to better enhance the programme.

3.2 Case study two: Kauri die-back project

Environment Waikato has joined forces with other regional councils, the Department of Conservation and MAF Biosecurity New Zealand in the fight against *Phytophthora* taxon *Agathis* (PTA) which is killing kauri of all ages in Northland, Auckland and on Great Barrier Island.



Photo 10: Te Kauri Reserve, a c.200 year old healthy kauri tree

(PTA) was first discovered in the 1970s as a result of research undertaken into kauri dieback observed on Great Barrier Island. Using diagnostic technology available at the time, however, it was wrongly identified as *Phytophthora heveae*, which was already present in New Zealand. However, in late 2008 as a result of new evidence presented by Auckland Regional Council and Landcare Research Ltd, and using more advanced diagnostic technology, PTA was confirmed as a new-to-science species specifically linked to dieback in kauri.

Since its discovery in 1972, PTA has been detected at sites in the Auckland and Northland regions. Affected kauri trees have been found in regional parks and on Department of Conservation and private land over a significant area near Auckland and has also been detected in soil samples at Trounson Kauri Park and Waipoua Forest, the home of Tane Mahuta.



Photo 11: Stand of infected kauri, Rodney District (Source: Auckland Council)

What is PTA?

PTA is a microscopic fungus-like plant pathogen that only affects kauri. PTA belongs to the Chromista family of water moulds and produces two types of spores: water-borne and soil-borne spores. PTA is spread from site to site by kauri tree root to tree root contact, soil movement including people's footwear and 'dirty' machinery. In addition studies are being carried out to determine the role of pigs and other animals living in the forest play in the spread of PTA.

How does PTA infect kauri and what are the symptoms?

PTA enters kauri through its feeder roots and it eats away at the roots starving a tree of nutrition. In advanced stages of dieback PTA may cause what is known as 'collar rot'. The rate of decline of a tree is dependent upon the trees age. In older trees, there may be little or no evidence to indicate the tree is infected. However, as PTA eats away at the roots, there will be signs in the canopy that indicate the tree is infected. These signs include a yellowing of leaves, 'stags heads' and the trees bark may have signs of 'gummosis' (gum bleeding from the trunk) which may eventually lead to the gum lesions forming a circle around the trunk, referred to as 'collar rot – refer photos below'.



Photo 12: Symptoms of PTA

Environment Waikato's participation in the kauri dieback programme

During the 2009/10 year, Biosecurity Officers visited 12 sites where members of the public had reported sick kauri. Two sites were highly suspect for PTA - one site in Taupo and another in central Hamilton. However, after tissue sampling (bark grafts) neither site returned 'positive for PTA'. All kauri visited in the Waikato region were sick/dying as a result of environmental factors such as drought conditions and root trampling (kauri feeding roots are very sensitive and situated very close to the soil surface). Our aim, in the Waikato, is to keep the Waikato PTA-free.

This financial year efforts are ramping up within the Waikato region. Stage 1 of the programmes surveillance plan will commence in November 2010. This will see key sites visited and soil samples taken and analysed to assess the soils status. The four main kauri sites in the Coromandel will be a priority for the surveillance programme.

In efforts to stop the spread of PTA, phytosanitary measures have been implemented with car cleaning kits, semi-permanent and permanent cleaning stations being developed. Within the Waikato region, all field staff of agencies working within areas of kauri forest must maintain clean footwear and equipment. Key reserves have been provided with Trigene disinfectant, brushes and mats to be available at the start and end of tracks through stands of kauri and large, permanent cleaning stations are to be installed in various high-use areas within the Coromandel. In addition to permanent cleaning stations, events such as the Colville Classic must now ensure that cleaning measures are available for all competitors and their equipment prior to commencing this race.