Regional Pest Management Strategy – Operational Plan Report 2009/10

Quality for Life

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greater WELLINGTON
REGIONAL COUNCIL

Regional Pest Management Strategy 2002-2022

Pest Animals and Pest Plants

Operational Plan Report 2009/10

Biosecurity Department

Contents

1. Introduction

The purpose of the Regional Pest Management Strategy 2002-2022 (the Strategy) is to provide a strategic and statutory framework for effective pest management in the Wellington region. There are two major objectives –

1. To minimise the actual and potential adverse and unintended effects of pests on the environment and the community; and

2. To maximise the effectiveness of individual pest management programmes through a regionally coordinated response.

Effective implementation of the strategy will assist Greater Wellington (GW) to achieve its core objective of Quality for Life, by ensuring our environment is protected whilst meeting the economic, cultural and social needs of the community.

The central focus of the strategy is about mitigating pest threats to society, to farming and agriculture in general, and supporting biodiversity (variety of biological life) and ecological health.

This report is the eighth since the implementation of the Strategy. This is the first year of the reviewed strategy document. The 2009/10 year saw continued control on many of our key pest species. The eight years of the Strategy has seen great advances in the effective management of a wide range of pests, and subsequent enhanced biodiversity over large parts of the region; all undertaken with support from landowners, care groups, and local authorities.

Implementation of the Strategy requires resources. Our obligation to the community is to ensure these resources are used as efficiently and effectively as possible. This report provides some detail of how and where those resources were applied in the 2009/10 year.

We welcome any feedback you may wish to provide on the report.

2. Regional Pest Management Strategy implementation

The second year of the Regional Pest Management Strategy 2002-2022 Five Year Review document became operational on 12 June 2010.

The 2009/10 year was the first that all species control and site management were undertaken under the reviewed Strategy. Because of the extended consultation and development of the review document there were systems already in place for most of the changes and new species in the Strategy. Subsequently the new programmes began with very few problems, and the existing programmes continued to operate effectively.

There has been no negative feedback from the community and stakeholders on the new and adapted control and management programmes, indicating an effective consultation and Strategy development process.

Part One

Pest Animals

3. Species led programmes

3.1 Surveillance species

Aim: **To prevent the establishment or minimise the impact, and prevent the further spread, of animal surveillance species in the region at a cost of $44,800.**

Annual cost: **The cost of surveillance species management (monitoring, investigation, publicity and reporting) for the region was $5,520.**

Means of achievement

(i) Provide information and publicity to enhance public awareness of the surveillance species.

Actual performance

In the 2009/10 year the GW website was updated to include detailed information on all six of the Regional Surveillance pest species. This information includes images of the species, why the species is a problem, what threat it poses and relevant links to other online information. GW Biosecurity staff were also available to discuss the technical aspects of these species at a number of field days and other public events.

Means of achievement

(ii) Record and report any incidences of the Surveillance species in the region.

Actual performance

There were no new reports of the Surveillance species in the 2009/10 year.

Means of achievement

(iii) Investigate the feasibility of eradication if a Surveillance species is detected within the region.

Actual performance

No attempts at eradication were made in the 2009/10 year. A GW Biosecurity Officer completed the MAF BNZ initiative training course on the management of ants in urban areas. This included the completion of Unit Standard 22893 'Demonstrate Knowledge and Apply Treatments to Control Ants in the Urban Pest Management Industry'. This training will be useful in the event of any new ant incursions.

3.2 Total control pest animals – rooks

Aim: **To manage rooks as a Containment Category pest to levels that protect production systems at a cost of $72,800**

Annual cost: **The cost of rook management (surveys, research, compliance, education) for the region was $63,727**

Means of achievement

(iv) Undertake direct control by service delivery where rooks are known to exist.

Actual Performance

In the 2009/10 year, aerial nest baiting was carried out at 21 breeding rookeries within the Wairarapa region.

The 21 rookeries represented all known breeding rookeries that were on our data base. A total of 150 nests were baited in the Wairarapa. Fresh but unused nests were also baited and these were factored into the 150 nest total. An earlier start was made with nest baiting again this year to avoid past weather related issues. This meant that eggs were again the main focus of attention whereas chicks have been the target in previous years. At the completion of the first baiting round on Sunday 20th September, the Norwest winds arrived and included in the mix was rain and heavy snowfall on parts of northern Wairarapa.

Biosecurity Pest Animals staff were able to confirm the presence of rooks residing in the Ohariu Valley in the Western Zone during the breeding season but there was no evidence of nesting taking place. Staff contacted land owners in the area to try and gather information on where these birds were frequenting. They were also asked to report any suspicious activities that may indicate nesting attempts but nothing further was reported. There was no aerial surveillance of rooks done in the Western Zone last year.

There was some ground baiting of rooks carried out in parts of Wairarapa during the year. Rooks were successfully baited under walnut trees at Pirinoa during autumn 2009. Then again in February 2010 when a large flock was reported to be damaging a crop paddock in the Tinui district close to the regional boundary. A final successful ground baiting operation was carried out in early March on a harvested barley crop at Bideford. The nest baiting programme still appears to be achieving the desired results as just the one report of crop damage came to hand this year. This was the first case in several years.

Means of achievement

(v) Survey rook populations annually in areas where they are known to exist, and where new infestations are reported.

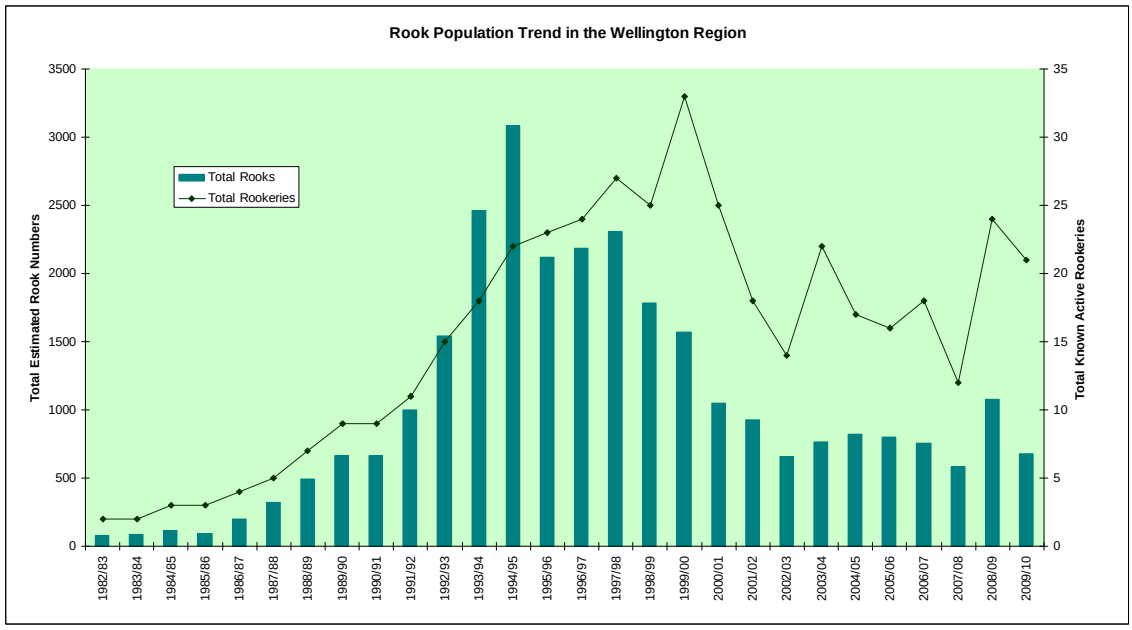
Actual Performance

In the 2009/10 year, all new, old or historical sites were visited to determine the presence or absence of rooks. Aerial surveys were mostly utilised. Ground surveys cannot tell us the state of a rookery (state of incubation). Knowing the state of incubation is important as it assists with planning the right time to carry out control.

A record is kept of all nests baited at each breeding rookery. The total number of nests baited is used to estimate the regions total rook population. Based on years of experience in our region, one nest is equivalent to four and a half rooks.

The aerial survey, combined with calls for rook sightings from the public identified the presence of seven new rookeries and the reactivation of five old rookeries. This was a positive outcome.

Once again GW prepared media material that was published in the Wairarapa Midweek newspaper urging the public to report sightings of rooks or rookeries. We also ran a month-long advertisement on local radio that carried the same theme. This proved to be quite successful and as a result good information was received and followed up on.



Means of achievement

(vi) Support appropriate research initiatives, including biological control should it become available.

Actual Performance

There were no opportunities to be involved in meaningful research initiatives or biological control. Nor does there seem much likelihood of this occurring in the near future.

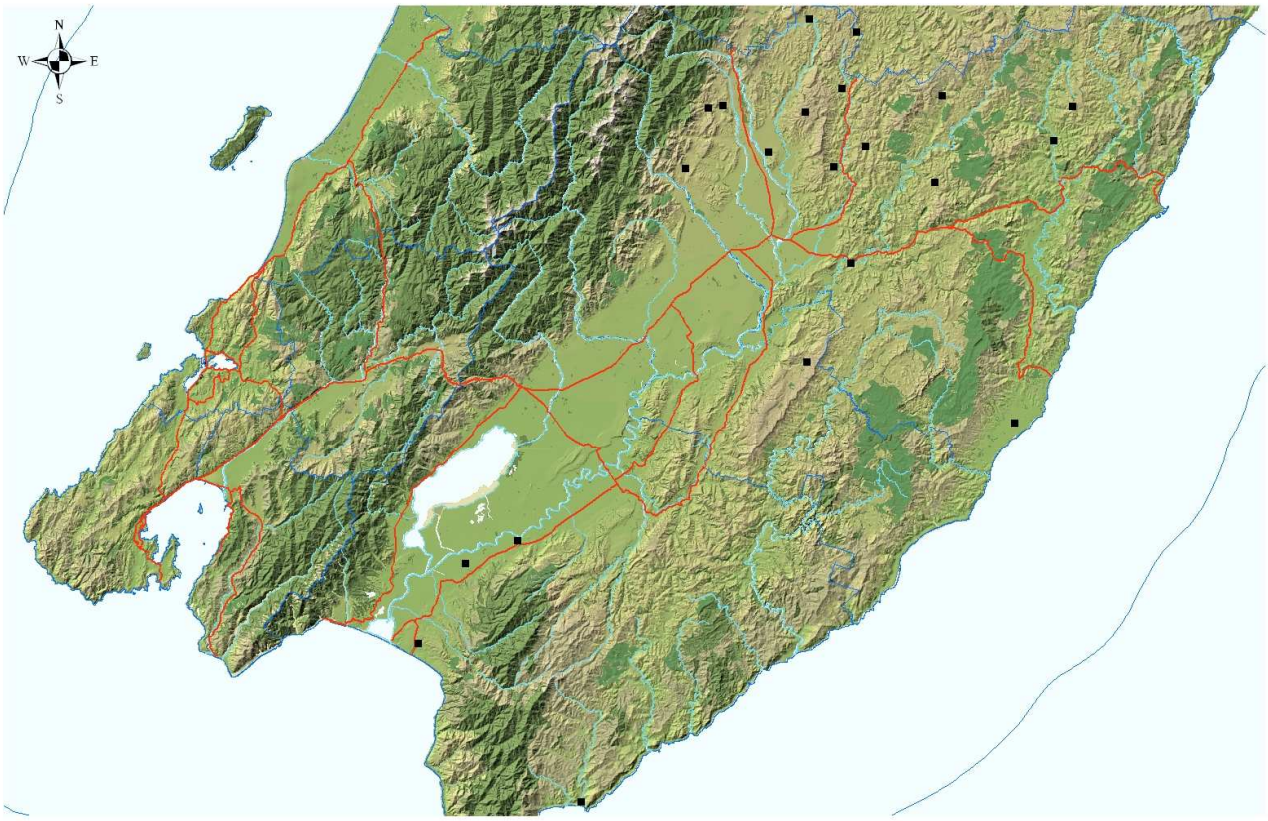
Means of achievement

(vii) Ensure compliance with the Strategy rules in order to achieve the Strategy objectives.

Actual Performance

A display about rooks was presented at both the Wairarapa and Masterton Agricultural and Pastoral shows and also at the Otaki field day. Information about rooks was freely available to the public.

Landowners with rookeries are constantly reminded that rooks are both shy and cunning and that poorly conducted attempts at control can lead to rookery fragmentation and dispersal over a wider area. Rooks may become bait shy as well. When gaining landowner permission to treat rook nests, landowners were reminded of the dangers of shooting or scaring rooks.



Rookery Locations 2009

1:369,137

Means of achievement

(viii) Encourage Horizons Regional Council to actively pursue management of rooks within their region that complements GW's Rook Containment programme.

Actual Performance

Horizons Regional Council was actively involved with aerial nest baiting in the 2009/10 year. Both GW and Horizons were involved in the annual joint nest baiting programme on either side of the regional boundary that was designed to stem the southward migration of rooks to the Wairarapa.

Means of achievement

(ix) Annually inspect pet shops and rook keepers for the sale of rooks.

Actual Performance

Inspections of pet shops and veterinarians were undertaken in conjunction with visits to plant nurseries. There were no reports of rooks being available for sale.

3.3 Suppression species - rabbits

Aim: **To minimise the adverse impacts of feral rabbits throughout the region at a cost of $114,240**

Annual Cost: **The cost of rabbit management (surveys, service delivery, biological control, compliance, education and research) for the region was $106,459**

Means of achievement

(i) Undertake direct control by service delivery to control rabbits on riverbeds, esplanades or similar public commons to ensure that rabbits do not exceed Level 5 of the Modified McLean Scale.

Actual Performance

Eastern Zone - Wairarapa

Monitoring of the rabbit prone Tauherenikau River and eight adjacent properties in the Eastern Zone did not disclose any areas of rabbit densities above level 5. Level 5 was the highest level recorded on the Tauherenikau River in one localised “hot spot” but generally level 3 was the infestation level recorded over most of that river system. Cross blading of the river channel to control water flow has removed much of the old rabbit habitat. The surveyed areas on the eight adjoining properties disclosed levels between 2 and 4 on the Modified McLean Scale.

Rabbits have continued to be an amenity nuisance around the Riversdale Beach and Castlepoint resorts on the East Coast but did not reach the trigger level that required the regulatory intervention of GW.

Western Zone – Wellington

No areas scored 5 or above on the Modified McLean scale. Most rabbit work that is undertaken now is to protect new plantings in re-vegetation projects by Care Groups, councils and private land owners.

Pindone carrot is still used extensively, along with night shooting and fumigating. A silenced .410 shot gun was purchased this year and used to good effect. It has given staff more confidence shooting in urban areas and other sites where ricochets are a possibility such as on hard or rocky ground.

Means of achievement

(ii) Ensure compliance with the Strategy rules in order to achieve the Strategy objectives.

Actual Performance

Eastern Zone - Wairarapa

There were two localised rabbit infestations recorded over Level 5 on the Modified McLean Scale but there were no investigations required for breaches of the Strategy rules for rabbits in the Eastern Zone.

Western Zone – Wellington

There were no rabbit infestation areas recorded over Level 5 on the Modified McLean Scale and there were no investigations required for breaches of the Strategy rules for rabbits.

Means of achievement

(iii) Survey land in high to extreme rabbit prone areas to determine the extent of rabbit infestation.

Actual Performance

Eastern Zone - Wairarapa

During the 2009/10 year, properties were selected at random for surveillance that had previously had a history of high rabbit numbers. These properties tended to be a cross- section from the Tararua Ranges to the East Coast and provided a general snapshot of the current rabbit trend for the region.

From the 11 properties that were inspected during daylight the infestation level ranged from Level 2-3 up to Level 3-4 on nine of these properties. There was one other farm property that had portions of it scored at 5-6 and a Masterton District Council pine block adjacent to the Waingawa River that scored 4-5. There was no enforcement directed at these land owners as their rabbits were not impacting on adjoining properties. In most cases recreational shooters were operating on these high density properties. Level 5 on the Modified McLean Scale is the trigger for remedial control to take place.

The last blood sampling of Wairarapa rabbits for calicivirus antibodies was in April 2008 and disclosed immunity levels of 57%. This has to be a heartening sign that the calicivirus will continue to cycle and cull rabbits to low levels for some time yet. No further blood sampling of rabbits was carried out in Wairarapa this year due mainly to the difficulty and expense of collecting enough rabbits required to extrapolate robust statistical data on present immunity levels.

Western Zone – Wellington

The rabbit prone areas of the Kapiti coast were monitored on 20th May 2010 and again showed that rabbits continue to be present throughout but not in large numbers. Hot spots still exist but seem to be mainly around park areas, lifestyle blocks and smaller private properties with good rabbit cover and overgrazed pasture or large expanses of lawns.

Modified McLean Scale

Scale	Rabbit Infestation
1	No sign seen. No rabbits seen.
2	Very infrequent sign seen. Unlikely to see rabbits.
3	Sign infrequent with faecal heaps more than 10 metres apart. Odd rabbit may be seen.
4	Sign frequent with some faecal heaps more than 5 metres apart, but less than 10 metres apart. Groups of rabbits may be seen.
5	Sign very frequent with faecal heaps less than 5 metres apart in pockets. Rabbits spreading.
6	Sign very frequent with faecal heaps less than 5 metres apart over the whole area. Rabbits may be seen over whole area.
7	Sign very frequent with 2-3 faecal heaps often less than 5 metres apart over the whole area. Rabbits may be seen in large numbers over the whole area.
8	Sign very frequent with 3 or more faecal heaps less than 5 metres apart over the whole area. Rabbits likely to be seen in large numbers over the whole area.

Means of achievement

(iv) Make occupiers aware of their responsibilities for rabbit control.

Actual Performance

There was no requirement for letters to be forwarded to occupiers reminding them of their responsibilities under the strategy because of the generally low rabbit densities recorded during surveillance of rabbit prone land.

Means of achievement

(v) Provide information and publicity to enhance awareness of the threat rabbits pose to the region.

Actual Performance

GW has electronic and printed information available to assist occupiers with self help rabbit control. These are freely available on the GW website, at GW offices and at promotional field events.

Several public forums were attended during the year. These forums had displays with advice and educational material freely available on rabbit management techniques. GW staff were present to provide technical support.

Means of achievement

(vi) Release biological control agents for the control of feral rabbits when appropriate.

Actual Performance

GW did not reintroduce the Rabbit Calicivirus Disease (RCD) virus in the 2009/10 period. The virus continues to cycle naturally in some areas, but resistance remains relatively high in the sites that were assessed.

Means of achievement

(vii) Support research initiatives including biological control.

Actual Performance

The Ministry of Agriculture and Forestry Biosecurity New Zealand produced a report in October 2009 – "The Current State of Rabbit Management in New Zealand". GW provided monitoring and control data to be included in the document.

Means of achievement

(viii) Annually inspect pet shops to prevent the sale of feral rabbits.

Actual Performance

Pest Animals staff conducted impromptu visits to pet shops across the region during the year. All retailers were referred to Section 52 and 53 of the Biosecurity Act 1993 reminding them that it is an offence to hold for sale animals and plants identified in the Strategy document.

Regional RCD status

Western Zone RCD blood sample results:

Blood sampling of rabbits was undertaken by Western Zone Biosecurity staff between March and June 2010. The recommended number of rabbits for RCD testing from one site is 30 but this was not attained as the rabbit populations were not high enough. To have so few rabbits to sample indicated that rabbits are still being suppressed by the virus in most areas across the region.

Immunity was high again in Peka Peka and higher still in some of the areas in Wellington City environs where night shooting has been carried out regularly throughout the year. These pockets of rabbits within the city reserves tend to persist as really efficient control is hard to achieve.

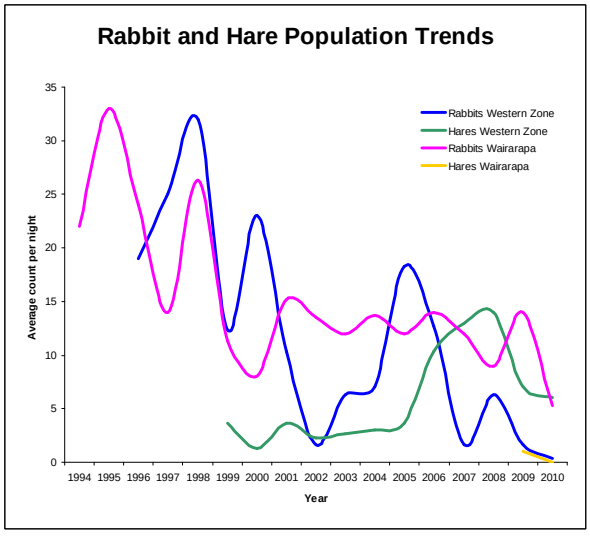
Property/Occupier	Grand Total	% Adults Positive	% Adults Negative
Ames Street	2	50	50
Ata Park	1	0	100
Duggan Park	13	25	75
GNS Lower Hutt	2	0	100
Karori Cemetry	8	50	50
Kapiti Golf Course	7	0	100
Miramar	1	0	100
Newtown	4	0	100
Petone	1	0	100
Red Rocks	2	0	100
Trotter – Peka Peka	14	71	29
Winstone Quarry	3	33	67
Grand Total:	**58**	**33%**	**67%**

Regional Analysis	Total	%
Adult males sampled	22	40
Adult females sampled	33	60
Total adults sampled	55	86
Adult males positive	9	41
Adult males negative	13	59
Adult females positive	9	27
Adult females negative	24	73
Total adults positive	**18**	**33**
Total adults negative	**37**	**67**

3.4 Rabbit trend monitoring

Rabbit and hare population trends

Rabbit and hare trend night counts are conducted annually at two sites; Queen Elizabeth II Regional Park on the Kapiti Coast (Western Zone), and on the Tora Coast in the Wairarapa (Eastern Zone). Counts are conducted over three fine nights in May. The aim of the monitoring is to determine the trend of population abundance in the absence of control at these sites.



Rabbits in the Western Zone have remained low over the past few years, with hares appearing to have increased slightly. Rabbit numbers in the Eastern Zone appear to have stabilised since around 1999/2000. Hares have only been included in the counts since 2009.

3.5 Site-Led species – human health – magpies

Aim: **To manage magpies to minimise adverse environmental and human health impacts in the Wellington region at a cost of $44,800**

Annual Cost: **The cost of magpie management to minimise adverse environmental and health impacts for the region was $49,805**

Means of achievement

(i) Undertake direct control by service delivery of magpies where there is known to be a threat of injury to members of the public or complaint(s) are made to that effect within 10 working days.

Actual Performance

There were 14 urgent complaints logged in the Wairarapa (Eastern Zone), and seven in the Wellington region regarding attacking magpies. All were attended to before the 10 day deadline.

Means of achievement

(ii) Respond to landowners wanting to undertake magpie control within 10 working days of receiving a request for information and/or assistance.

Actual Performance

Sixty-seven nuisance calls were received by staff in the Wairarapa (Eastern Zone), and 42 in the Western Zone. All calls in both the Wairarapa and Wellington Zone had response times within 10 days. All requests for information or assistance from the public are entered onto our database and every effort is made to attend to these within 10 working days. A phone call or personal visit is made to clients wanting information or assistance. When there are no traps in stock the client is entered onto a waiting list until a trap becomes available. As traps become available, staff deliver these and demonstrates best practice trapping techniques to maximise catch results.

3.6 Site-Led species – human health – wasps

Aim: **To minimise the adverse human health and environmental impacts of wasps at selected sites at a cost of $5,600**

Annual Cost: **The cost of wasp management to minimise the adverse human health and environmental impacts for the region was $4,161**

Means of achievement

(i) Provide advice and education to occupiers wanting to undertake wasp control.

Actual Performance

Printed and electronic information is available on how to identify and control wasp infestations. The GW website now has additional information on wasp identification and control.

Means of achievement

(ii) Provide a referral service to landowners/occupiers who require wasp control.

Actual Performance

Over 150 wasp nests were reported to GW staff over the year, considerably less than the past two seasons. All members of the public who contacted Biosecurity were given advice on how to manage the problem nests, or referred to the relevant Territorial Local Authority (TLA) or a private pest control contractor.

Means of achievement

(iii) Support research initiatives into the human health impact of wasps in the Wellington region.

Actual Performance

There were no opportunities to be involved in meaningful research initiatives or biological control.

3.7 Site-Led Mt Bruce (Pukaha) predator buffer

Aim: **Complement the native flora and fauna restoration programme undertaken by the Department of Conservation, Rangitane o Wairarapa and the National Wildlife Trust at the Mount Bruce Scenic Reserve at a cost of $40,320**

Annual Cost: **The cost for the predator control programme within the buffer for the 2009/10 financial year was $51,133**

The main objective of the Pukaha predator buffer is to reduce and maintain all predator numbers at very low levels within the buffer area, and to reduce re-infestation by predators of the Mt Bruce Reserve. These control operations benefit a wide range of flora and fauna within the reserve, with a particular focus on helping the released endangered native bird species of kaka, kokako and kiwi to live and breed with a reduced threat of predation. The targeted predator species include possums, cats, ferrets, stoats, weasels, hedgehogs, ship and Norway rats.

Control is undertaken by kill-trapping and laying toxic baits in bait stations. The predator traps are the Fenn No. 4 mustelid trap and the Timms trap. The Kilmore bait stations are filled with brodifacoum 'Pestoff' possum and rat pellets. The servicing of all equipment within the 2,223ha Pukaha predator control buffer was completed as a prescriptive service contract carried out by

GW BioWorks Business Unit. Servicing occurred regularly at five weekly intervals, with reports of kills and bait-take supplied to the Biosecurity Department after each service round. Trapping accounted for 63 cats, 26 ferrets, 267 hedgehogs and 240 rats during the 2009/10 year, with a further unknown number of possums and rats controlled by the brodifacoum baiting.

Analysis of various aspects of the control programme was undertaken during the service period. These included the effectiveness of various trap baits, efficiency of individual operators and the locations where predators were caught. A stock-take of equipment and a review of the control programme were also completed.

Through the months of July to August 2010, 12 recently released kiwis were found dead through predation within the Pukaha Reserve. Following this incident, all agencies involved in the programme reviewed their control strategies. The operations of GW were found to follow best practice, with regular servicing of the control equipment occurring. The review recommended the updating of the Fenn trap to the more modern DOC 250 trap when resources allow.

3.8 Site-Led – biodiversity – feral and unwanted cats

Aim: **Minimise the biodiversity impact of feral and unwanted cats at a cost of $28,000**

Annual cost: **The cost for the management and publicity of feral and unwanted cats as a threat to biodiversity for the 2009/10 year was $25,679**

Means of achievement

(i) Provide information and publicity to enhance public awareness of the threat feral and unwanted cats pose to the native fauna of the region.

Actual Performance

Printed and electronic information is available on the threat that feral and unwanted cats pose to the biodiversity of the Wellington region. The GW website now has additional information on the management and control of feral and unwanted cats.

Means of achievement

(ii) Undertake direct control of feral and unwanted cats by service delivery as part of the integrated pest management of Key Native Ecosystems (KNEs) and other selected sites.

Actual Performance

Feral and unwanted cats are actively managed as a predator across 11,306ha in 27 KNE sites within the Wellington region. These sites are predominantly rural based, as there are issues controlling cats in urban areas because of the high number of domestic cats. GW also works in conjunction with Territorial Local

Authorities and private landowners to manage feral and unwanted cat populations. Feral cats are the most persistent predator species under ongoing control, with consistent numbers captured in KNE management sites. Abandoned domestic cats continue to be a problem within the region.

Means of achievement

(iii) Provide financial assistance to domestic cat desexing programmes in partnership with select organisations and businesses.

Actual Performance

The Wairarapa desexing campaigns were again conducted during April and May with GW providing financial support to subsidise the cost to cat owners and to share some responsibility for advertising and promotion. One programme was organised by Vetcare Ltd and the other by the Wairarapa SPCA, with the support of local veterinarians.

A total of 359 cats were treated at an average cost to GW of $32.00 for 2009/10. This number of treated cats was a slight increase on previous campaigns in the Wairarapa. Some of the success of this campaign is because the Wairarapa SPCA and Vetcare Ltd utilise the media effectively and incorporate school visits to promote animal welfare issues.

GW continues to support the SPCA led 'adopt-a-pet' programme, which establishes de-sexed cats as a domestic pet, avoiding further breeding cats in the community.

Means of achievement

(iv) Work with communities to remove populations of stray or unwanted cats.

Actual Performance

Abandoned and feral cats are a threat to our native birds and lizards and left uncontrolled impact adversely on GW's biodiversity enhancement programmes. Where unwanted cat populations are established that threaten our KNE programme, every effort is made to disestablish these colonies. There is a growing trend from private organisations and individuals to maintain colonies of de-sexed cats which are fostered while remaining in the wild. GW is strongly opposed to this practice as these de-sexed populations continue to threaten the native wildlife of the region.

3.9 Site-Led – biodiversity – possum

Aim: **To minimise the adverse impacts of possums in areas of ecological significance and maintain accrued biodiversity and economic gains in the Wellington region at a cost of $55,550**

Annual cost: **The cost for minimising the adverse impacts of possums in ecologically significant areas and maintaining current biodiversity and economic gains in the Wellington region was $87,581**

Means of achievement

(i) Undertake direct control by service delivery in sites of ecological significance in agreement with the landowner/occupier.

Actual Performance

Ongoing support is provided to 10 covenanted sites located in the Porirua and Kapiti Districts where there is no Bovine Tb possum control programme. GW works in conjunction with the landowners who provide labour for the on-going possum control. Not all of these sites are part of the KNE programme, but they are important to possum management for the wider Wellington region.

GW Biosecurity contributes to the labour component of the maintenance of the Wainuiomata Mainland Island. This tract of old growth native forest is some of the best remaining lowland rimu-podocarp forest in the North Island.

Means of achievement

(ii) Support the establishment of new possum control programmes, in collaboration with landowners, in areas which have historically received bovine Tb vector control and now meet the Animal Health Board criteria to be declared Tb free.

Actual Performance

The proposed Regional Possum and Predator Programme for the Wellington region was delayed because of the national economic situation. A reduced portion of the proposed control area is scheduled to begin in the 2010/11 financial year.

Means of achievement

(iii) Provide information and publicity to enhance public awareness of the threat possums pose to the region.

Actual Performance

Printed and electronic information is available on the threat that possums pose to the biodiversity and agriculture of the Wellington region. The GW website now has been updated with additional information on the management and control of possums.

Means of achievement

(iv) Provide a referral or cost recovery service to landowners/occupiers who require possum control.

Actual Performance

GW provides assistance and advice on the management of possums to individual property owners, usually in urban or peri-urban situations. Assistance is usually with the intent that the occupier can self manage any future possum problems. Nuisance possums can often be managed in conjunction with or as an extension to our existing possum control areas. Some cost recovery is undertaken where appropriate.

Means of achievement

(v) Support research initiatives including biological control.

Actual Performance

Inspections of pet shops and veterinarians were undertaken in conjunction with visits to plant nurseries. There were no reports of possums being available for sale.

3.10 Site-Led – biodiversity species
Feral deer, feral goats, feral pigs, gambusia and Koi carp

Aim: **To minimise the adverse environmental impacts of the Site-Led – biodiversity species in sites actively managed for ecological health at a cost of $19,600**

Annual cost: **The annual cost for minimising the environmental impacts of the Site-Led – biodiversity species in special sites was $23,826**

Means of achievement

(i) Reduce densities of select Site-Led – biodiversity species in KNE's and TLA reserves.

Actual Performance

GW Biosecurity assists KNE landowners and TLA's with the management of site-led biodiversity species where required. GW staff have undertaken urban feral goat and feral pig control in several metropolitan sites where these animals were damaging private property adjacent to KNE reserve areas. Problem sites usually occur where residential properties border on to large tracts of reserve or farmland where feral goats or feral pigs are prevalent.

Means of achievement

(ii) Provide information and publicity to enhance public awareness of the threat Site-Led biodiversity species pose to the region.

Actual Performance

Printed and electronic information is available on the threat that these Site-Led biodiversity species pose to the natural environment and agriculture of the Wellington region. The GW website now has additional information on the management and control of these species.

3.11 Site-Led - Key Native Ecosystems, Reserves and Forest Health

Aim: To protect indigenous biodiversity in a comprehensive selection of Key Native Ecosystems and reserves at a cost of $561,120

Annual Cost: The cost to achieve a measurable improvement in the ecological health and diversity of Key Native Ecosystems and reserves through pest animal control was $462,429

Means of achievement

(i) Ensure KNEs are legally protected into perpetuity.

Actual Performance

All of the KNEs treated during 2009/10 were legally protected (TLA - reserves, QE II covenants, or at the very least, contained legally protected sites within the management area).

Means of achievement

(ii) Establish and implement integrated pest management plans for all KNEs.

Actual Performance

All Wairarapa sites have integrated management regimes. All sites in the Western Zone are set up to control rats and possums with mustelid control continuing to be added to specific sites as funds become available. A total of 325 DOC 200 kill traps were added into the Western Zone KNE's. Priority was given to sites where rare birds immigrating from Zealandia (the Karori Wildlife Sanctuary) are establishing themselves, but is now extending to reserves in the outer areas.

Means of achievement

(iii) Undertake direct control by service delivery of pests identified in the management plan for each KNE.

Actual Performance

Pest animal operations were conducted in 89 sites, 34 on private land KNE and 55 on TLA parks and reserves, totalling over 20,000ha within the region. All territorial reserve work was jointly funded with the relevant authorities. Updating our records using Global Positioning Units (GPS) has proved a worthwhile investment and ensures exact locations of hardware and warning

signs are available when needed. This has aided servicing by accurately pinpointing bait station sites, routes and warning sign locations. GPS information can be supplied with confidence to other parties in the interests of risk management. Institutional knowledge for each site is now not so vital.

Means of achievement

(iv) Facilitate the involvement of community groups where appropriate.

Actual Performance

GW has been involved with community groups for many years. This involvement continued this year with over 20 groups being involved.

Means of achievement

(v) Coordinate site management with other biodiversity initiatives where possible.

Actual Performance

Pest animal and plant control is being undertaken concurrently with care groups to assist them achieve a range of ecological based objectives. This continues in a wide range of reserves and KNEs across the region. Refer to Section 12.12.

Means of achievement

(vi) Monitor site recovery using a range of ecological indicators.

Actual Performance

A wide range of ecological indicators are used to monitor the health of various sites such as rodent monitoring, invertebrate monitoring, photo points and native bird counts. Refer to Sections 12.7 and 12.11.

Means of achievement

(vii) Provide public education and advice to foster biodiversity management outside formal KNE programme areas.

Actual Performance

Landowners, both large and small, are often keen to preserve or regenerate areas of native bush or wetland on their properties. GW provides informative literature, attends forums and field days with ecological themes and meets with groups or individuals to convey information. Refer to Section 12.2.

Means of achievement

(viii) Maintain holistic management in existing KNE areas.

Actual Performance

All KNE and other biodiversity support programmes that have had possum and/or predator control undertaken by GW are being maintained. More commitment is given to maintaining existing programmes, than taking on new works. The only new projects undertaken have been sole-funded by external agencies. Most areas are maintained on a three monthly cycle by GW staff or service providers. Service providers have been contracted to maintain most of the KNEs in Wellington, Porirua and the Kapiti Coast for the three monthly bait station fills. In the Wairarapa, contractors service the Waihora, Sulphur Wells and Mount Bruce (Pukaha) Buffer on a monthly basis as predators in addition to possums and rats are being targeted.

Means of achievement

(ix) Where KNE's are identified on TLA land, seek funding from the relevant authority to form financial partnerships.

Actual Performance

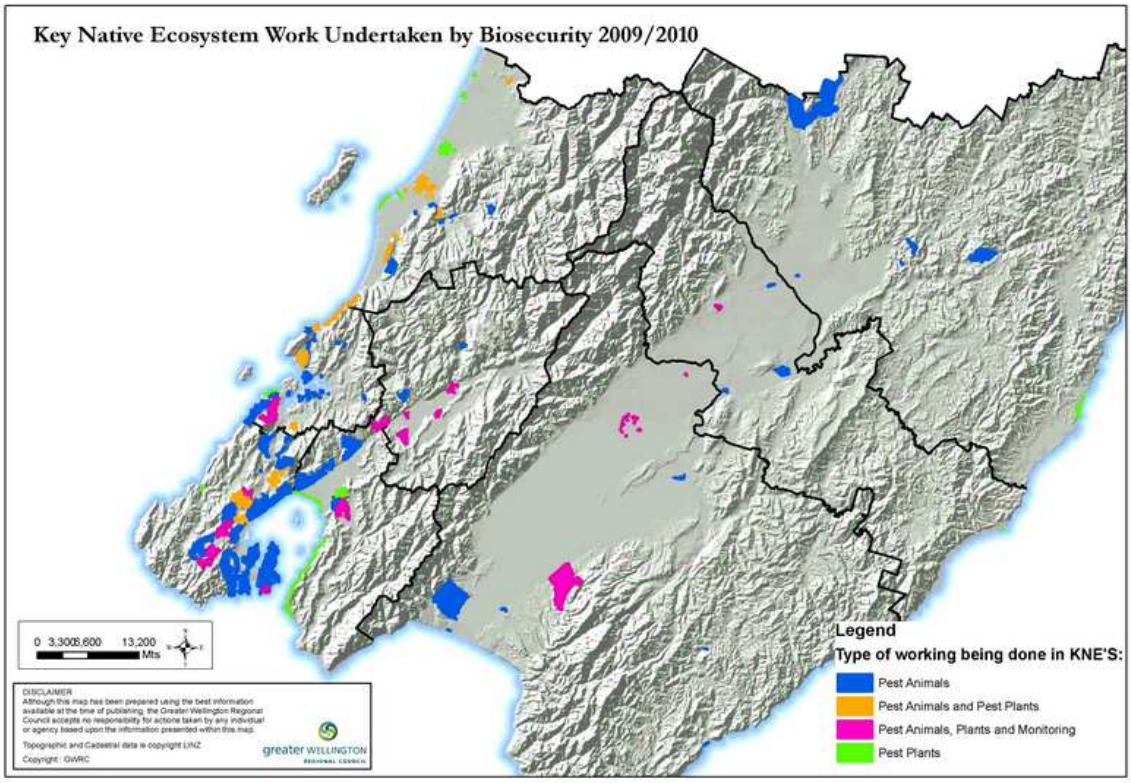
GW has sought to maintain an excellent rapport with all of the regional TLAs on matters concerning pest management.

A formal pest management programme has been agreed with Wellington, Lower Hutt, Upper Hutt and Porirua City Councils and with the Kapiti Coast District Council. The direct costs for work undertaken on their land are equally shared between GW and the local authority.

The work programmes are agreed between the parties and regular liaison is maintained. The TLAs were invoiced monthly for their share of costs and contributed $175,900 (from an original budget of $172,300).

A Memorandum of Understanding (MOU) is prepared and agreed annually between GW and the western TLAs. The parties agree to support biodiversity and optimise ecological health within the relevant territories.

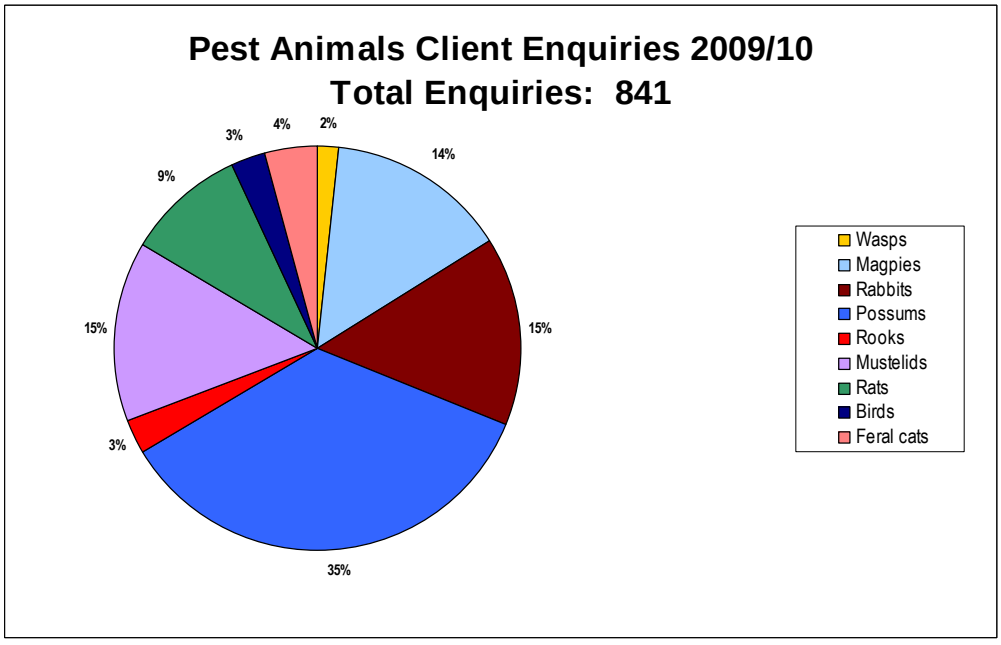
Formal programmes have not been agreed with the Wairarapa District Councils for pest animal control mainly due to the fact they don't own much land with high biodiversity value.



4. Client enquiries 2009/10

Total enquiries: 841

The proficient servicing of clients is a significant theme throughout the Operational Plan. To enable this to be measured a client response database is maintained. The database supplies historical information on an area or pest. It enables us to manage efficiently, plan the level of control required and assess effectiveness of current control methods.



4.1 Retailer inspections

43 retailers were inspected in the 2009/10 year.

Wairarapa

Seven local pet outlets, vet clinics, and the SPCA were visited in the Wairarapa. Most outlets dealt only with kittens and puppies. No prohibited species were identified as being traded.

Western Zone

Thirty-six establishments were visited over two and a half days in conjunction with pest plants. These included nursery and plant suppliers, pet shops, vets and the SPCA's.

5. Financial summary

The year end result for pest animal management under the RPMS was an operating surplus of $6,900 (0.4%). Revenue was up by $117,200 (7.42%) with operating expenditure up by $110,300 (6.98%).

	$ (000's)
Rates and Levies	1,254.8
External Revenue	184.6
Internal Revenue	256.5
Total Operating Revenue	**1,695.8**
Total Direct Expenditure	**1,246.9**
Divisional Overheads	442.0
Total Operating Expenditure	**1,688.9**
Surplus	(6.9)

Part Two

Pest Plants

6. Overview

The pest plants section continues to seek collaborative projects with a number of external agencies and neighbouring regions. The majority of joint agency initiatives are in the biodiversity and biological control area. Other areas of joint action include developing response plans and management systems with national, regional and scientific agencies. These combined outcomes far exceed that which our internal team could achieve alone. The combined outputs benefit GW by improving the skill set of Biosecurity Officers and providing support systems that enable efficient use of our resources.

Performance improvements in key areas of the Strategy have been achieved through individual and specialist work plans. These plans consider annual and rolling 10-year targets. The plans outline each Strategy activity in detail. The plans focus on achieving key outcomes that are measurable and reportable within the Strategy. The documents set the standard to measure individual and section performance. These plans are reviewed annually to maintain a rolling 10-year vision.

During the 2009/10 year all required Strategy activities were completed, with performance improved in all key areas. Control trends showed a decline in target species and the data collection and reporting processes have improved. There is a better suite of reports to compare progress against the plan. These reports also feed into council and national report frameworks, and give each individual Territorial Authority (TA) feedback on pest control and biodiversity activity.

7. Species led programmes

7.1 Surveillance species

Aim: **To determine the distribution and means of control for Regional Surveillance pest plants within the Wellington region at a cost of $294,032**

Annual cost: **The cost of managing Surveillance plants throughout the region during 2009/10 was $300,020**

Means of achievement

(i) Annually inspect all plant outlets and markets within the region for the sale and/or propagation of Regional Surveillance pest plants.

Actual Performance

NPPA Inspections

Staff inspected all known plant outlets during the year. Some outlets had closed and a few new ones were found. This information was entered on the MAF BNZ National Pest Plant Accord (NPPA) database. All activity was reported to MAF BNZ. In total 155 known outlets were inspected in the region this year.

Markets have been identified as an area of risk due to the growing attendance of amateur growers. Stallholders have generally been well organised. Information has been given to all new stallholders and contact details gathered. A total of 14 markets were visited regularly during the year.

MAF BNZ notified GW of three people, not listed in the MAF NPPA database, selling banned species. Their properties were inspected and no plants were found at any of the three sites. The persons involved were provided with all relevant NPPA literature, cautioned with regard to their activities and TradeMe withdrew their auctions.

Means of achievement

(ii) Report outcomes of investigations into new incursions or species known to be established in the region.

Actual Performance

All of the current known Surveillance species sites were inspected and mapped. These sites are the next priority for delimiting surveys. The first stage was to visit each site and verify that the species record was accurate and the infestation size verified. Delimit survey plans were then designed and surveying will commence when all Total Control sites have been delimited.

The Pest Plant Section is researching and assessing the appropriate response processes required to competently manage each species. This includes supporting national activity for species not in the region and developing a management response for each species.

Means of achievement

(iii) Identify new sites of Regional Surveillance pest plants by GW Biosecurity Officers, the public, or through the Regional Surveillance pest plant programme

Actual Performance

A total of 3,670 delimit surveys of Total Control sites were completed. This resulted in 34 new surveillance species sites being located for future delimiting.

The species located were:

- Bomarea 22
- Chocolate vine 10
- Asiatic knotweed 2

These were added to the current records of known surveillance species in the region. The current status is shown in the following table.

Surveillance species records		
Plant Type Name	**District**	**Count of Infestations**
African fountain grass	Kapiti Coast South Wairarapa	1 1 **2**
Asiatic knotweed	South Wairarapa Upper Hutt Wellington	1 1 25 **27**
Australian sedge	Kapiti Coast	1 **1**
Bomarea	Lower Hutt Kapiti Coast Wellington City	19 7 19 **45**
Chilean flame creeper	Carterton Masterton Upper Hutt City	7 12 3 **22**
Chocolate vine	Carterton Lower Hutt Kapiti Masterton Porirua South Wairarapa Upper Hutt Wellington	25 21 21 27 4 18 27 31 **174**
Nassella tussock	Kapiti Coast Porirua	2 1 **3**
Purple loosestrife	Carterton Kapiti Coast	1 5 **6**
Senegal tea	Kapiti Coast Upper Hutt	3 1 **4**
Spartina	Lower Hutt South Wairarapa	2 1 **3**
White edged nightshade	Carterton Masterton	2 1 **3**
Total:		**290**

Means of achievement

(iv) Undertake a control trial programme on selected Regional Surveillance pest plants within the region.

Actual Performance

Trials and investigations

GW staff undertook a number of trials to assess the effectiveness of various control methods for the Surveillance species.

a) Spartina

A known spartina site in the lower reaches of the Waiwhetu Stream at the eastern side of Petone was removed during GW Flood Protection upgrade work. Staff ensured that sufficient material was removed and taken to the landfill.

The other known site in the region is located in the Wairarapa at Lake Onoke on the outlet of the Ruamahanga River. The GW Flood Protection team have been spraying this during normal annual work activity and staff are monitoring the infestation decline. Future trial work will consist of two chemical applications within a short time span. The infestation size has declined annually and the new treatment aims to hasten this decline.

b) Chocolate vine

This species was sold by nurseries in the region until selected for inclusion in the NPPA list. It is banned from sale. Chemical control of this species is not well known. The aim of the trial is now to assess viable control options.

The trial has completed control for two seasons. The selected chemicals Tordon Brushkiller, Grazon and Roundup Transorb all controlled this species successfully. This gives staff a range of control options dependant on the proximity of other species in the affected sites.

c) Bomarea

Chemical control of this species is known to be very difficult. Currently Hutt City Council (HCC) targets this species for Total Control. The trial aims to assess viable control options, and has run for two seasons. To date none of the three chemicals; Tordon Brushkiller, Grazon and Roundup Transorb have provided effective control. Bomarea plants have extensive below ground vegetative reserves and the chemicals only kill foliage above ground meaning recovery is rapid. A future option is to trial the effectiveness of physical removal.

d) Asiatic knotweed

Chemical control of this species proved to be very difficult. Asiatic knotweed has very active vegetative growth below the ground, with foliage growing from tubers annually. The aim of the trial was to assess viable control options for this species. Wellington City Council is currently treating known infestations.

The trial was to test and compare the effectiveness of control by Grazon, Escort and physical removal. The physical removal was initially successful, but outlier plants beyond the excavation reinfested the area within two seasons. If the infestation can be removed in entirety then this method would be successful. Grazon provided the best chemical control, but application required very careful control during application. Escort applied to the foliage achieved successful control in the second year. The success of the chemical control is gauged in spring.

Means of achievement

(v) Use biological control agents where appropriate, and support relevant biological control research initiatives.

Actual Performance

GW continues to support the National Biological Control Collective and currently contributes $50,000 to collective research funds totalling $650,000. Contributions into research focus on the research priorities that are decided by the funding contributors. A number of other regions have widespread infestations of species that GW ranks for surveillance (e.g. nassella tussock, Chilean needle grass). Supporting the allocation of funds to target species not yet in the region is a long term strategy to reduce the risk of these organisms entering the region.

For more information refer to Section 9 'Biological Control'.

Means of achievement

(vi) Undertake training and research to be conversant with the identification and biological characteristics of all Regional Surveillance pest plants.

Actual Performance

During the year staff attended the NZ Biosecurity Institute (NZBI) National Education & Training Seminar conference in Blenheim. During the three days they were able to gain valuable first hand knowledge of Chilean needle grass and nassella tussock as well as invasive climbers present in the upper South Island. Staff also attended the annual Lower North Island NZBI meeting and field day hosted by Horizons Regional Council in Ohakune. Staff viewed tutsan and heather biological control sites as well as other pest control initiatives.

The team organised a visit to Hawke's Bay for a training day which was run by Biosecurity staff. This focused on plant identification of surveillance species that are established within the Hawke's Bay. The species of interest to staff were Chilean needle grass, apple of Sodom, phragmites and cotton thistle. This was a valuable opportunity to view these species in the wild, helping the team's identification skills.

Means of achievement

(vii) Provide information and publicity to enhance public awareness of the threat posed by Regional Surveillance pest plants to the region.

Actual Performance

Refer to Section 10 'Public Awareness'.

7.2 Total control species

Aim: To determine the distribution and means of control for Regional Surveillance pest plants within the Wellington region at a cost of $389,317

Annual cost: The cost of managing Total Control plants throughout the region during 2009/10 was $366,900

Means of achievement

(i) Identify new sites of Total Control species through incidental reports by GW Biosecurity Officers, the public, or through the Regional Surveillance pest plant programme delimiting known infestation sites.

Actual Performance

Delimiting of Total Control Sites

Staff continued the priority task of delimiting all known Total Control sites. The aim was to complete the project during the year. Discoveries of new sites required continual review of the delimit plan design. The overall result of this project is delimiting to 99.2% of the current total of 1,205 sites. The project has been in progress for four years.

This year a total of 3,670 properties were inspected by all methods. This resulted in 53 new sites being located. Many of these properties were close together so several areas overlapped. New sites were located within the original survey area, which triggered a review of the delimit plan with additional properties added. The current additional survey work is covering less area, as recent (less than three years) survey areas are not revisited. Some additional sites were inspected following reports from the public.

The chart below shows the progress delimiting Total Control sites this year

Activity	Madeira vine	Blue passion flower	Moth plant	Woolly nightshade	Climbing spindleberry	African feather grass	Totals
TC delimits July 09	15	8	5	2	7	9	46
New TC sites	29	8	1	7	7	1	53
TC delimits completed	41	12	6	9	11	10	89
TC delimits to do June10	3	4	0	0	3	0	10

Note:

- Each number represents a property and while 1 delimit survey may represent several sites the only way to evenly represent progress is individual sites.
- Sites were located by all methods, e.g. delimiting survey; sites located by staff, public, other weed teams, weed swaps.
- A total of 42 new sites were located. Species breakdown was 5 blue passionflower, 4 climbing spindleberry, 5 eelgrass, 23 Madeira vine and 5 woolly nightshade

The areas inspected often have a mix of target species, and the surveys generally discover species other than those targeted by the survey. These areas are generally older urban areas with well-established gardens, or modern subdivisions on the west coast that city dwellers have moved to. These residents have sometimes moved pest plants with them.

In addition 34 Surveillance species were located for future delimiting, 22 bomarea, 10 chocolate vine and 2 Asiatic knotweed sites.

The delimiting surveys included residential properties throughout the urban areas west of the Rimutaka's over a combined property area of 549ha.

Discovery rate of Total Control sites for entire delimit project

Year End Date	Properties surveyed	Total Control species found	%
June 2008	1,302	49	3.8 %
June 2009	6,409	54	.9 %
June 2010	3,670	42	1.1%
Overall Cumulative	**11,381**	**145**	**1.3%**

Means of achievement

(ii) Undertake direct control by service delivery of all Total Control species at all known sites with the region on an annual basis.

Actual Performance

Annual inspection Programme

All 1,205 known Total Control sites were inspected and controlled during the year. Some sites were visited up to five times annually depending on reproductive ability and seasonal weather (e.g. Bathurst bur, saffron thistle). Others were only visited once (e.g. blue passion flower, moth plant).

Annual inspections and control activities were again completed utilising contract labour and staff. Staff completed the great majority of the work. Inspections are rotated so that staff can complete the inspections on a site at least every second year, or complete the final inspection for sites visited multiple times during a year.

The overall number of known sites is steadily increasing. It is directly attributable to the focus of the delimiting project. This trend will reduce once the delimiting survey transitions into a general targeted survey.

The effectiveness of the dedicated effort for rapid control can be seen by:

- an increase in the number of sites where no pest plants found;

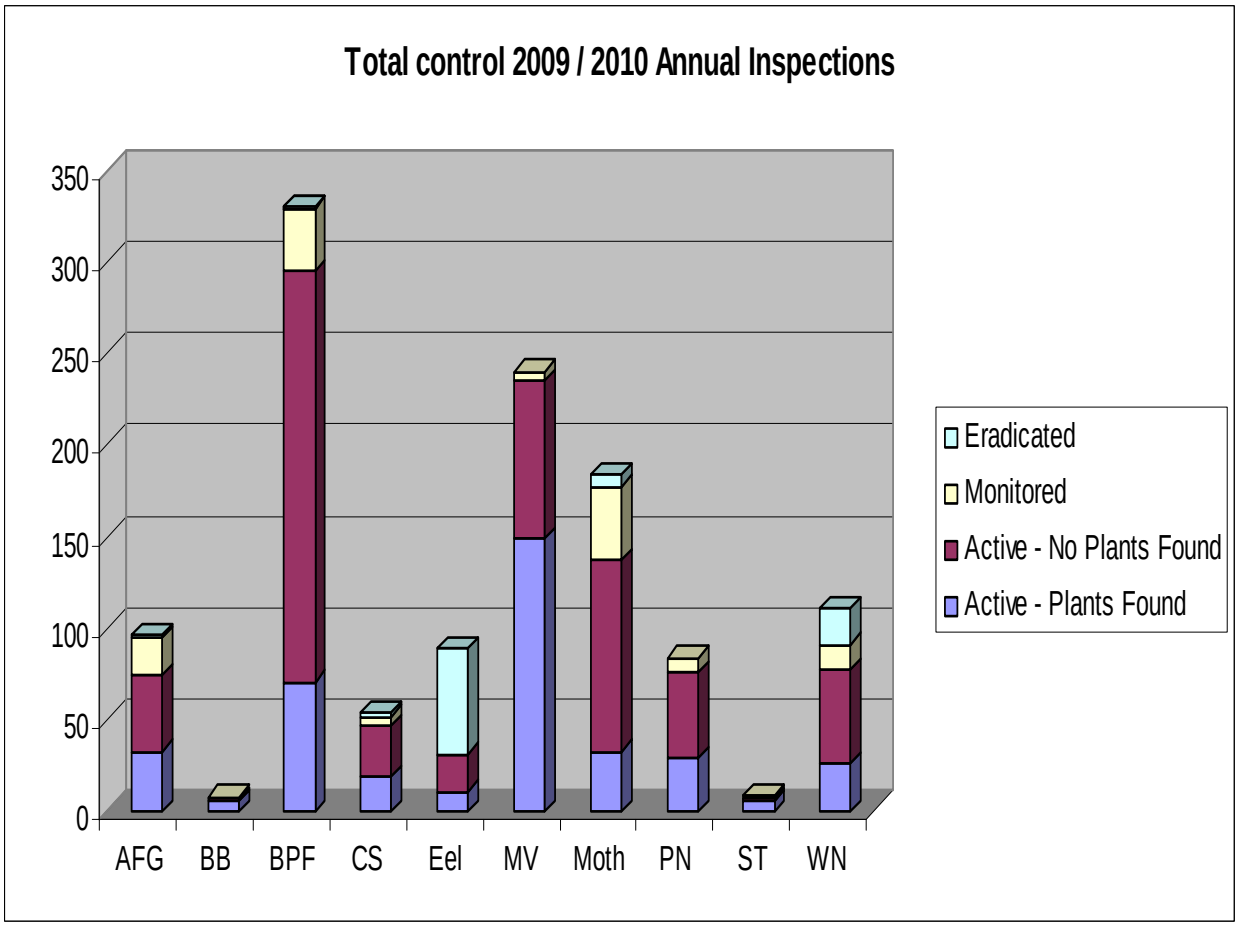
- an increase in the number of sites to monitor after five years clear of a Total Control plant; and

- the shift to sites being declared eradicated after nine years with no plants found.

Table – summary of known Total Control species sites and their status

Control Stage	African feather grass	Bathurst burr	Blue passion flower	Climbing spindle berry	Eel grass	Madeira vine	Moth plant	Perennial nettle	Saffron thistle	Woolly nightshade	Totals
Active - plants found	33	6	71	19	11	149	33	29	6	26	383
Active – no plants found	41	1	224	28	20	86	104	47	1	51	603
Monitored	21	1	34	5	0	5	40	8	2	14	130
Eradicated	1	0	1	2	58	0	7	0	0	20	89
Known sites	96	8	330	54	89	240	184	84	9	111	1,205

Total Control Combined Results



Means of achievement

(iii) Provide information and publicity to enhance public awareness of the threat posed by Total Control species to the region.

Actual Performance

Refer to Section 10 'Public Awareness'.

Means of achievement

(iv) Annually inspect all plant outlets and markets within the region for the sale and/or propagation of Total Control species.

Actual Performance

Refer to Section 7.1 'Surveillance (NPPA inspections)'.

Means of achievement

(v) Use biological control agents where appropriate, and support relevant biological control research initiatives.

Actual Performance

GW continues to support the National Biological Control Collective. Other regions have widespread infestations of species we rank as Total Control (e.g. woolly nightshade, moth plant, blue passion flower). Supporting the allocation of funds to provide control agents for these species will reduce the potential for their reinvasion across the regional boundary. This is a long-term strategy to reduce the risk of Total Control species continuing to dominate ecosystems nationally.

For more information refer to Section 9 'Biological Control'.

7.3 Containment species

Aim: **To control all Containment species outside the Containment zones within the Wellington region at a cost of $234,717**

Annual cost: **The cost of managing Containment plants throughout the region during 2009/10 was $176,040**

Means of achievement

(i) Undertake direct control by service delivery of Containment species outside the Containment zone within the region on an annual basis.

Actual Performance

a) Boneseed

All sites were inspected through early spring. The level of infestation in these areas is now at very low densities. Staff undertook control work on the escarpments in all areas accessible on foot without fall restraint protection. It was decided to spell the control undertaken on escarpments using abseilers or helicopter. The previous two years using ropes and helicopter on the inaccessible upper steep faces has been successful. The results of inspections every second year will be assessed in terms of overall numbers of plants treated and size. In general very few large plants are being found. The outer limits of all infested areas are now known and mapped.

GW currently has a Memorandum of Understanding (MOU) agreement with Hutt City Council to restore the Petone/Eastbourne and Pencarrow foreshore (with DOC and the GW Parks Department also contributing). This includes control of boneseed. Good control has been achieved in all targeted areas, with the largest remaining infestation an area of shoreline from the end of the Eastbourne public road to Pencarrow. This area was heavily infested with a very dense monoculture of boneseed or gorse. The Community MAX teams were used to cut boneseed and treat the stumps at this site, with a large area controlled effectively by the team. The follow-up maintenance will be completed with inspections throughout the entire length of coast.

The southwest coast from Pukerua Bay to Owhiro Bay was surveyed using helicopter. The aim was to locate the presence of pest species (plants and animals). The survey flight costs were shared with Wellington City Council (WCC). WCC and GW are planning to undertake targeted control operations on valuable biodiversity sites along this coast. Boneseed was identified close to Owhiro Bay. Goats were found in moderate numbers along the coast. The flight landed at sites to identify pest and indigenous plant species. These sites were mapped for follow-up control.

b) Hornwort

GW Biosecurity staff have participated in a number of Lake Wairarapa Moana restoration forums. The Lake Wairarapa containment zone was surveyed for current infestation levels, and a report prepared to brief the Lake Wairarapa Moana Governance Board of the impact this species has had within the ecosystem. The current outcomes from trials and research of control techniques were included in the report to indicate the challenge of controlling this species.

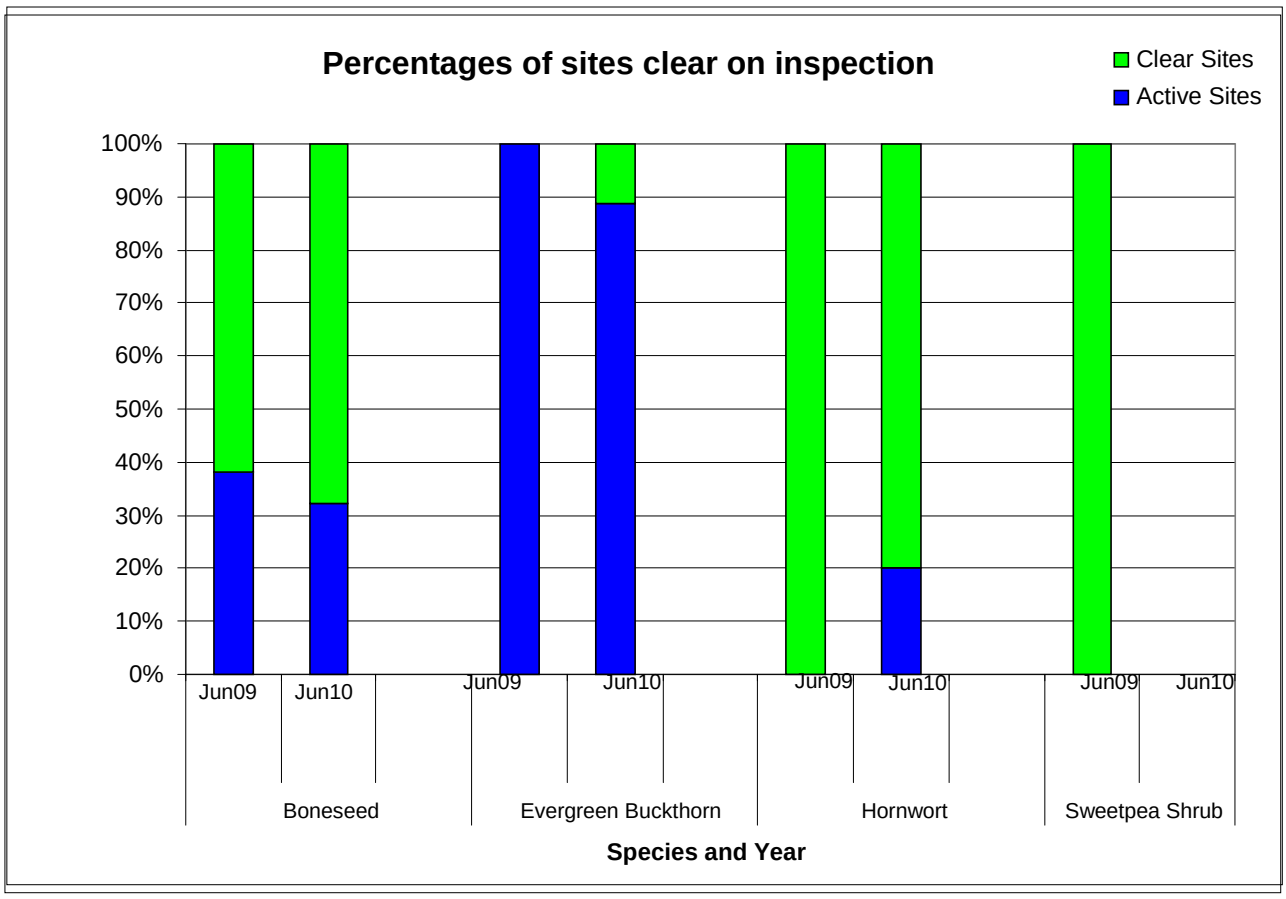
DOC staff monitored the control undertaken by GW on their behalf in Boggy Pond (eastern shore of Lake Wairarapa) in 2009. The control has been very successful.

c) Evergreen Buckthorn

Control was undertaken where this species was located on coastal restoration sites in, dunes, estuaries and escarpments. The majority of work was on the west coast.

d) Sweet pea shrub

There were no sites of this species found outside the containment areas this year.



Means of achievement

(ii) Provide information and publicity to enhance public awareness of the threat posed by the Containment species to the region.

Actual Performance

Refer to Section 10 'Public Awareness'.

Means of achievement

(iii) Identify new sites of Containment species outside the Containment zones through incidental reports by GW Biosecurity Officers, the public, or through the Regional Surveillance pest plant programme.

Actual Performance

Several new sites were recorded during delimiting surveys. A new hornwort site was controlled at one property by removing all plants and fish from four ornamental ponds and fully cleaning the ponds. New plants (lilies and native species) were provided to the owner. It is thought the plant was sourced from a locally infected lake.

GW was informed of hornwort being used by a fish trader to transport fish throughout the country from Wanganui. Once again the trader sourced the plants from an infested lake in Wanganui. The sales into the region were traced back to retailers. Plants were collected and destroyed by GW staff and the wholesaler was dealt with by MAF BNZ.

Means of achievement

(iv) Annually inspect all plant, animal outlets and markets in the region for the sale and/or propagation of the Containment species.

Actual Performance

Refer to Section 7.1 'Surveillance (NPPA inspections)'.

Means of achievement

(v) Use biological control agents where appropriate, and support relevant biological control research initiatives.

Actual Performance

Refer to Section 9 'Biological Control'.

7.3.1 Site-Led boundary control and human health species

Aim: **To minimise the adverse impacts of Site-Led boundary control species and the risk to human health of species in specific situations throughout the Wellington region at a cost of $162,974**

Annual cost: **The cost of managing Containment plants throughout the region during 2009/10 was $161,800**

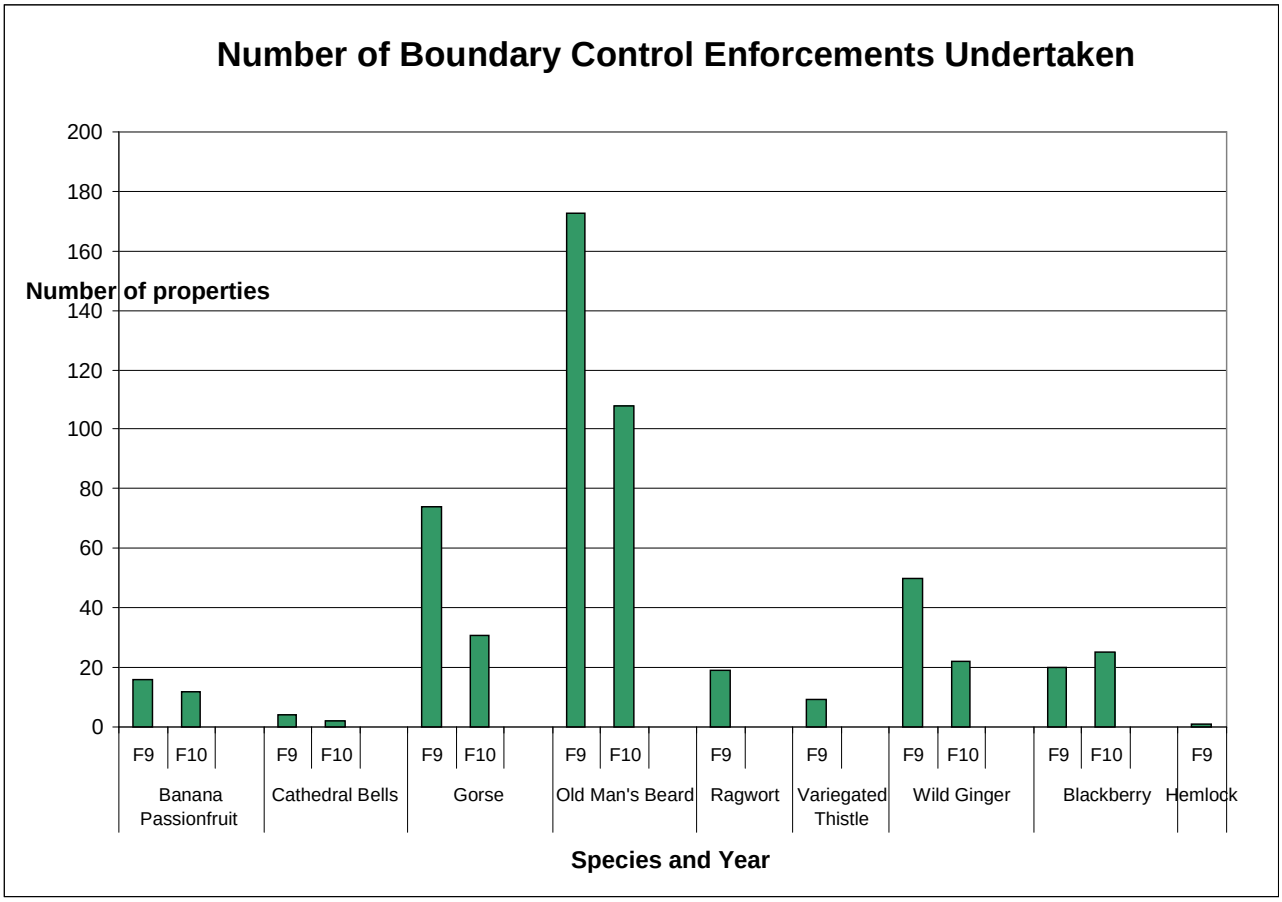
Means of achievement

(i) Action complaints received to within the parameters of the Strategy.

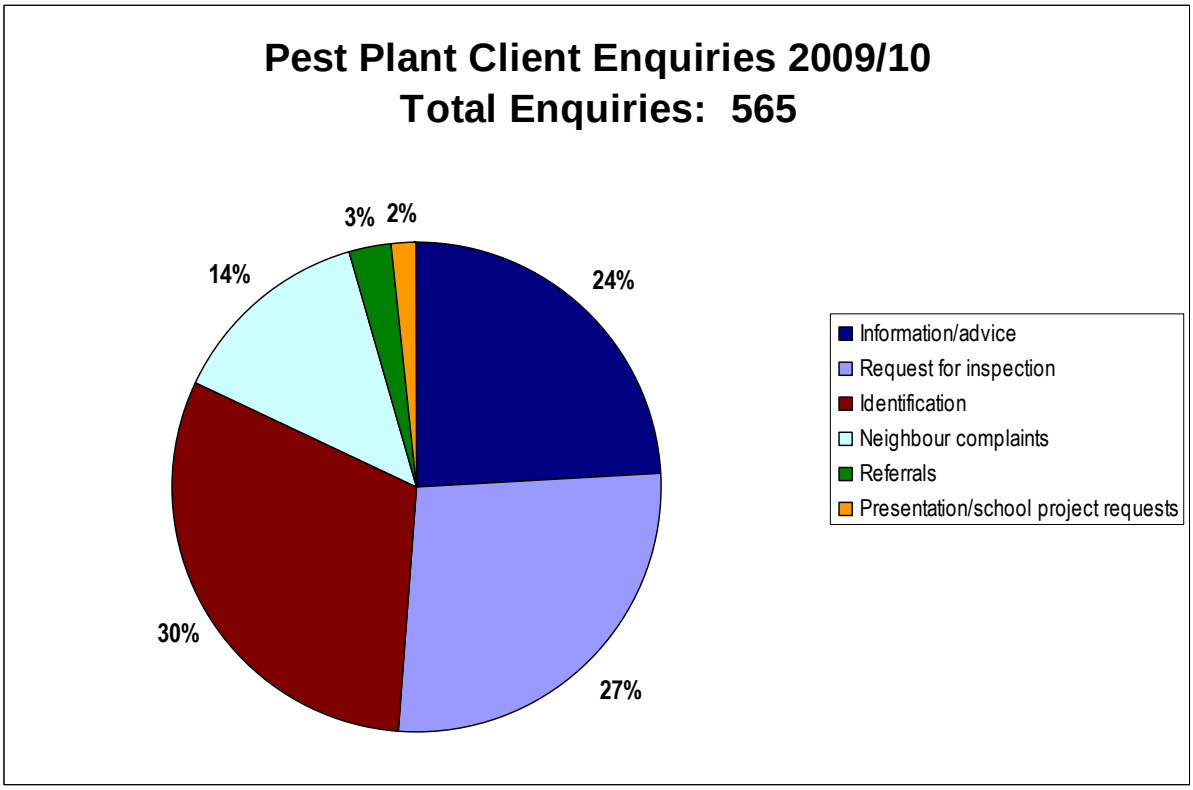
Actual Performance

Staff responded to all complaints and client response requests this year. The complaint season started early with a very warm and dry August – early September period. Many of the complaints were for Boundary species.

Direct compliance action by GW staff was found to be the most effective way to deal with most of these complaints.



8. Client response enquiries



Means of achievement

(ii) Provide information and publicity to enhance public awareness of the threat posed by Site-Led boundary control and Site-Led human health species to the region.

Actual Performance

Refer to Section 10 'Public Awareness'.

Means of achievement

(iii) Annually inspect all plant outlets and markets within the region for the sale and/or propagation of Site-Led boundary control and Site-Led human health species.

Actual Performance

Refer to Section 7.1 'Surveillance (NPPA inspections)'.

Means of achievement

(iv) Use biological control agents where appropriate, and support relevant biological control research initiatives.

For more information refer to Section 9 'Biological Control'.

8.1.1 Site-Led – Key Native Ecosystems, Reserves and Forest Health

Aim: **To protect indigenous biodiversity in a comprehensive selection of Key Native Ecosystems and Reserves at a cost of $448,680**

Annual cost: **The cost to GW to manage KNE species was $405,707**

Means of achievement

(i) Ensure KNE's are legally protected into perpetuity.

Actual Performance

All sites currently receiving restoration activity are either registered with QEII or are Reserves owned by TAs.

Means of achievement

(ii) Establish and implement integrated pest management plans for all KNE's and selected Reserves.

Actual Performance

All actively managed KNE's have restoration plans.

Means of achievement

(iii) Undertake direct control by service delivery of pests identified in the management plan for KNE's and reserves.

Actual Performance

This year the section completed 55 contracts. Staff dedicated time to manage and undertake activities to support the programme.

Activity was based on our current Restoration Plan. All sites have restoration plans outlining the site values, pest risks and restoration activity required. Reserves were worked collaboratively with TA's or DOC on three-year MOU agreements. The total funding pool is assigned to the top ranked sites on the 10-year rolling plan. New sites receive resources as inputs to current sites are reduced. The outcomes are measured annually and the future resource allocations are then reviewed.

Staff spent a large amount of time on restoration activities such as supporting care groups prior to planting or supporting pest plant release operations utilising chemical sprays. Staff have also been actively involved in the Community MAX programme, assessing new sites with TA's or private owners. Forest Lakes have received support from many sources to initiate restoration planning and fund applications.

Pest Plants Key Native Ecosystems/ Reserves programme

	Kapiti	Porirua	Wellington	Lower Hutt	Upper Hutt	Wairarapa
Forest/ bush	Devil's Elbow	Porirua Scenic Reserve	Johnsonville/ Khandallah	Haywards	Keith George Memorial	Tauherenikau Bush
	Waikanae Reserves	Porirua Park Bush	Seton Nossiter		Witako	Rewanui
			Trellisick Park		Flux covenant	Bagshot Covenant
Dunelands	Waitohu Dunes	Onepoto		Pencarrow		Riversdale Dunes
	Paraparaumu Dunes			Eastbourne		
	Waikanae Dunes			Petone		
Escarpments	Paekakariki Escarpment	Pukerua Bay Escarpment	Mapuia			
coastal forest	Raumati Escarpment	Karehana Bay	Tarakena Bay			
		Raroa Reserve				
Wetlands	Waimeha Lagoon					Riversdale Southern Wetlands
	O-te-Pua					
	Te Hapua wetlands					
	Te Harakeke wetlands					
	Nga Manu					
Riparian	Waikanae River (Dricon)				Hulls Creek	
					Moehau Stream	
Estuaries	Waikanae Estuary		Makara Estuary			
	Otaki Estuary					

Note names in Blue are private covenants

Means of achievement

(iv) Facilitate the involvement of community groups where appropriate.

Actual Performance

Close liaison was maintained with Environment Take Care co-ordinator on sites across the region. GW Biosecurity staff have worked with a number of volunteer groups continually during the year. A lot of effort was required to retain interest within the Riversdale Care Group. The Forest Lakes site has moved closer to becoming a QEII covenant.

Means of achievement

(v) Co-ordinate site management with other biodiversity initiatives where possible.

Actual Performance

Staff provided advice on pest plant issues at Lake Wairarapa. This included aerial spray prescriptions for control of alder and crack willow. A report on the current hornwort infestation, current research results and potential control options was completed for the Wairarapa Moana Governance Board.

Means of achievement

(vi) Use biological control agents where appropriate, and support relevant biological control research initiatives.

Actual Performance

For more information refer to Section 9 'Biological Control'.

Means of achievement

(vii) Monitor site recovery using a range of ecological indicators.

Actual Performance

Biosecurity staff have developed a KNE Restoration Manual, which focuses on monitoring requirements. The monitoring starts with assessment of current pest status and annual inspections after any control work. The inspections note natural restoration indicators (indigenous species seedling establishment and species site occupancy). Some sites receive intensive FORMAK and outcome monitoring (Tauherenikau). This was a pilot study to determine the amount and type of monitoring needed for specific restoration activities in different ecosystems.

Means of achievement

(viii) Manage external pressures that are inconsistent with KNE and reserve management objectives.

Actual Performance

Staff are aware of the pest plant risks surrounding restoration areas. Information pamphlets were delivered to areas of threat, to help raise local awareness. Articles focusing on environmental weeds of interest were also offered to papers, council publications and made available on the GW web site.

Means of achievement

(ix) Provide public education and advice to foster biodiversity management outside formal KNE and reserve areas. Provide information and publicity to enhance public awareness of the threat posed by Regional Surveillance, Total Control, Containment, Site-Led and Environmental pest plants to the region.

Actual Performance

Refer to Section 10 'Public Awareness'.

Means of achievement

(x) Maintain holistic management in existing managed KNE and reserve areas.

Actual Performance

The section has completed a two-year project developing a restoration manual. This is to help ensure consistent responses and management at each site.

Means of achievement

(xi) Where KNE's are identified on Territorial Local Authority land, seek funding from the relevant authority to form financial partnerships.

Actual Performance

The section regularly met with TLA representatives. Staff were assigned responsibility to reserves within their area and maintained close liaison with TLA and GW Take Care staff. Annual discussions were completed to allocate resources in a 10-year plan. MOU agreements are in place for each TLA that have resources allocated to reserves of interest to GW. TLA's contributed in excess of $70,000 to the programme.

9. Biological control

This report outlines the current activity and status of Biological control agents within the region. Activity targeted higher priority agents that have been transferred/harvested, purchased or given to GW by various suppliers.

9.1 Biological Control agents

a) Boneseed leaf roller *(Totrix s.l.sp. "chrysanthemoides")*

Inspections of sites in the Western Zone were carried out by staff and Chris Winks from Landcare Research in February 2010, with a positive sighting of two boneseed leaf rollers at the Miramar wharf.

Throughout the year monitoring was conducted on a monthly basis on the seven release sites in the Western Zone. Nearly all of the leaf roller specimens found were parasitized, limiting the likelihood of the leaf roller becoming an effective biocontrol agent.

b) Broom gall mite *(Aceria genistae)*

A release of this was made in November 2009 following delivery from Landcare Research. This mite will be important for the management of broom in the future.

c) Broom leaf beetle *(Gonioctena olivacea)*

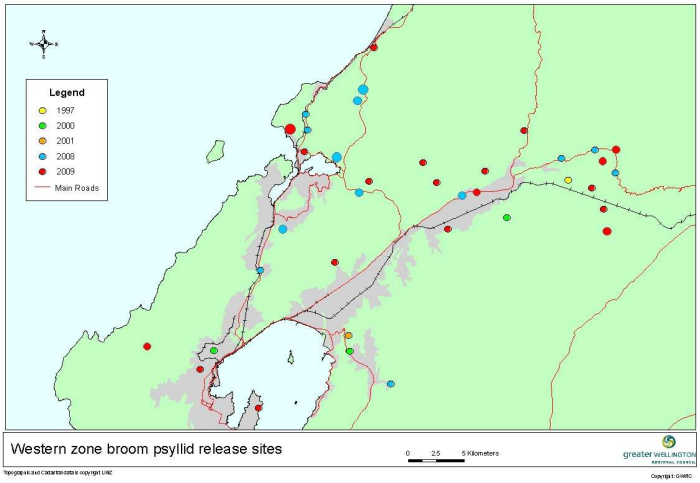
The release of this agent was made at Miki Miki north of Masterton. Late in 2009 a beetle was located, a photo of which was positively identified by Hugh Gourlay of Landcare Research at Lincoln.

d) Broom psyllid *(Arytainilla spartiophila)*

A large number of transfers/releases were made in the Eastern Zone for 2009/10.

- Masterton 168
- Carterton 37
- South Wairarapa 7

It is hoped that there will be total coverage of this agent in the Eastern Zone in four years.



In the Western Zone 19 transfers/releases were made in 2009/10.

- Porirua 4
- Wellington 3
- Upper Hutt 10
- Kapiti 1
- Hutt 1

For 2009/10, 11 release sites in the Western Zone were surveyed with psyllids found at seven sites.

e) Broomseed beetle *(Bruchidius villosus)*

Broomseed beetle is very widespread throughout the Wairarapa and most broom in the Eastern Zone (even isolated bushes/clumps) has this agent present. Wherever broom psyllid has been released a number of these agents were found in the collected material.

The density of broom seed beetle is considerably less than in the Western Zone compared to the Eastern side of the region.

f) Broom shoot moth *(Agonopterix assimilella)*

The broom shoot moth was a new agent purchased from Landcare Research this year. It was released in Porirua Park at the same release site of broom seed beetle and broom psyllid.

g) Buddleia leaf weevil *(Cleopus japonicus)*

The two release sites in the Western Zone were inspected twice. One adult weevil was found at the quarry site, along with a reasonable amount of damage in one localised branch.

One release was made on the Waingawa River in April 2010; this release was delivered for free from SCION.

Example of Buddleia leaf weevil damage; found at Belmont Quarry

h) Californian thistle stem miner *(Ceratapion onopordi)*

One release of this agent was made this year at Rangitumau north east of Masterton. This will be a valuable agent, along with the green thistle beetle released last year in the same area.

i) Gorse pod moth *(Cydia succedana)*

Monitoring of the gorse pod moth has been conducted monthly since September 2009 at the Wainuiomata Hill release site. This was done to assist Craig Sixtus from Lincoln University with his PhD thesis. Unfortunately while lots of pod moths were consistently found at this site, around half the bushes were sprayed and destroyed by landowners in April 2010. A new site was established at Onepoto Bay in Porirua.

j) Gorse soft shoot moth *(Agonopterix ulicetella)*

A release of this agent was made at Miki Miki north of Masterton during 2009/10.

k) Gorse thrips *(Sericothrips staphylinus)*

Staff have started a survey of this agent with a number of sites located. This agent will benefit from transfer/release as there seems to be of limited distribution in the region.

l) Green thistle beetle *(Cassida rubiginosa)*

The release site at Rangitumau north of Masterton was inspected in February. The beetle appears to have established as there were juvenile and adults present after 12 months (one winter). Beetles and beetle damage was easily sighted on targeted plants.

m) Mist flower fungus *(Entyloma ageratinae)*

The release site in Wellington was inspected by staff and Chris Winks of Landcare Research. Some damage was found. GW is still awaiting the results from the Landcare pathologist.

n) Mist flower gall fly *(Procecidochares alani)*

This agent is present at one site in Eastbourne but the numbers are not sufficient for transfer. The gall fly was not observed at any other site this year.

o) Nodding thistle crown weevil *(Trichosirocalus horridus)*

Staff participated in a national survey for this agent but were unable to locate any specimens in our region.

p) Ragwort cinnabar moth *(Tyria jacobaeae)*

Ragwort cinnabar moth was present at the three release sites in Upper Hutt, Makara and Waikanae.

q) Ragwort flea beetle *(Longitarsus jacobaeae)*

Some of these were harvested for release in the Western Zone. Three releases of the ragwort flea beetle were made at Makara, Waikanae and Upper Hutt.

r) Scotch thistle gall fly *(Urophora stylata)*

Wairarapa staff completed two releases from galls which were harvested in the Western Zone. Of the three release sites in the Western Zone the one at Pauatahanui had sufficient numbers for harvesting.

s) Smilax rust *(Puccinia myrsiphylli)*

No work has been carried out on this agent in the Eastern Zone. In the Western Zone rust was transferred to three sites harvested from Wards Line, Wairarapa. On the last inspection it was found to have established at the Porirua and Upper Hutt sites, although no evidence was seen at Paekakariki Hill Road. Smilax

infestations in East Harbour Regional Park were found to have the rust present without any assistance from GW staff.

9.2 Biocontrol training

Staff attended a Biocontrol workshop in September 2009. The workshop highlighted the complexity of monitoring Biocontrol agents. Boneseed and gorse pod moth are currently monitored, and it has been agreed to monitor the Tradescantia leaf beetle when it is released. This agent is suitable as staff will be able to collect baseline data on the sites prior to release, as opposed to historical releases where this data was missing. Tradescantia is also a convenient groundcover species for utilising photo point evaluation skills gained on the course.

10. Public awareness

Total expenditure to support all response categories in the Strategy was $32,186.

10.1 Communications plan

This was the first year of implementation for the communication activities plan. The plan outlines the overall activities of the section, and provides a guide for the actions and targets for annual planning. The plan will be reviewed in the next financial year and any changes implemented.

10.2 Publications

The pest plant publications printed for 2009/10 were re-printed due to increased public interest. In addition to the publications produced last year, a quick card of Total Control species was produced to be handed out during inspections and field days.

10.3 Articles

There were a total of 12 articles submitted to a range of media outlets relating to pest plants.

An article released to the media on giant hogweed received unprecedented national media coverage. The potential human health risks of giant hogweed were brought to the sections attention following a public enquiry relating to burns received from a garden plant. In an attempt to prevent further public health risk and to see how widespread giant hogweed is in the region, an article was released to the local media. It made it onto the news bulletin on TVNZ's Breakfast show, national radio and in eight separate newspapers.

Biosecurity Officer (Plants) Pedro Jensen standing beside a reported giant hogweed plant

The release resulted in 79 enquiries relating to giant hogweed leading to 30 new sites with confirmed infestations. The majority of these were treated as a free service delivery. It also brought a potentially dangerous plant to the publics' attention, hopefully avoiding a risk to their health in the future. GW also received positive public feedback on the publicity campaign.

Articles on Rewanui and Riversdale dunes restoration sites were printed in the Wairarapa "Lifestyle" magazine and released to the media.

Articles on saffron thistle, Bathurst bur, woolly nightshade, eelgrass and Asiatic knotweed were printed by a range of papers in the region.

An article on weed identification on private property was produced for the GW rural newsletter, "Rural Focus".

"Wanted - pest plant" short adverts on noogoora bur, woolly nightshade, and Asiatic knotweed were published in the GW newsletter, "Our Region".

10.4 GW external website

Implementation of the new GW website occurred this year. Material from the old website was updated and aligned with the reviewed Strategy.

A number of articles were released on the GW external website. These related directly to articles that were released to the media as outlined in Section 10.3.

10.5 Presentations/shows

Biosecurity staff provided information to the public through:

- Attendance at the A & P shows; two in the Wairarapa and the Otaki Lifestyle Farmers Field Day.
- Support to DOC at regional weed swap events in Wellington, the Hutt, Kapiti and the Wairarapa
- Presentations to special interest groups including polytechnic, schools, societies and restoration groups.
- Data management project

Significant progress has been made in 2009/10 on the development of an integrated Biosecurity database. With the assistance of GW IT staff and the entire Biosecurity Department the user-requirements document has been completed. GW is involved in a project to combine Environment Bay of Plenty (EBoP) and Auckland Regional Council's (ARC's) biodiversity database systems into a generic suite of biodiversity database modules. This project will collate all of the complex biosecurity/biodiversity data collected and held by regional councils into a single data-management system.

11. Financial summary

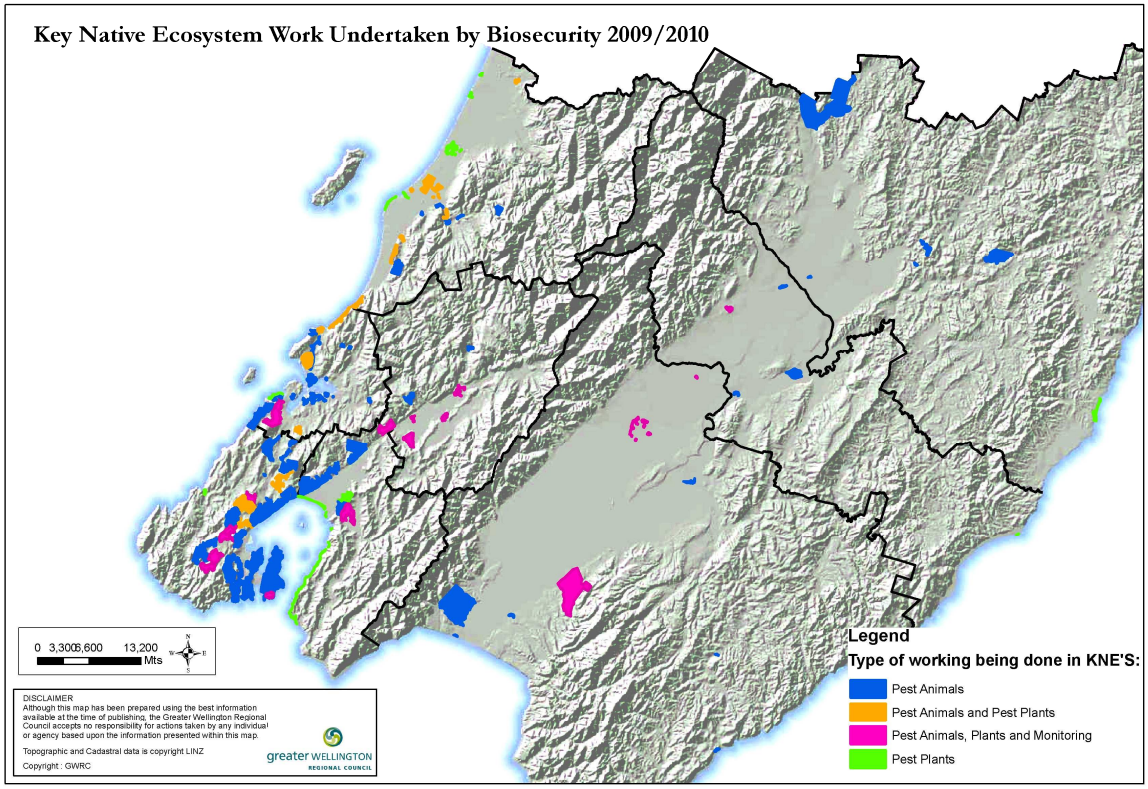
	$ (000's)
Rates and Levies	1,469.7
External Revenue	248,2
Internal Revenue	73.1
Total Operating Revenue	**1791.0**
Total Direct Expenditure	**1365.6**
Divisional Overheads	436.8
Total Operating Expenditure	**1,802.4**
Deficit	(11.4)

Part Three

Biosecurity/Biodiversity – Programme and Monitoring

12. KNE Operations

During the 2009/10 year, 18,376ha of possum and/or predator control was undertaken. This comprised 16 sites in the Wairarapa (10,383ha) and 76 sites (7,993ha) in the Western Zone. No initial KNE work was undertaken during 2009/10. In addition, 12 sites (comprising 16,695ha) of GW Parks lands were treated for possums as part of an ongoing forest health programme.



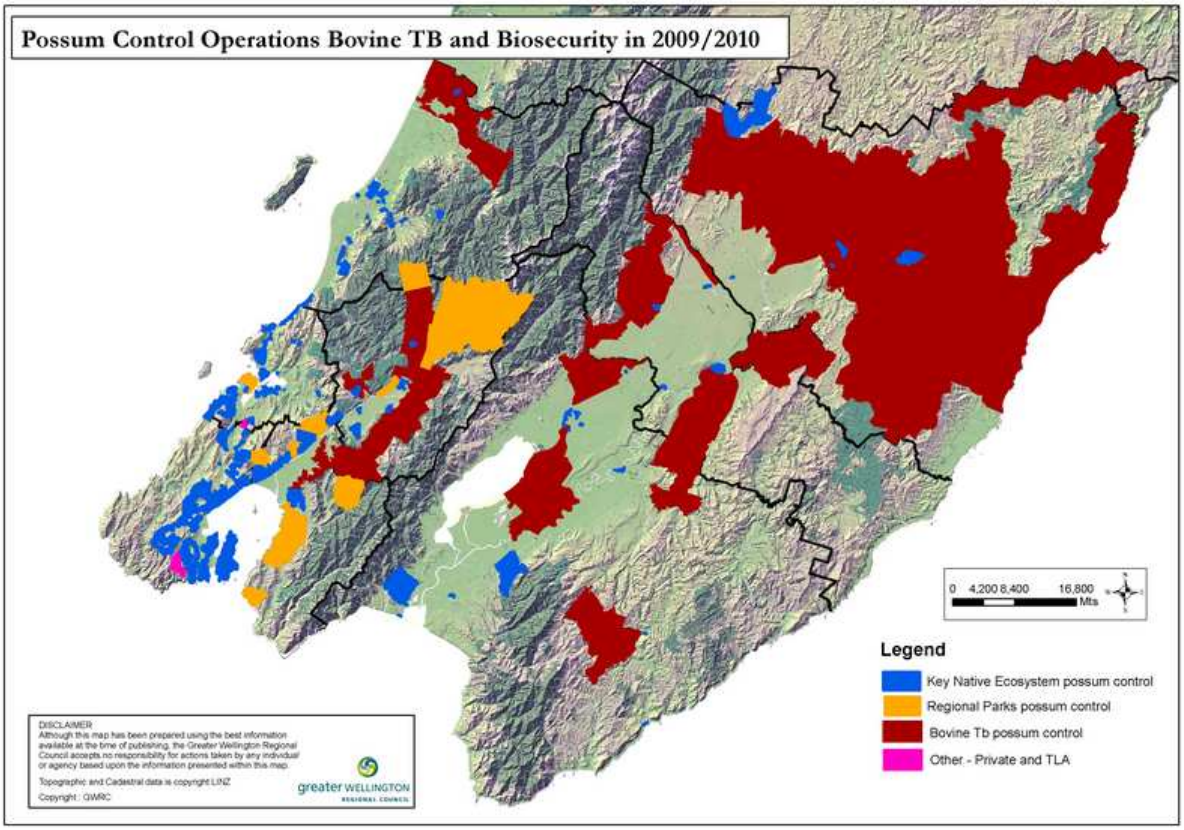
12.1 Possum control

KNE maintenance operations for possum and predator control

	Work carried out by:			
	GW Staff	**Contractors**	**Volunteers**	**Total Hectares**
Kapiti	173	176	219	568
Porirua	1,316	84	157	1,557
Wellington	2,562	1,436	346	4,344
Lower Hutt	391	630	0	1,021
Upper Hutt	17	0	486	503
Sub total:	**4,459**	**2,326**	**1,208**	**7,993**
Masterton	3	4,113	0	4,116
Carterton	193	0	30	223
South Wairarapa	4,931	1,089	24	6,044
Sub Total:	**5,127**	**5,202**	**54**	**10,383**

Operational hectares

Years	09/10	08/09	07/08	06/07	05/06	04/05	03/04	02/03	01/02	00/01	99/00	98/99
Hectares	18,376	19,164	18,806	18,406	17,763	17,089	17,664	16,274	10,840	16,012	15,681	9,390



12.2 A new pest control education initiative

Federated Farmers and Forest & Bird have established a joint initiative to help educate the public about the importance of controlling introduced mammalian pests in New Zealand. The initiative, which is supported by a wide range of conservation and farming organisations is organised by the Pest Control Education Trust. The Trust is focussing initially on public education about the use of 1080 in New Zealand and its important role in the country's overall pest control strategy. This first initiative, the website www.1080facts.co.nz, went live on the 8th April 2010. Supporters of the project include Federated Farmers of New Zealand, Forest & Bird New Zealand, the Animal Health Board (AHB), the Department of Conservation (DOC), Dairy NZ, Solid Energy, the Isaac Wildlife Foundation, Meat & Wool New Zealand, PGG Wrightson, Deer Industry New Zealand, and Bush and Beyond.

12.3 Mustelid trap integration and trials

Multi-species pest control has become a main goal of the KNE programme since 2007. Predators such as mustelids and feral cats had already been an operational focus in the Wairarapa for 10 years, whereas most KNE areas in the Western Zone had the principal focus on possums and then rats. With the increase of native birds in most treatment areas due to low possum and rat numbers, mustelids are now recognised as being a more important threat.

The 2009/10 year saw the integration of mustelid traps into numerous Western Zone KNE areas. This was largely due to funding for the traps being obtained from our funding partners and the GW Environment Department. A total of 325 DOC200 kill traps were put into Western Zone KNE's.

The self-setting Henry rat and stoat trap was trialled this year. This trap works by a gas powered piston being released when the target animal is in the trap, killing it instantly. The carcass then drops out the bottom of the trap, which can reset itself up to 12 times. GW Biosecurity purchased five traps and placed them in various sites to compare effectiveness. The prototype traps GW purchased had some issues with the weight of the magnet to release the mechanism and replacements have since been issued. Video surveillance was run on one trap for a number of weeks, which captured a hedgehog falling victim to the trap. The new model of trap appears to be improved. More trials are planned for the 2010/11 year. GW Biosecurity is particularly interested in trialing a new Henri possum trap which is under development.

The newly developed "Trapinator" possum trap was also trialed this year. This trap is more conventional, and is similar in action to the Timms trap but can be mounted vertically on a tree. These traps have been placed in various operational areas to monitor their durability and effectiveness.

12.4 East Harbour Regional Park Falcons

A pair of New Zealand falcons (Karearea) were sighted nesting in East Harbour Regional Park, an occurrence which is becoming an annual event for the pair of predatory birds. Falcons are listed as nationally vulnerable and endangered, but have been making a slow return to the reserves and forests of the Wellington region. East Harbour Regional Park has received ongoing possum and predator control since 2001. The effectiveness of the programme helped the falcons to successfully raise their young in a nest located on the ground. Following the discovery of the nest a mustelid trap was set near the location in the hope of catching any roaming predators.

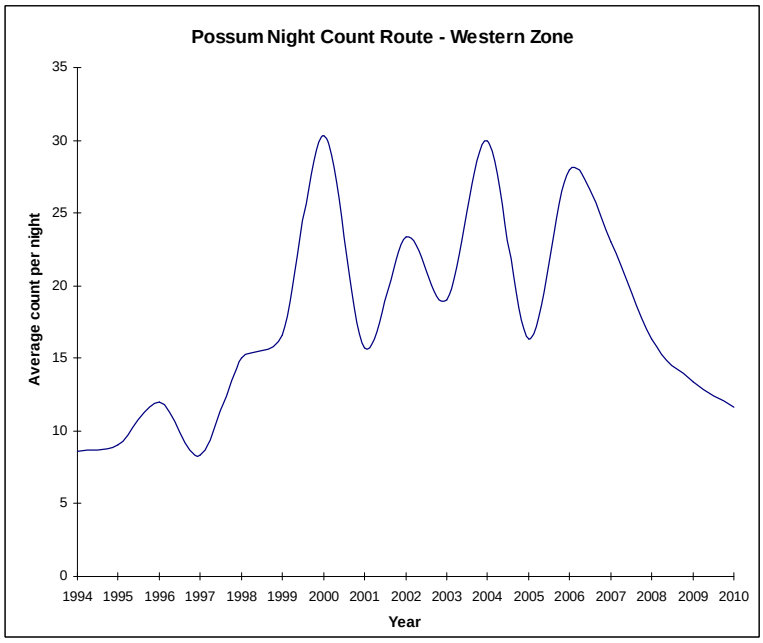
New Zealand Falcon guarding her nest in East Harbour Regional Park

12.5 Management of non-Strategy animal pests

GW Biosecurity has seen a continued trend towards managing unorthodox pest animal species in a range of urban and rural situations throughout the region. Many of these animal species or their location falls outside the parameters of the Strategy, but there is no other agency able or willing to manage these problem animals. Feral chickens, feral geese, feral goats and feral pigs have all been controlled or removed from urban areas at the request of City and District Councils during the 2009/10 year, often requiring discrete removal of the offending animals.

GW considers it more appropriate for trained Biosecurity staff to deal with these problem animals and reduce the risk and likelihood of members of the public becoming involved. With increased concerns over fatal control methods and raised media awareness of pest control issues, it is important that these situations are dealt with in a humane and discreet but effective way.

12.6 Trend monitoring for possums



Trend monitoring for possums in the absence of formal possum control has been undertaken at Belmont Regional Park since 1994. The intent of the monitor is to determine the population trend over time where no formal possum control work is being done. There was an increase in possum numbers from 1998/99, which rose to and then fluctuated at high levels from 2000 to 2006. The population has taken a downward trend for the three years since 2006, and is approaching the population figures of the 1990's. The population fluctuated at around an average of 23 possums counted per night at 25 stations over three nights between 2000 and 2007. Since 2007 the possum population had decreased to around 12.

It is difficult to explain the cause of this decline, but it corresponds with the effective possum control which has been undertaken in Korokoro Reserve to the south of the monitoring site. This control may be reducing the migration rate, or encouraging migration from the monitoring area into the Korokoro Reserve, reducing the overall possum population.

12.7 Rodents

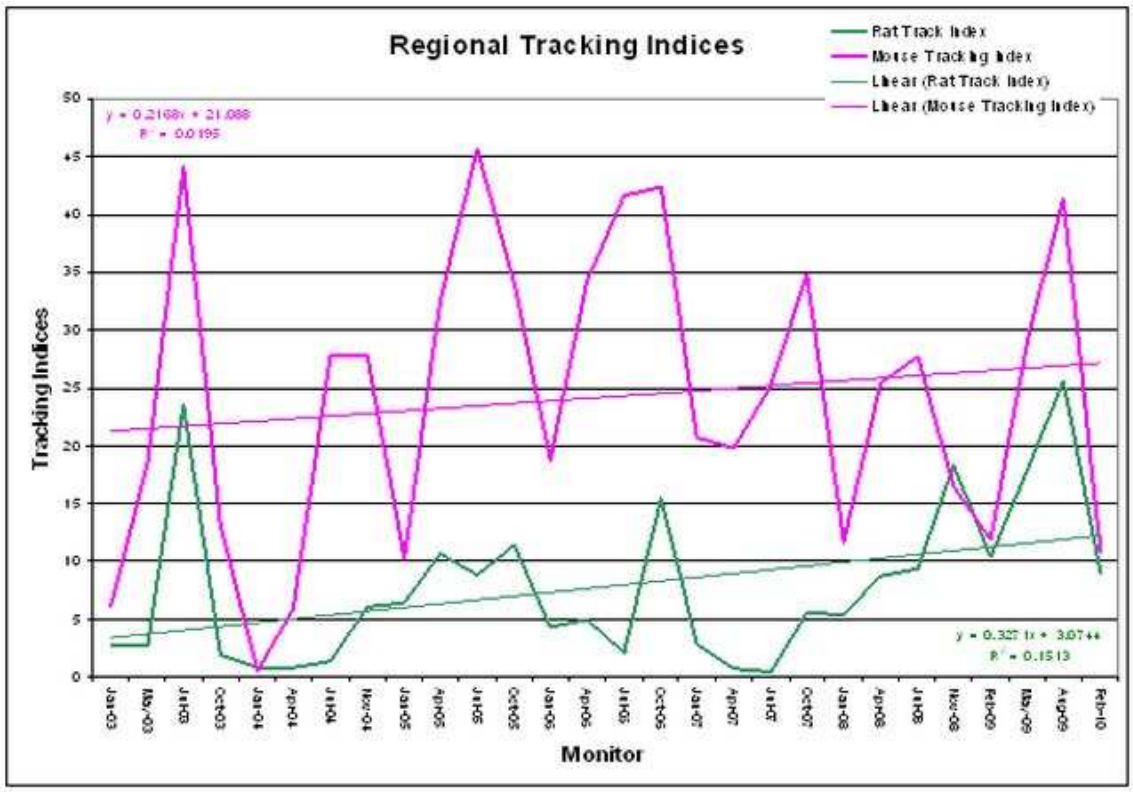
This report summarises rodent monitoring from January 2003 to February 2010 and outlines the response of rodent populations to:

- intensive anticoagulant baiting for multi-species pest management;
- time/season.

Multi-species pest control effectively limits rat populations to low levels and the efficacy of the baiting regime (bait stations on a 150m gird filled three to four monthly) has been proven. The average rat *(Rattus spp.)* tracking index is 7.8% for sites with intensive baiting (excluding Long Gully); refer to Chart 1, while the average mouse *(Mus musculus)* tracking index is 24.3%. However, the regression lines show slight increases in activity over time. The tracking index ranged from 0.5% to 25.6% for rats and 0.6% and 45.7% for mice.

Maintaining the current baiting regime appears to control rat numbers to levels that will improve biodiversity outcomes for birds (Innes et al., 2005), and may benefit invertebrates. The current control regime does not appear to influence mouse populations significantly.

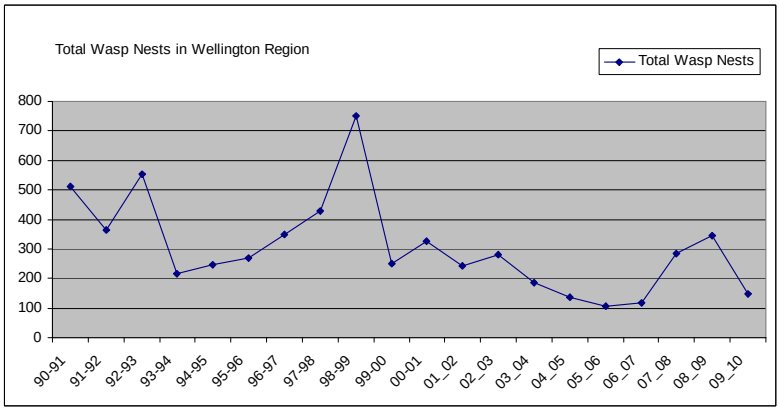
Chart 1: Average-tracking rates for rats and mice in reserves that are part of the multi-species pest control regime (Brodifacoum baiting)



12.8 Wasp Season 2009/10

Staff from the City and District Councils, DOC and GW, who are involved in responding to wasp nest nuisance calls within the Wellington region, have been supplying an annual 'Wasp Nest Register' covering the 12 month period to the end of June. These registers have been used since the 1990/91 season to summarise wasp nest type, location, time of year and frequency of occurrence.

Wasps have now been included in the Strategy in the Site-Led pest management category programmes - Human Health. The main reason for this is to require land occupiers to destroy all wasp nests within their boundaries that are creating a human health hazard to effected parties. This also allows GW to undertake necessary action(s) for monitoring and controlling wasps in the region.



The 2009/10 wasp season was not as busy as previous years except in Kapiti. Hutt City's boom seems to again be quieting down from previous years. Minimum mean temperatures for November 2009 were average for most areas in the Wellington region apart from Masterton, which was very cold and had a mean minimum of 7.1°c, and resulted in wasp nests being very quiet. Warmer temperatures during November can improve the initiation of hibernating queen wasps.

By monitoring wasps on a regional basis we hope to monitor the effectiveness of any wasp biological control programme and understand the seasonal influences on wasp population dynamics. Interesting points from the 2009/10 season were:

- Overall reports were a much quieter season than previous years.
- The peak months for wasps in the GW region seemed to be late March and April. Last year it was earlier.
- Recorded nests numbers are significantly down this year except in the warmer parts of the region.
- GW responded to three human health complaints regarding wasp nests, in Martinborough, Trentham and Wainuiomata.

12.9 Argentine Ants

Argentine ants are a known pest in the Wellington region, with a relatively limited distribution. GW action against these ants will only be undertaken in areas of high environmental importance. GW offers information and advice to the public on how to control Argentine ants.

The most recent infestation of Argentine ants was in Seatoun, Wellington in early 2009. GW continues to undertake surveillance of the infestation, which covers approximately two blocks within the suburban area. Biosecurity staff have alerted the residents to the problem and provided information on the recommended control methods. Many residents are undertaking control. The ants are usually only prevalent in the warmer summer months, limiting control to this period.

12.10 Magpie population trend survey

The magpie population study started in 2005. The 20 sites are all in the Wairarapa and receive no formal control. The aim of the survey is to assess magpie density at these sites and track changes over time. This ongoing survey will give some insight into the population trends for territory holding magpies, as well as any long-term change in the observed frequency of non-territorial flocks of roaming juveniles. This enables GW to gain knowledge about magpie population dynamics and form a knowledge base on which to build control operations in the future. The information will also assist in performing a cost benefit analysis of region-wide magpie control.

Magpies may prey on, displace or out-compete other bird species (Parker, 2007; Boulton & Cassey, 2006) and so have a negative impact on native biodiversity. They are also a concern from the human health perspective as they can become aggressive during the breeding season.

Distance sampling was used to determine the numbers and densities of magpies at the survey sites. The survey points are greater than 7km apart because the average juvenile dispersal rate is approximately 7km. Each survey point was given a GPS co-ordinate accurate to five metres.

This year 205 birds were recorded all in small familial groups as opposed to 245 birds in 2008. The variation, shown by the confidence interval, for the average number of birds per site (excluding large non-territorial flocks) suggests that the population is stable.

Findings

- The number of tribes (small breeding flocks of less than 30 birds), with more than 10 birds has increased this year (nine compared to five in 2009).
- The number of tribes with less than five birds has decreased.
- The average size of breeding tribes is 10 birds this season.

- One site did not record a magpie, but it was a different site from last year.
- There was no large non-breeding, non-territorial flocks reported this year.

Large groups of birds (>30) counted at one site are presumed to be non-territorial transient flocks of juvenile birds (Department of Environment and Climate Change NSW, 2007). Small flocks are presumed to be territorial familial breeding groups of tribes (Australia museum on line, 2005). The non-territorial flock is excluded from the per site average analysis primarily because of their inherent mobility, the variability of numbers in non-territorial large flocks and the statistical influence this outlier would have on the average.

Results indicate that magpies are regionally widespread and although numbers fluctuate, the population size appears relatively stable. Monitor results suggest it likely that most of the suitable breeding habitat in the Wairarapa is occupied.

There was no significant change in the total number of birds reported. There was no large, non-territorial, flock reported this year. They may merely have been missed during the count because these flocks are transitory in nature. The results indicate that the number of birds associated with small territorial familial groups has increased. Either there are more sites occupied by breeding groups or there are more breeding groups at each site or both. There was one site where no birds were observed. It is usual for there to be no birds present of observed at one or two sites each year.

If magpies are impacting negatively on native species the pressure will remain unchanged over the long-term. The number of magpies remains relatively static so the level of pressure generated will also remain static.

There appears to be a cyclic pattern emerging. The cycle starts with years where there are large numbers of familial groups consisting of 10 or more birds, and there are no large non-breeding flocks observed. The following season, the large familial groups appear to break down and there are more breeding tribes with less than five birds in them, and a large non-breeding flock establishes. Over the next three seasons, the size of the familial groups increase and the size of the non-breeding group get smaller. The cycle starts over as the size of the familial groups approaches 30, the large non-breeding group disperses and individuals establish their own territories.

12.11 Bird monitoring

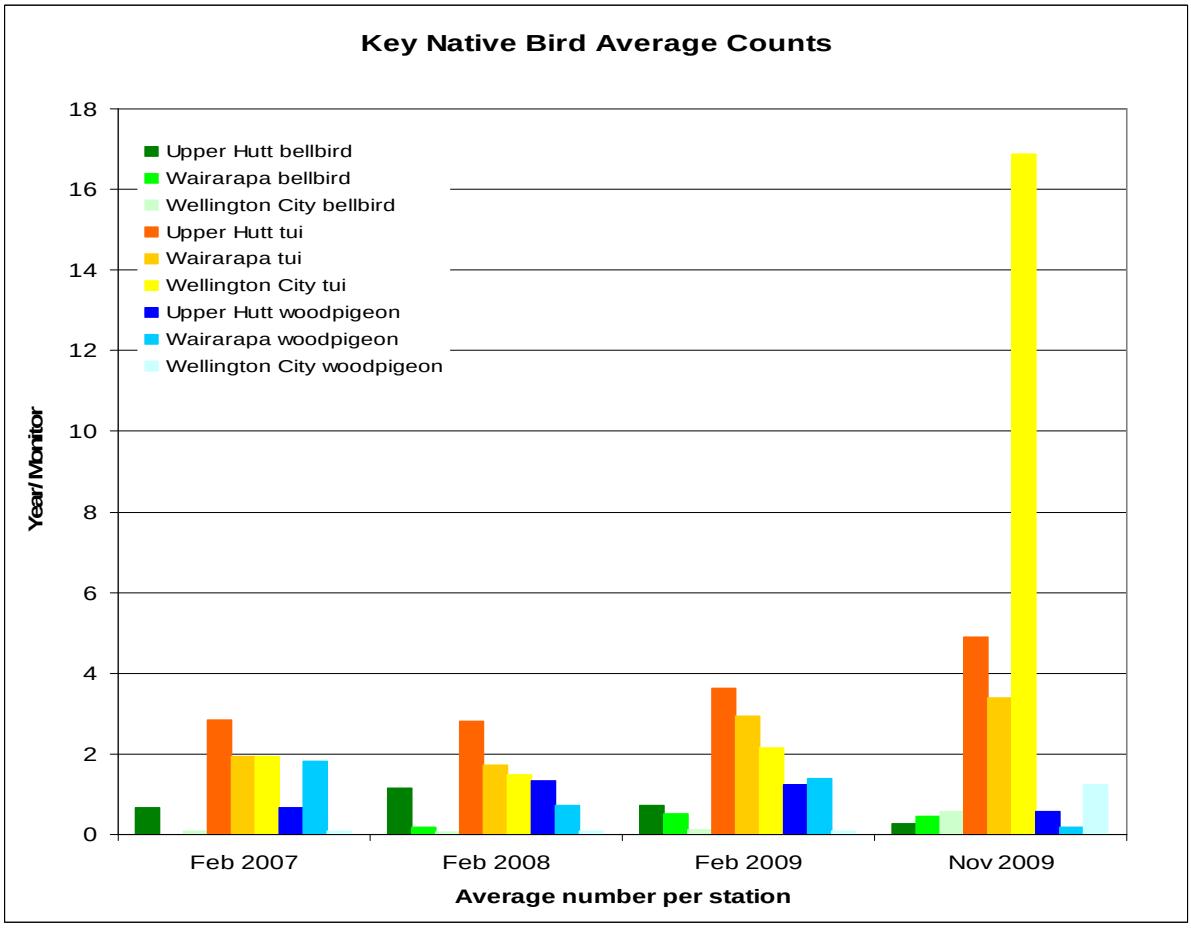
Five-minute bird count monitoring surveys are conducted annually. The aim of this monitor is to determine bird abundance and distribution trends. This season 21 reserves in the GW region were monitored in five sub-regions; nine in Wellington City, seven in Upper Hutt, three in the Wairarapa and one each in Waikanae and Porirua.

The key indicator species, tui (Prosthemadera novaeseelandiae), kereru (Hemiphaga novaeseelandiae) and bellbird (Anthornis melanura) appear to have different population dynamics in each sub-region.

- Tuis were more abundant in the Hutt Valley than in the Wairarapa and Wellington. They appear to be slowly increasing in the Wairarapa and Porirua, whereas in Upper Hutt they appear to have declined over the last several years, but are now increasing again

- Kereru populations appear to be stable with similar abundance in all sub-regions, except Wellington City, where they are comparatively low

- Bellbirds appear to be increasing in Porirua, Wairarapa and Wellington City but are decreasing in Upper Hutt



12.12 Collaborative programme

Overview – the power of partnerships

The key to successful environmental projects is developing partnerships with other stakeholders, especially the community. Synergies gained from these relationships provide the greatest strength and results in protecting and restoring our precious areas of biodiversity.

12.13 Pest Animals

Long Gully Bush Reserve KNEMA

Long Gully Bush is part of the GW KNE programme. GW undertook an initial knockdown of possums in 2007 and has provided an ongoing supply of bait to maintain the block. It was hoped volunteers would be able to assist with labour.

For various reasons the volunteer programme has been unsuccessful and the GW Pest Animals Team have continued the control in Long Gully Bush with the assistance of funding from the Wellington Natural Heritage Trust (WNHT), who own most of the land.

In the year July 2009 to June 2010 the DOC200 mustelids traps have been maintained, and possums targeted with Warrior traps on the southern boundary. Possums were also controlled with Feratox cyanide and rats poisoned with pindone pellets. Vegetation has been cleared on some of the overgrown bait station and trap lines.

WNHT have secured funding for a further two years through the Biodiversity Condition Fund and GW are trying to secure more funding to carry on this work, although this is not guaranteed. GW's continued investment of time and resources into this block has been justified by continued sightings of saddlebacks, robins, kaka and bellbirds in Long Gully. The 2009/10 season has seen an increased number of juvenile saddlebacks and un-banded robins, suggesting these species may be breeding outside of the Zealandia Sanctuary.

12.13.1 Rat Control on Taputeranga Island

Taputeranga Island is the small island situated on the Wellington south coast at Island Bay. Biosecurity staff has, at the request of Wellington City Council, installed bait stations on the island to provide ongoing rat control. Control will need to be ongoing as rats can quite easily reinvade this island from the mainland. However, it should be possible to achieve eradication and then keep rat levels to zero density. Taputeranga Island is home to the Little Blue Penguin and part of the Taputeranga Marine Reserve. Wellington City Council will fund the operation and is working in co-operation with iwi.

This is just an example of the opportunities for GW to assist in improving the ecological health of the region and gradually shift the prime focus on possums to include other predators where it is practicable to do so.

12.14 Pest Plants

12.14.1 Community MAX employment project

The Ministry of Social Development offered a subsidised employment scheme undertaking work on community projects. The Pest Plant Section recognised the opportunity to give current restoration activity an injection of ground activity. . It provided an opportunity for young people to build skills and work experience while contributing to the community.

Staff recognised that council supports the environment, community and economy. This project delivered successful outcomes in all three areas

The team has staff experienced in many such schemes and recognised the need for undertaking meaningful work in line with our current restoration priorities. We canvassed our current biodiversity partners within council and external agencies. Funds and support was secured to employ 15 for six months. The project based 10 employees in the Hutt and five in Masterton.

Recruitment, induction and training were crucial steps taken to ensure all of the new employees gained knowledge of council employee requirements and behaviour. Key to achieving successful outcomes was having well trained and dedicated employees. Staff dedicated a lot of time to each team to ensure full benefit was received.

In general the project outcomes included:

- Is known to and shown the Ministry of Social Development that GW can provide reliable service for available funds longer term.

- The section has improved our collaborative biodiversity relationships internally and externally.

- Generated combined revenue of $274,400 directly allocated to ground operations.

- Provided 1,638 man days on environmental restoration and training activities.

- Provided an opportunity to train employees in environmental restoration practices and offer them to potential employers – contractors, DOC and other GW departments. Over 60% of the team went to new employees. One is employed in the GW Parks Department and three with environmental pest contractors.

- The team outputs were on par with contractors in terms of quality and productivity and were assessed as such.

- The project received positive recognition by all stakeholders. This is in terms of each individual's growth, economy, environment and bringing together many people.

- Many sites received ground activity allowing restoration outcomes to move well ahead of the annual plan.

- Many volunteer group members are elderly. These teams gave areas a much needed physical effort, maintaining plantings or giving sites improved preparation for planting.

12.14.2 Summary of Restoration Activity Completed

Masterton crew

Tararua Range	Hutt Wardens and maintenance (DOC) 6 weeks
Miki Miki	Track cutting (DOC) new track 4 weeks
Riversdale Dunes	Weed removal and control plus planting (Land Management) 2 weeks
Te Humenga Point	Woody weed spraying (Land Management)
Makora Stream	Weed removal and spread wood chip mulch (Land Management)
Ruamahanga River Kahutara	Old man's beard control (Flood Protection) 3 weeks
Papawai Stream	Blackberry spraying and shelterbelt weeding (Land Management)
Tauherenikau	Tradescantia and woody weed control (Biosecurity)
Wairarapa Moana	Digging 1,200 planting holes, slash and fence remove (Parks)
Waiohine Gorge	Wilding pine control (DOC) for week
Waipoua River	Old man's beard control (Masterton District Council)
Lower Makoura Stream	Woody weed control (Land Management)
Forest (500)	Tree guard removal (Masterton District Council)
Wairio Wetland	Planting (Land Management)
Lake Ferry Escarpment	Boneseed control (Biosecurity)

Hutt Team

Tinakori Hill	Wilding pines >3,000 mostly pines and macrocarpa
Waikanae Otaki Rivers	Over 3ha treated for climbers, banana passionfruit, Japanese honeysuckle
Forest Lakes camp	Treated blackberry, climbers, groundcovers
Paekakariki Escarpment	Spray of Cape ivy, release of planted natives
Haywards Reserve	Several ha of climbing asparagus
Tarakena Bay	Approximately 1,000 karo over 12ha
Witako	Approximately 200 invasive acacias
Eastbourne	Substantial amounts of boneseed, minimal gorse
Take Care	8 groups serviced (site prepared and maintained) in the western zone
QE Park	20,000 spot sprays >7,000 plants planted in restoration project
Riverstone, Hutt River	Flood Protection Department approximately 200ha of old man's beard cut, treated and sprayed

Community MAX Team working on boneseed at southern Eastbourne Beach

13. Other

- **GW Flood Protection** - Waikanae River Dricon Reach and Otaki River and Estuary

- **GW Environment (Wetlands)** - Waimeha Lagoon, Te Hapua Wetlands, Te Harekeke (Kawakahia), Otaki Estuary, Riversdale Wetland

- **GW Environment (Take Care)** - Island Bay Dunes, Albemarle Stream, Moehau Stream, Owhiro Stream, Glenside Stream, Churton Park Stream, Waitohu Dunes, DUNE, Waimeha Dune Group Staff provided support and advice to "Take Care" coordinators and groups on many projects outside the KNE programme, as well as educating on weed control pre and post planting.

- **GW Parks** - Pencarrow dunes

- **QEII Natural Trust** - Te Hapua wetlands, Te Harakeke (Kawakahia), Bagshot Covenant

- **Department of Conservation** - Pukerua Bay Escarpment, Waikanae Estuary, Pencarrow Dunes, Boggy Pond, Ngawi

- **Private landowners** - Nga Manu, Trimble Trust and Rewanui, Tauherenikau Bush and Donald family

- **NZ Transport Authority** - The Authority paid for extensive environmental pest control on SH 58 above Keith George Memorial Park, in Upper Hutt

- **NZ Forest Restoration Trust** – provided advice and small funding towards pest control at Pigeon Bush