



Greater Wellington

Regional Pest Management Strategy Operational Plan Report 2010/11

Quality for Life



greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao





Regional Pest Management Strategy 2002-2022

Pest Animals and Pest Plants

Operational Plan Report 2010/11

Biosecurity Department

Contents

1.	Introduction	5
2.	Regional Pest Management Strategy implementation	5
	Part One	6
	Pest Animals	6
3.	Species led programmes	6
3.1	Surveillance species	6
3.2	Total control pest animals – rooks	7
3.3	Suppression species - rabbits	10
3.4	Rabbit trend monitoring	13
3.5	Site-Led species – human health – magpies	14
3.6	Site-Led species – human health – wasps	14
3.7	Site-Led Mt Bruce (Pukaha) predator buffer	15
3.8	Site-Led – biodiversity – feral and unwanted cats	16
3.9	Site-Led – biodiversity – possum	17
3.10	Site-Led – biodiversity species	19
3.11	Site-Led - Key Native Ecosystems, Reserves and Forest Health	20
4.	Client enquiries 2010/11	23
4.1	Retailer inspections	23
5.	Financial summary	24
	Part Two	25
	Pest Plants	25
6.	Overview	25
7.	Species led programmes	25
7.1	Surveillance species	25
7.2	Total control species	30
7.3	Containment species	33
7.4	Site-Led boundary control and human health species	36
8.	Client response enquiries	37
8.1	Site-Led – Key Native Ecosystems, Reserves and Forest Health	38
9.	Biological control	42
9.1	Biological control activities	42
9.1.1	Monitoring	42
9.1.2	Releases	43
9.1.3	Transfers	44
9.2	Collective activity	46
9.3	Biocontrol training	47

10.	Public awareness	47
10.1	Communications plan	47
10.2	Articles	47
10.3	Presentations/shows	48
11.	Financial summary	48
Part Three		49
Biosecurity/Biodiversity – programme and monitoring		49
12.	KNE Operations	49
12.1	Possum and predator control	49
12.2	Trend monitoring for possums	50
12.3	Rodent monitoring in Key Native Ecosystems	51
12.4	Wasp Season 2010/11	52
12.5	Magpie monitoring in the Wairarapa	53
12.6	Native bird monitoring	54
12.7	Collaborative programme	56
12.8	Pest Animals	56
12.9	Pest Plants	62
12.9.1	Whitireia Park aerial gorse control	62
12.9.2	Hayward Scenic Reserve buffer zone survey	62
13.	Other	63
Appendix 1		65

1. Introduction

The purpose of the Regional Pest Management Strategy 2002-2022 (RPMS) 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 RPMS 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 RPMS 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 ninth since the implementation of the RPMS. This is the second year of the reviewed RPMS document. The 2010/11 year saw continued control on many of our key pest species. The nine years of the RPMS 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 RPMS 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 2010/11 year.

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

2. Regional Pest Management Strategy implementation

The Regional Pest Management Strategy 2002-2022 Five Year Review document became operational on 12 June 2009.

The 2010/11 year was the second that all species control and site management was undertaken under the reviewed RPMS. The RPMS continues to be implemented effectively, with stakeholders and the public becoming accustomed to changes from the previous RPMS. GW continues to work in conjunction with city and district councils to implement pest management under the RPMS.

The end year result for pest management under the RPMS was an operating surplus of \$6,400 (0.2%) from the total budget of \$3,171,700.

Please refer to sections 5 and 11 'Financial summary' for further information.

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 \$30,870

Annual cost: The cost of surveillance species management (monitoring, investigation, publicity and reporting) for the region was \$1,185

Means of achievement

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

Actual performance

In the 2010/11 year a survey was completed of the known infestation of Argentine ants in Alicetown, Lower Hutt. The affected area has increased in size since the previous survey five years ago, but is still limited to a handful of suburban streets west of Fitzherbert Street. A fact-sheet was prepared that is available to alert the public to the impacts and control options for Argentine ants. An article describing GWs Surveillance species was published in 'The Wellingtonian' in March 2011.

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 2010/11 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 2010/11 year.

3.2 Total control pest animals – rooks

Aim: To manage rooks as a Total Control Category pest to levels that protect production systems at a cost of \$68,610

Annual cost: The cost of rook management (surveys, research, compliance, education) for the region was \$53,726

Means of Achievement

- (i) Undertake **direct control by service delivery** where rooks are known to exist.

Actual performance

In the 2010/11 year, aerial nest baiting was carried out at 10 breeding rookeries within the Wairarapa region.

These represent all known breeding rookeries on our database. A total of 70 nests were baited in the Wellington region. Fresh but unused nests were also baited and these were factored into the 70 nest total. Nest baiting was delayed this year due to weather related issues. Several days of nor-west gales combined with a heavy dumping of snow over the Wairarapa delayed baiting by a week with the first control run completed in early October. The nest baiting programme was completed on the 20th October.

Biosecurity staff confirmed the presence of a few rooks in Ohariu Valley in the Western Zone during the breeding season. There was no evidence of nesting taking place. Staff annually contact land owners in the area to try and gather information on where these birds are frequenting and any activities that may indicate nesting attempts. There were no reports of nesting activity, and there was no need for aerial surveillance in the Western Zone.

There was one ground baiting operation for rooks carried out at Pirinoa during the year. Approximately 50 birds were targeted on emerging barley with a satisfactory post control outcome. An unsuccessful attempt was made to bait rooks under walnut trees in the Tinui District, with the baits proving unattractive with the abundance of walnuts available to them.

The nest baiting programme continues to be successful with just one report of crop damage for 2010/11. The reduction from 150 treated nests in 2009/10 to 70 nests in 2010/11 is further evidence of the success of the aerial programme.

Means of Achievement

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

Actual performance

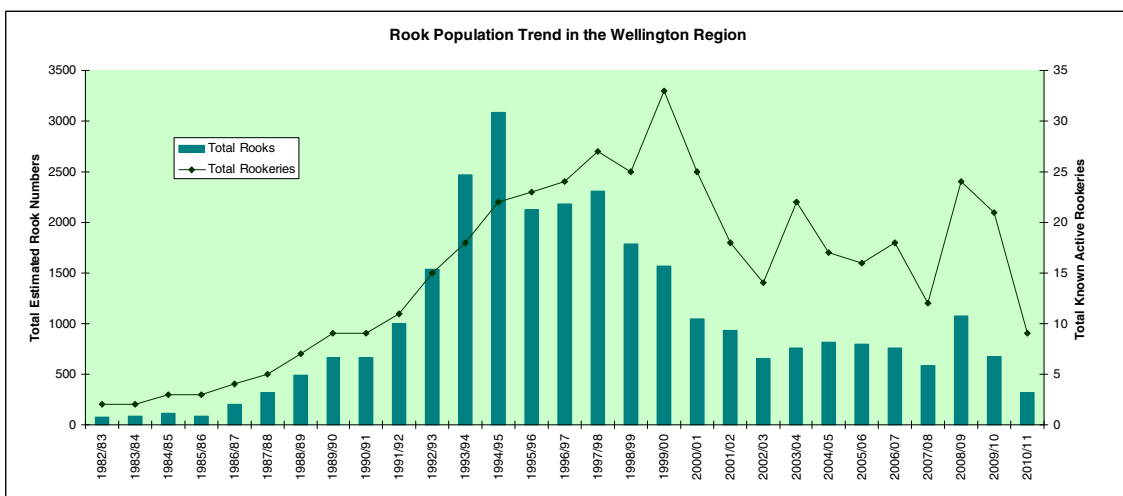
In the 2010/11 year, all new, old or historical sites were visited to determine the presence or absence of rooks. Aerial surveys were mostly utilised. Ground

surveys cannot tell us the state of a rookery (state of incubation). Knowing the state of incubation is important as it assists with timing 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 total rook population of the region. With this calculation, one nest is equivalent to four and a half rooks.

The aerial survey in combination with calls for rook sightings from the public identified the presence of two new rookeries and the reactivation of two old rookeries. This was a positive outcome.

Once again GW prepared media material that was published in the Wairarapa Midweek urging the public to report sightings of rooks or rookeries. A month long advertisement was run on local radio that carried the same theme.



Means of Achievement

- (iii) 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, and this seems unlikely in the near future.

Means of Achievement

- (iv) Ensure compliance with the RPMS rules in order to achieve the RPMS objectives.

Actual performance

A display about rooks was presented at the Clareville and Masterton agricultural field days and the Otaki field days. Information about rooks was freely available to the public.

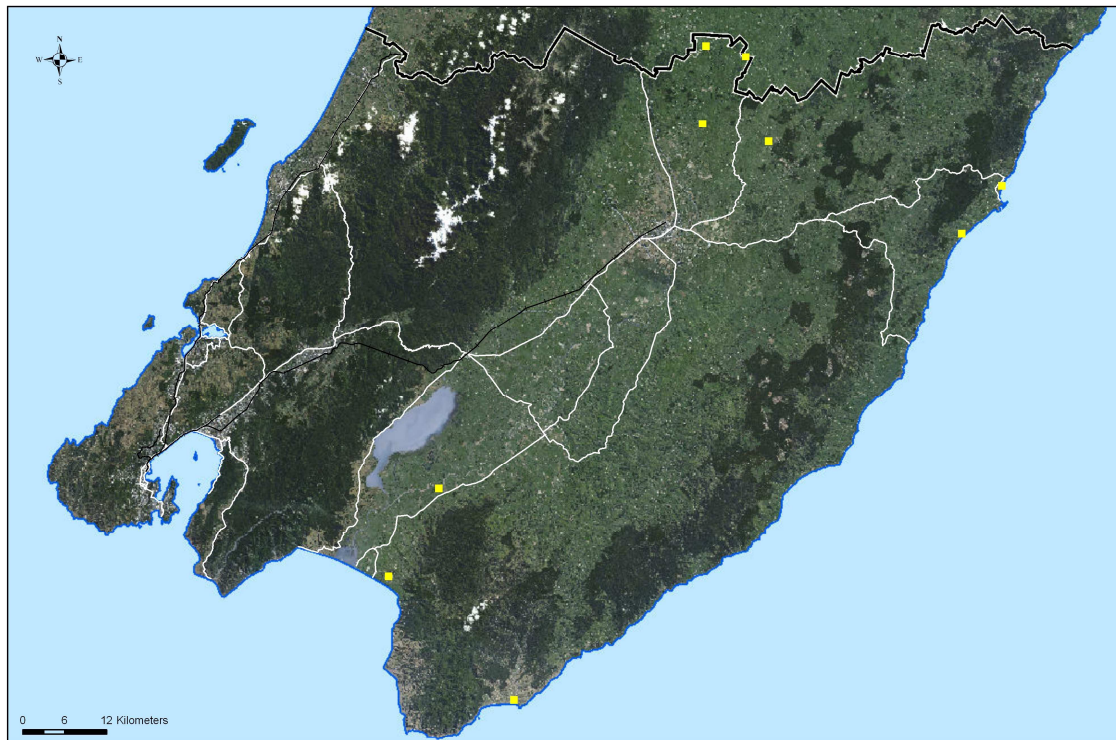
Landowners with rookeries are constantly reminded that rooks are both shy and cunning and that ad hoc attempts at control can lead to rookery fragmentation and dispersal over a wider area. When gaining landowner permission to treat rook nests, landowners were reminded of the dangers of shooting or scaring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

Means of Achievement

- (v) Encourage Horizons Regional Council to actively pursue management of rooks within their region that complements GWs Rook Total Control programme.

Actual performance

Horizons Regional Council (Horizons) was actively involved with aerial nest baiting in the 2010/11 year. Both GW and Horizons were involved in the annual joint nest baiting programme on either side of the regional boundary. This is designed to stem the southward migration of rooks to the Wairarapa.



Rookery Locations 2010

1:555,906
Copyright : GVR/C/NZAM
Topographic and Cadastral data is copyright LINZ

Means of Achievement

- (vi) 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 \$109,780

Annual Cost: The cost of rabbit management (surveys, service delivery, biological control, compliance, education and research) for the region was \$134,449

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 3 was the highest level recorded on the Tauherenikau River system. Many of the sand and silt terraces have disappeared due to GW contractors with heavy machinery carrying out cross-blading and pole planting to protect accretion areas. Rabbits prefer these sandy beaches when available to them. Any rabbits are presently confined to heavy cover made up of blackberry, broom, gorse and tall fescue etc.

Rabbits periodically become an amenity nuisance around the Riversdale Beach and Castlepoint resorts on the East Coast, but the population did not reach the level that requires regulatory intervention by GW.

Western Zone – Wellington

No site scored level 5 or above on the Modified McLean scale. Most rabbit control work is to protect new plantings in re-vegetation projects by care groups, councils and private land owners. A large operation was undertaken for the Paraparaumu Airport and Metservice to prevent digging on the taxi way of the airport.

Pindone carrot is still used extensively, along with night shooting and fumigation. Regular night shooting is undertaken for Wellington City Council and Kapiti Coast District Council in urban parks to maintain rabbit numbers at low levels. These high public use areas continue to present a challenge for staff to control.

Means of achievement

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

Actual performance

Eastern Zone - Wairarapa

There was one localised rabbit infestation recorded at Level 5 on the Modified McLean Scale but there were no investigations required for breaches of the RPMS 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 RPMS 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 2010/11 year a small number of historically rabbit prone properties across the Wairarapa were inspected to provide a snapshot of the current rabbit trend for the region.

Across the four properties that were inspected the infestation level ranged from Level 2 and 3 up to Level 5 on one small property. There was no enforcement directed at the landowner as his rabbit situation was not impacting directly on adjacent properties. Private shooters were active on the property providing some level of control. Level 5 on the Modified McLean Scale is the trigger for remedial control to take place particularly when adjacent properties are exposed to risk of infestation.

There has been no blood sampling of Wairarapa rabbits for Calicivirus antibodies since April 2008. The last sampling at that time disclosed immunity levels of 57%. Continued low rabbit populations in the Eastern Zone is the main reason for blood sampling to be discontinued for the present.

Western Zone – Wellington

The rabbit prone areas of the Kapiti coast were monitored in late May 2010, with rabbits present throughout in low numbers. Hot spots still exist 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 RPMS 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 2010/11 period. The virus continues to cycle naturally in some areas, but resistance tests were not undertaken this year due to budget restraints.

Means of achievement

- (vii) Support research initiatives including biological control.

Actual performance

Biosecurity staff provided expert advice at a two day workshop for the development of a national rabbit accreditation training programme for regional councils run by the National Pest Control Agency (NPCA).

Means of achievement

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

Actual performance

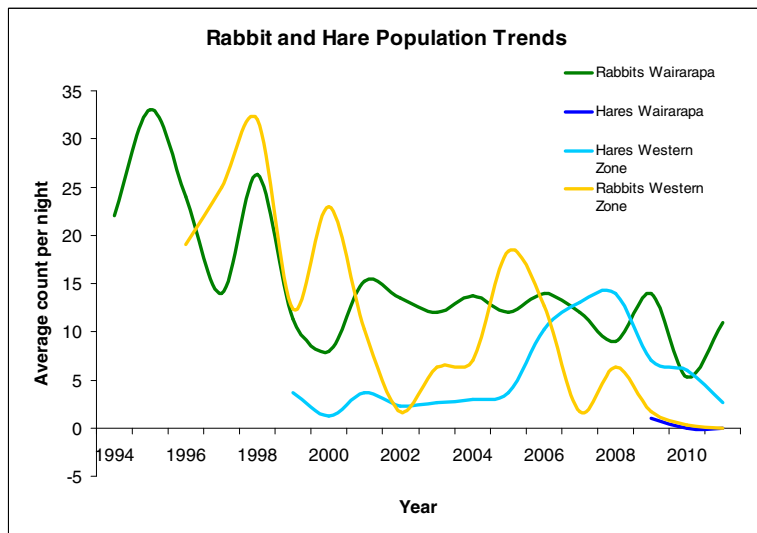
Biosecurity staff conducted impromptu visits to pet shops across the region during the year. All retailers were referred to Section 52 and 53 of the Biosecurity Act 1993 reminding them that it is an offence to hold for sale animals and plants identified in the RPMS document.

3.4 Rabbit trend monitoring

Rabbit and hare trend night counts

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 or June. The aim of the monitoring is to determine the trend of rabbit and hare activity in the absence of formal control at these sites.

Rabbit counts in the Wairarapa appear to have increased since 2010 while rabbit counts in the Western Zone continue on a downward trend. Hare counts in the Western Zone have remained low over the past few years following a spike in count numbers in 2008. Hare counts in the Wairarapa remain low.



Rabbit and hare night count trends on the Tora Coast and Queen Elizabeth II Regional Park

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 \$42,880

Annual Cost: The cost of magpie management to minimise adverse environmental and health impacts for the region was \$49,864

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 11 urgent complaints logged in the Eastern Zone and three in the Western Zone 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 Eastern Zone and 46 in the Western Zone. All calls in both the zones 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 and can be delivered. Staff provide advice on 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 \$5,150

Annual Cost: The cost of wasp management to minimise the adverse human health and environmental impacts for the region was \$2,580

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 78 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 TA 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 (DOC), Rangitane o Wairarapa and the National Wildlife Trust at the Mount Bruce Scenic Reserve at a cost of \$42,880

Annual Cost: The cost for the predator control programme within the buffer for the 2010/11 financial year was \$40,557

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 monthly intervals, with reports of kills and bait-take supplied to Biosecurity staff after each service round. Trapping accounted for 54 cats, 21 ferrets, 318 hedgehogs and 202 rats during the 2010/11 servicing year, with a further unknown number of possums and rats controlled by the 70kg of brodifacoum baits which were used.

Analysis of various aspects of the control programme was undertaken during the service period. These included the effectiveness of various traps and baits. From this information we have been able to determine the most suitable traps and baits for cats or ferrets and the timing of use for the various baits.

Following the deaths of 12 kiwi in July to August 2010, a technical advisory group was formed to provide expert advice on predator control. GW has a representative on this group. The review of the 2010 incident recommended the updating of the Fenn trap to the more modern DOC 250 trap as resources allow. Ten DOC 250 traps were installed in January 2011 and a further 20 traps will be installed in late 2011.

3.8 Site-Led – biodiversity – feral and unwanted cats

Aim: Minimise the biodiversity impact of feral and unwanted cats at a cost of \$29,160

Annual cost: The cost for the management and publicity of feral and unwanted cats as a threat to biodiversity for the 2010/11 year was \$6,969

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 also 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 11,792ha in 25 KNE sites within the Wellington region. These sites are predominantly rural as there are issues controlling cats in urban areas because of the high number of domestic cats. GW also works in conjunction with TA's 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 de-sexing campaigns were abandoned this year because of financial constraints.

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 GWs 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 'managed' populations encourage support for unmanaged cat populations as well. Both 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 \$216,000

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 \$279,534

Means of achievement

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

Actual performance

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

Actual performance

Ongoing support is provided to 17 covenanted sites mainly 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 Control Programme (RPPCP) for the Wellington region commenced during the 2010/11 year. Activities included possum population monitoring to determine the required control intensity, and undertaking control operations.

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. There is additional information on the GW website on the management and control of possums.

GW assisted with the production of several NPCA documents that include national standards for aerial poisoning, bait station use and the toxin brodifacoum.

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. Cost recovery is undertaken where appropriate.

One QEII covenant on Paekakariki Hill Road received an initial possum knockdown with funding from GWs QEII Trust establishment fund. Bait stations were set up for the land owner to continue to maintain pests at low levels.

Biosecurity undertakes multi-species pest control work in GW Parks. Rats and possums are controlled in Dry Creek, Speedy's Reserve, Wainuiomata Mainland Island, Korokoro Valley, Whitireia Park and East Harbour. Mustelids, goats and pigs are controlled in the Pencarrow Lakes Block of East Harbour Regional Park.

Means of achievement

- (v) Support research initiatives including biological control.

Actual performance

Kaka have been interfering with possum control bait stations around New Zealand, causing problems for safe and effective possum control. Bait station trials were started with captive kaka at Wellington Zoo, to see if kaka could access different designs of possum bait stations. The results will be shared nationally.

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 \$25,730

Annual cost: The annual cost for minimising the environmental impacts of the Site-Led – biodiversity species in special sites was \$29,881

Means of achievement

- (i) Reduce densities of select Site-Led – biodiversity species in KNEs and TA reserves.

Actual performance

GW Biosecurity assists KNE landowners and TA'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 public and private property adjacent to KNE or 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. Illegal releasing of feral pigs has been evident on pigs caught in pig traps, with large breeding sows having no ears, making them harder for hunting dogs to catch.

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. GW produced a fact sheet to provide guidance and instruction to landowners wanting to trap feral pigs.

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 \$909,000

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 \$861,429

Means of achievement

- (i) Ensure KNEs are legally protected into perpetuity.

Actual performance

All of the KNEs treated during 2010/11 were legally protected (TA - 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.

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 92 sites, 37 on private land KNE and 55 on TA parks and reserves, totalling over 18,863ha within the region. All territorial reserve work was jointly funded with the relevant authorities. Bait take from each site is recorded and historical trends can be used to pre-empt changes in pest populations. This allows for better selection of toxins for individual sites, improving the effectiveness of the operations.

Means of achievement

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

Actual performance

GW has been involved with community groups undertaking pest control for many years. This involvement continued this year with over 20 groups participating.

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.

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.

Please refer to Section 3 'Species led programmes' for further information.

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.

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 were maintained. With available resources, priority was given to maintaining existing programmes, rather than taking on new works. Most areas were 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 Rewanui, Waihora, Sulphur Wells and Mount Bruce (Pukaha) Buffer on a monthly basis as predators in addition to possums and rats were targeted. Where pest plant and pest animal control occurs at the same site, every effort was made to coordinate the programmes.

Means of achievement

- (ix) Where KNEs are identified on TA 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 TAs on matters concerning pest management.

A Memorandum of Understanding (MOU) is prepared and agreed annually between GW and the western TAs. 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 because of their limited ownership of high value biodiversity sites.

Formal pest management programmes with Wellington, Lower Hutt, Upper Hutt and Porirua City Councils and with the Kapiti Coast District Council continued during the 2010/11 year. The direct costs for work undertaken on their land are equally shared between GW and the local authority.

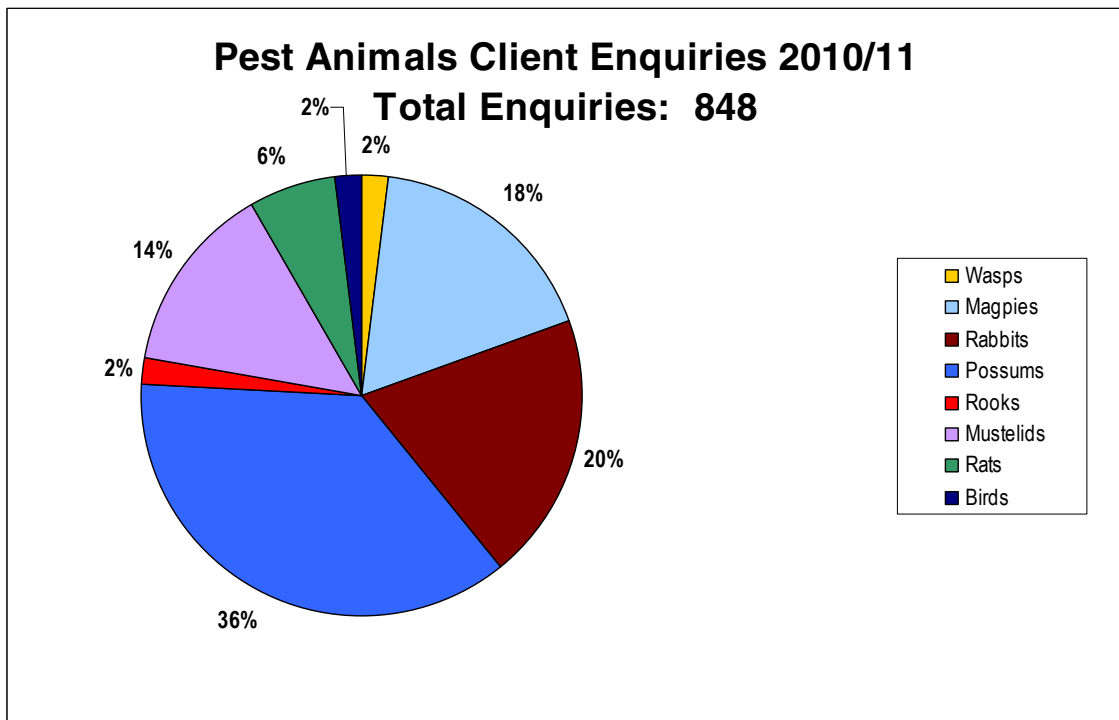
The work programmes are agreed between the parties and regular liaison is maintained. The TAs were invoiced monthly for their share of costs and contributed \$157,265 (from an original budget of \$145,325).

Please refer to section 12 'KNE Operations' for further information.

4. Client enquiries 2010/11

Total enquiries: 848

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 GW 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 2010/11 year.

Wairarapa

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

Western Zone

Twenty establishments were visited over two days in conjunction with the pest plants team. 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 deficit of \$35,900 (2.3%). Revenue was down by \$27,000 (1.55%) with operating expenditure up by \$11,800 (0.76%).

	\$ (000's)
Rates and Levies	1,210.7
External Revenue	192.2
Internal Revenue	124.0
Total Operating Revenue	1,526.9
Total Direct Expenditure	1,173.3
Divisional Overheads	389.5
Total Operating Expenditure	1,562.8
Deficit	(35.9)

Part Two

Pest Plants

6. Overview

During the 2010/11 year all required RPMS activities were completed with performance improvement in key areas. Delimiting surveys of all known total control sites were completed for the first time and trends showed the objectives for target species were achieved. Data collection and reporting processes continued to be refined and improved. There is now a better suite of information to compare progress against the operational plan.

GW Biosecurity continued to engage in collaborative projects with a number of national, regional and scientific organisations. Joint agency initiatives were actioned in the fields of biodiversity and biological control and in the development of response plans and management systems. Significant progress was achieved in working in partnership with the Bay of Plenty Regional Council (EBoP) towards developing a suite of integrated data management systems for the current and future business requirements of Biosecurity, Biodiversity and Land Management Departments. The opportunity for these systems to be implemented nationally gained substantial traction over the year as the project continued to gain support from other regional councils.

Biosecurity were involved in the Foundation for Research, Science and Technology (FRST) funded project “Beating Weeds II”; aimed to improve pest plant management, and the pilot programme “Weedy Wellington”; a case study for managing weeds at a catchment level.

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 \$206,910

Annual cost: The cost of managing Surveillance plants throughout the region during 2010/11 was \$284,691

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

National Pest Plant Accord (NPPA) inspections

Staff inspected all known plant outlets during the year. Some outlets had closed and two new ones were found. This information was entered on the Ministry of Agriculture & Forestry Biosecurity New Zealand (MAF BNZ) NPPA database.

All activity was reported to MAF BNZ. In total 167 known outlets were inspected in the region and all were compliant on inspection. There was one incident where a member of the public reported the NPPA species African club moss growing within the grounds of an outlet. Even though the plant was not for sale this is still an offence under the NPPA. The plant was destroyed after it was brought to the owner's notice.

Markets have been identified as an area of risk due to the growing attendance of amateur growers. Stallholders have generally been well organised. Information was given to all new stallholders and contact details gathered. A total of 13 markets were visited regularly during the year.

MAF BNZ notified GW of one person, not listed on the NPPA database, who was offering the seed of a banned species for sale via the internet. Their property was inspected and no seed or plants were found. The person concerned was provided with all relevant NPPA literature and cautioned with regard to their activities and TradeMe withdrew the auctions.

Means of achievement

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

Actual performance

All 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 and infestation size was accurate and the infestation size verified.

Biosecurity continues to research and assess 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 Biosecurity staff, the public, or through the Regional Surveillance pest plant programme.

Actual performance

A total of 890 delimiting inspections around Total Control sites were completed. This resulted in four new surveillance species sites being located for future delimiting; three bomarea and one Asiatic knotweed. 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	No. of Infested Sites
African fountain grass	Kapiti Coast	1
	South Wairarapa	1
		2
Asiatic knotweed	South Wairarapa	1
	Upper Hutt	1
	Wellington	26
		28
Australian sedge	Kapiti Coast	1
		1
Bomarea	Lower Hutt	22
	Kapiti Coast	6
	Wellington City	19
	Upper Hutt	1
		48
Chilean flame creeper	Carterton	2
	Masterton	1
	Upper Hutt City	4
		7
Chocolate vine	Carterton	25
	Lower Hutt	23
	Kapiti	21
	Masterton	29
	Porirua	4
	South Wairarapa	18
	Upper Hutt	29
	Wellington	33
		182
	Nassella tussock	Kapiti Coast
Porirua		1
		3
Purple loosestrife	Carterton	1
	Kapiti Coast	6
	Masterton	2
	9	
Senegal tea	Kapiti Coast	7
	Upper Hutt	1
		8
Spartina	Lower Hutt	2
	South Wairarapa	1
		3
White edged nightshade	Carterton	2
	Masterton	1
		3
Total:		293

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 Surveillance species. All other Surveillance species have been researched and recognised chemical treatments are available.

a) **Asiatic knotweed**

Trial work on Asiatic knotweed continued this year and progressed well. This plant is well known for being very difficult to control. Wellington City Council (WCC) currently manages known infestations.

At this stage in the trial the herbicide Grazon is proving to be the most effective chemical against Asiatic knotweed. While this is only the second season of the trial, based on current results, it is hoped that a suitable level of control will be achieved using Grazon. The use of Escort was stopped this year due to the concern for native species near the trial site and the residual effect it has in the soil. Physical control of the knotweed was not pursued this year due to the plants being intermixed with other valuable species making the sites unsuitable for this method.

Currently there are 28 sites of Asiatic knotweed registered on the Pest Plants database.

b) **Bomarea**

Trial work on bomarea continued into the third year. Bomarea is a very vigorous species which is known to be difficult to control. Currently Hutt City Council (HCC) targets this species for Total Control. To date the trial has shown that the herbicides Round Up, Tordon Brushkiller and Grazon applied once during the growing season (at label rates) give disappointing results with re-growth quickly re-establishing to the levels it was prior to the chemical application. Based on these results, this year the number of applications was increased to three per season at label rates. Early indications are that the results are certainly more encouraging.

Currently there are 48 sites of bomarea registered on the plants database.



Bomarea pre-control
Plot 1 10/12/10



Bomarea post control with Tordon Brushkiller
Plot 1 31/05/11

c) **Chocolate vine**

This species was sold by nurseries in the region until as recently as 2008 when it was included in the NPPA list of species banned for sale or propagation. This year the control trial was completed on chocolate vine as the results showed that all the three chemicals tested achieved satisfactory control. This means staff have a good range of control options available which can be selected depending on the individual conditions of each site.

Currently there are 182 sites of chocolate vine registered on the Pest Plants database.

d) **Polypodium**

Control trials on the manual removal of polypodium were set up at the only known site of polypodium in the region at Hongoeka Bay in Plimmerton. The trial showed that manual removal is too destructive and not a suitable option. Liaisons continue with landowners in an attempt to gain consent for the use of herbicide at the site. The Biodiversity department has allocated funds under their coastal programme to assist with control once consent is obtained.

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 annually to collective research funds. National annual funds available vary between \$550,000 and \$650,000. Contributions for research focus on priority projects that are decided by the funding contributors. A number of other regions have widespread infestations of species that are Surveillance species in GW, and are at low levels or not yet present in the region (e.g. nassella tussock, Chilean needle grass and alligator weed). These species are currently on the list for biocontrol research. Supporting the allocation of funds to target species not yet in the region is a long term strategy to help reduce the risk of these organisms entering the region.

Please refer to Section 9 'Biological control' for more information.

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

Staff attended training on NPPA plant identification run by MAF BNZ. An aquatic weed identification workshop, held by NIWA, was also attended, providing training for identification of aquatic NPPA species.

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

Didymo

Staff managed the MAF BNZ funded Didymo awareness programme (\$20,000) in 2010/11 with field work and advocacy conducted throughout the region. This year focus was put on the prevention of the spread of other aquatic weeds as well as Didymo. A number of new information signs were erected, all old signs were checked and serviced. Information material was provided to many water resource user groups. A number of water based events were attended and presentations were given to relevant GW departments.

Please refer to Section 10 'Public awareness' for more information.

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 \$328,250

Annual cost: The cost of managing Total Control plants throughout the region during 2010/11 was \$222,369

Means of achievement

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

Actual performance

This year 29 new Total Control sites were located through delimiting surveys and public reports across the region, including two African feather grass, 10 blue passion flower, one climbing spindleberry, 12 Madeira vine, three moth plant and one perennial nettle site.

Delimiting of Total Control sites

Staff continued the priority task of delimiting all known Total Control sites. The project was completed during the year. Discoveries of new sites required continual review of the delimit plan design.

The project has been in progress for five years and apart from new sites identified in the future, the Total Control delimiting programme is now complete.

This year a total of 890 properties were surveyed. This resulted in 10 new Total Control species sites being located. New sites were located within the original survey area, which resulted in surveys of additional properties. A number of additional sites were inspected following reports from the public.

The areas inspected often had a mix of target species, and the surveys generally discovered other species than those targeted. These areas were generally older urban properties with well-established gardens, or modern subdivisions on the west coast.

Discovery rate of Total Control sites for the delimiting survey programme

	Properties surveyed	Total Control Species Found	%
Season 2007/2008	1,302	49	3.8
Season 2008/2009	6,409	54	0.9
Season 2009/2010	3,670	42	1.1
Season 2010/2011	890	10	1.1
Overall	12,271	155	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 1,235 known Total Control sites were inspected and controlled during the year. Some sites were visited up to five times annually depending on the reproductive ability of the targeted Total Control species and seasonal weather (e.g. Bathurst bur and saffron thistle). Others were only visited once (e.g. blue passion flower and moth plant).

Annual inspections and control activities were again completed utilising contract labour and staff. Staff completed the 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 the year for sites visited multiple times.

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.

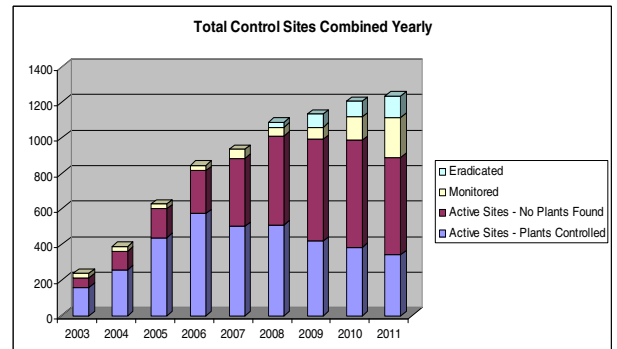
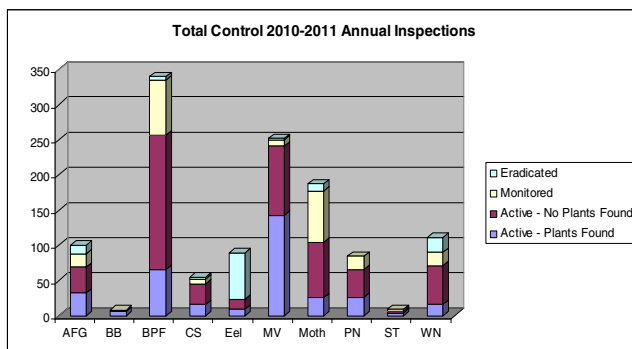
The effectiveness of the dedicated effort for rapid control can be seen by:

- 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	32	6	66	16	9	143	25	26	4	16	343
Active - No Plants Found	37	1	191	29	14	98	79	40	3	55	547
Monitored	19	1	78	7		9	73	18	2	19	226
Eradicated	12		5	3	66	2	10			21	119
Known sites	100	8	340	55	89	252	187	84	9	111	1,235

Total Control Combined Results



The graphs depict the forward progress made with a decrease in the number of active sites and an increase in eradicated and monitored sites

Manchurian wild rice and Cape tulip – MAF National Interest Pest Plant Response (NIPPR) contracts

Manchurian wild rice and Cape tulip are NIPPR species and therefore both total control species are nationwide. Control work on these species in the region is funded by MAF and managed by GW. This year in addition to the twice yearly control on Manchurian wild rice an extensive delimiting survey was conducted, the control methods were reviewed, and the action plan was revised in collaboration with MAF and NIWA.

All Cape tulip sites were inspected with plants removed at two of the five sites.

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

Please refer to Section 10 ‘Public awareness’ for more information.

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

Please refer to Section 7.1 ‘Surveillance (NPPA inspections)’ for more information.

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 and moth plant) and which have biological control projects in progress. 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. This year a biological control agent was successfully released for woolly nightshade in the Bay of Plenty.

Please refer to Section 9 ‘Biological control’ for more information.

7.3 Containment species

Aim: To control all Containment species outside the Containment zones within the Wellington region at a cost of \$177,350

Annual cost: The cost of managing Containment plants throughout the region during 2010/11 was \$183,635

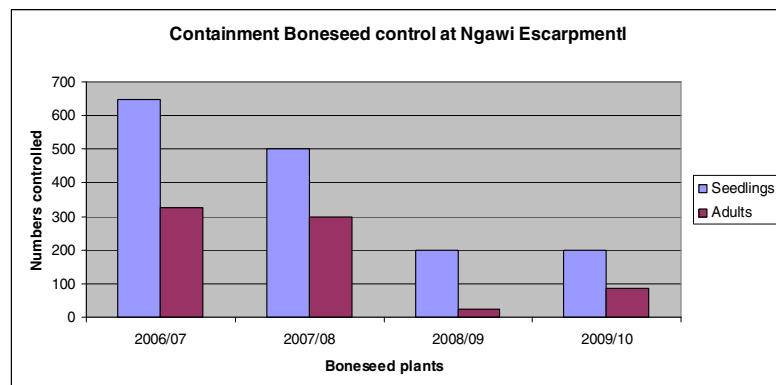
Means of achievement

- (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 in the Total Control zone were inspected through early spring. In South Wairarapa a continued trend of reduced numbers was seen at



Whatarangi, Whangaimoana and Mangatoetoe. However, significant numbers of plants were found at Lake Ferry. A large portion of the Ngawi escarpment was worked on foot with plant numbers declining as depicted in the graph above. An aerial contract was carried out on the inaccessible areas of the escarpment. This aerial work is done bi-annually rather than annually to fit within budget restraints, however this means that mature plants are occasionally still being found each year. Due to the size of the escarpment and difficult nature of the terrain it is expected the Ngawi escarpment site will remain active for a number of years yet.

New sites were found at Castlepoint and Riversdale indicating all properties need to be inspected next year. As was expected the dunes at Riversdale proved to be difficult to clear due to the terrain and the size of the area.

The specific exclusion zone on the Western Zone escarpments at Titahi Bay were inspected and assessed for helicopter versus abseiling control options. In the coming year abseiling work is expected to be utilised to control the inaccessible plants.

This year the Te Kopahau Reserve on Wellington's South Coast was recognised as a Containment zone (specific exclusions site) and work was conducted there for the first time. A ground sweeping contract was carried out by Kaitiaki O Ngahere with over 3,000 plants controlled. Aerial work on inaccessible plants is planned for the 2011/12 year.

The Coates' coastal bush property in Pukerua Bay was swept and boneseed controlled as was the neighbouring escarpment alongside the beach and road.

Over 15ha of Kapiti Dunelands was swept and controlled for boneseed with the numbers and size of plants recorded reduced significantly from five years ago.

b) **Hornwort**

An update of the hornwort status at Lake Wairarapa was presented to the Wairarapa Moana Group. Positive feedback was received from the Group with a request to develop a control strategy for the Group to consider.

Aerial spraying of hornwort was carried out at Boggy Pond in conjunction with DOC. The operation went smoothly with good control results achieved and one hundred percent compliance attained for all consent conditions.

Work continued on the development of a restoration plan for Forest Lakes near Otaki that includes hornwort control.

The one known site of hornwort in the Masterton District was inspected with no plants found. No new sites were located during the year.

c) Evergreen buckthorn

No work was carried out on this plant during this year in the Eastern Zone. A few plants were controlled on the Kapiti dunelands.

d) Sweet pea shrub

There were no sites of this species found outside the containment area 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

Please refer to Section 10 ‘Public awareness’ for more information.

Means of achievement

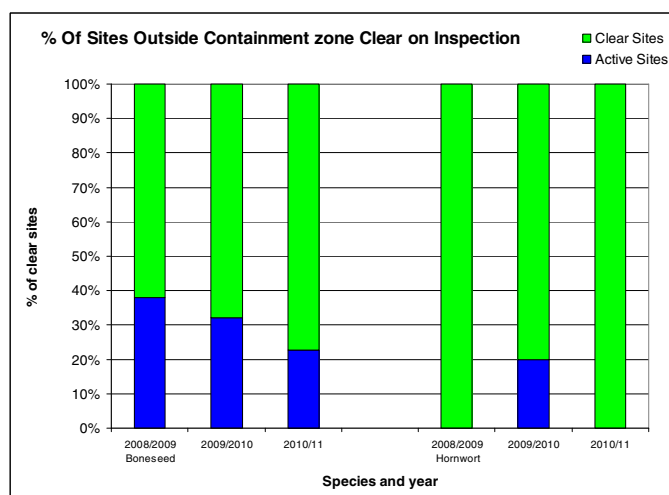
- (iii) Identify new sites of Containment species outside the Containment zones through incidental reports by Biosecurity staff, the public, or through the Regional Surveillance pest plant programme.

Actual performance

No new sites of Containment species were found this year.

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

Please refer to Section 7.1 ‘Surveillance (NPPA inspections)’ for more information.

Means of achievement

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

Actual performance

Please refer to Section 9 ‘Biological control’ for more information.

7.4 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 \$202,240

Annual cost: The cost of managing Containment plants throughout the region during 2010/11 was \$225,467

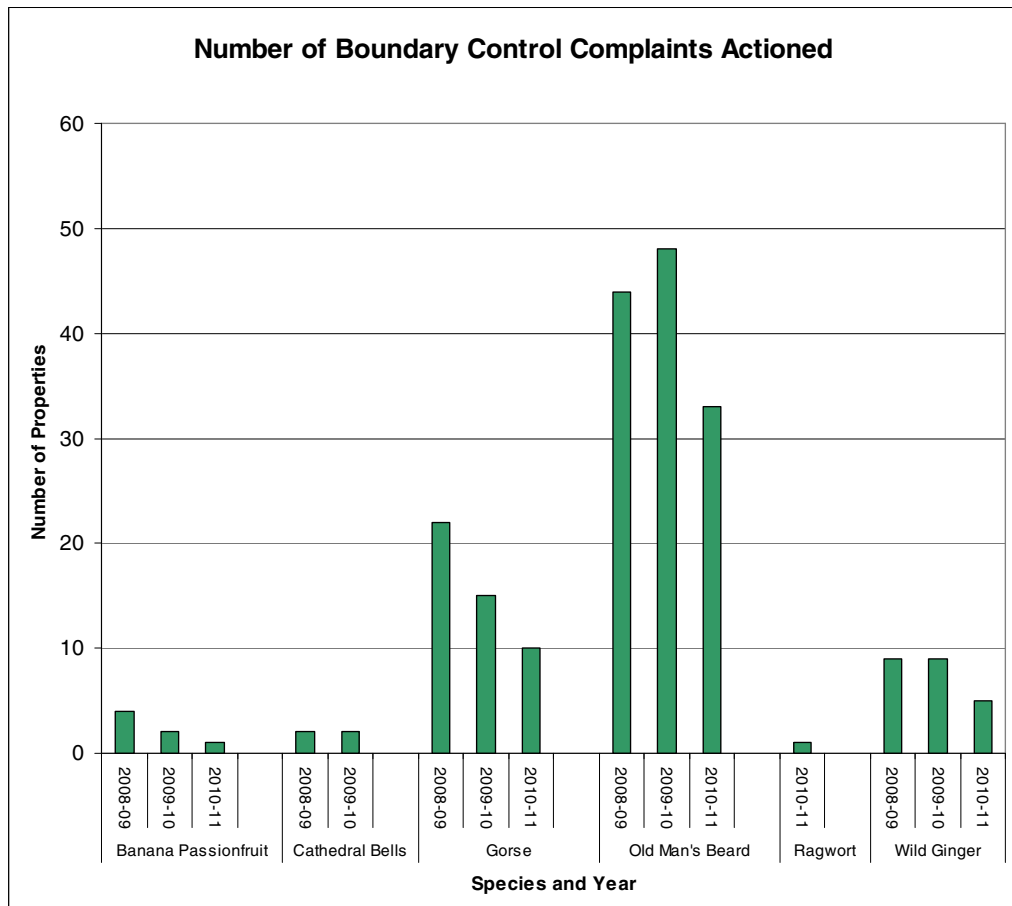
Means of achievement

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

Actual performance

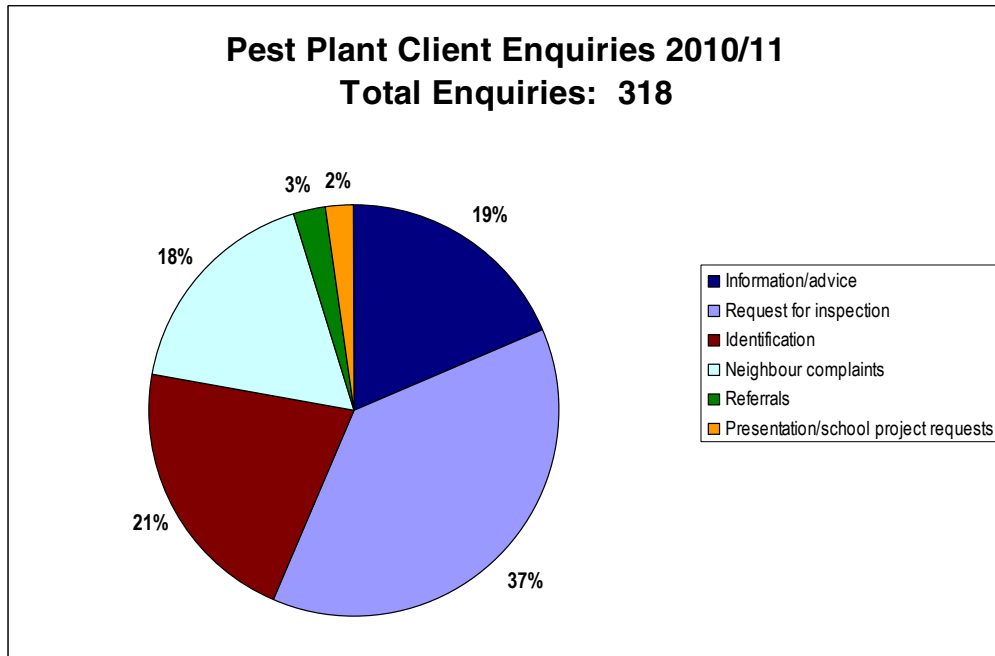
Staff responded to all complaints and client response requests this year.

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



8. Client response enquiries

There was a decline in enquiries for 2010/11 which may be attributed to the public utilising information available off the GW website. A total of 318 enquiries were received.



Means of achievement

- (i) 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

Please refer to Section 10 'Public awareness' for more information.

Means of achievement

- (ii) 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

Please refer to Section 7.1 'Surveillance (NPPA inspections)' for more information.

Means of achievement

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

Please refer to Section 9 'Biological control' for more information.

8.1 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 \$533,610

Annual cost: The cost to GW to manage KNE species was \$635,733, with an additional \$50,737 for monitoring

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

Templates for integrated pest management plans have been developed to draft form in collaboration with the newly formed Biodiversity department.

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 56 contracts were completed. Over 2,000ha of reserves received work. An estimated 23.6ha of weed cover was controlled consisting of 12.8ha of climbing species, 6.8ha groundcover and 4ha of woody weed species.

Reserves were worked collaboratively with TA's or DOC under three-year Memorandum of Understanding (MOU) agreements. The total funding pool is assigned to the top ranked sites on a 10-year rolling plan. New sites receive resources as inputs to current sites are reduced. Outcomes are measured annually and future resource allocations are then reviewed.

Staff spent time on restoration activities such as supporting care groups prior to planting or supporting pest plant release operations using chemical sprays. Staff were active in assessing new sites with TA's and private owners and providing restorative advice and assistance for external funding 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	Hayward	Keith George Memorial	Tauherenikau Bush
	Waikanae Reserves	Porirua Park Bush	Seton Nossiter		Witako	Rewanui
	Forest Lakes		Trellisick Park		Flux covenant	Bagshot covenant
			Khandallah			Pigeon Bush
Dunelands	Waitohu Dunes	Onepoto		Pencarrow		Riversdale Dunes
	Paraparaumu Dunes			Eastbourne		
	Otaki Dunes					
	Pekapeka dunes					
	Waikanae Dunes			Petone		
Escarpments	Paekakariki Escarpment	Pukerua Bay Escarpment	Mapuia			
			Te Kopahau			
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)					
					Moehau Stream	
Estuaries	Waikanae Estuary		Makara Estuary			
	Otaki Estuary					

Note names in [Blue](#) are private covenants

Johnsonville Park - hollies and pines



May 2010 - trees ring barked winter 2008



May 2011 - trees ring barked summer 2010

Means of achievement

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

Actual performance

Close liaison was maintained with Environment Take Care co-ordinators on sites across the region. GW Biosecurity staff worked with a number of volunteer groups during the year including participation in a number of community planting days.

Please refer to Section 13 'Other' for more information.

Means of achievement

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

Actual performance

Staff provided assistance to the Land Management department with dune restoration at Riversdale and Whangaimoana, including the provision of eco-sourced seed and participation in community planting days. Staff worked collaboratively with Forest & Bird, Land Management and the Flood Protection departments on the Mangatarere river catchment. Collaborative work was done with other departments in site preparation for the Catchment Management planting day at the Lake Wairarapa. Staff assisted DOC with hornwort control at Boggy pond and the control of mouse-ear hawkweed, *Hieracium pilosella*, in the Wairarapa. Staff also managed the aerial gorse spraying operation at Whitireia Park and provided assistance to the Trentham Ecological Group, a new care group made up of Defence Force personnel working on restoration of a wetland in Trentham. Staff managed Corrections Department workers on restoration weed control on the Waikanae River in partnership with Flood Protection. Staff worked with the NZ Native Restoration Trust and arranged ground control and aerial trials on wilding pines in the Rimutaka Range.

Means of achievement

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

Actual performance

Please refer to Section 9 'Biological control' for more information.

Means of achievement

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

Actual performance

Weed calibration and recording has been developed for weed work in KNE's and reserves and is a requirement for all weed control operations. Some sites received intensive outcome monitoring (e.g. Tauherenikau) where indigenous species seedling establishment and species site occupancy is recorded as ecological indicators. This continues as 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 risks pest plants pose to surrounding restoration areas. An intensive survey and advocacy project was conducted on properties bordering the Hayward Scenic Reserve. Information pamphlets were delivered to these areas and resources supplied to help raise local awareness. Articles focusing on environmental weeds of interest were offered to newspapers, council publications and made available on the GW website throughout the year. Staff relayed advice and information about pest plant pressures via presentations and attendance at shows and field days.

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

Please refer to Section 10 'Public awareness' for more information.

Means of achievement

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

Actual performance

Pest plant and animal control was achieved in all currently managed KNE's as per MOU with TAs. The role of holistic ecological management has been taken over by the newly formed GW Biodiversity Department. This department's recent Biodiversity Strategy outlines key regional priorities and will promote improved cohesion of pest plant and animal control in KNE's across the region.

Means of achievement

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

Actual performance

Biosecurity staff regularly met with TA representatives. Staff were assigned responsibility to reserves within their area and maintained close liaison with TA and GW Take Care staff. Annual discussions were completed to allocate resources under a 10-year plan. MOU agreements are in place for each TA that have resources allocated to reserves of interest to GW. TA's contributed \$49,300 to the programme.

9. Biological control

Biocontrol had an active and successful programme this year with particular reference to the green thistle beetle and buddleia leaf weevil having established, with evidence of significant damage and starting to spread naturally. The buddleia leaf weevil is looking very promising as heavy damage was noted within a short time after release. This agent appears to build-up in numbers quickly and establish easily from transfers of low numbers of individuals. Other activity this year targeted higher priority agents that have been harvested and transferred, purchased or given to GW by various suppliers. Successes were also experienced in awareness raising and promotion, with a high level of interest expressed by the public and increasing support from TA's and other organisations.

9.1 Biological control activities

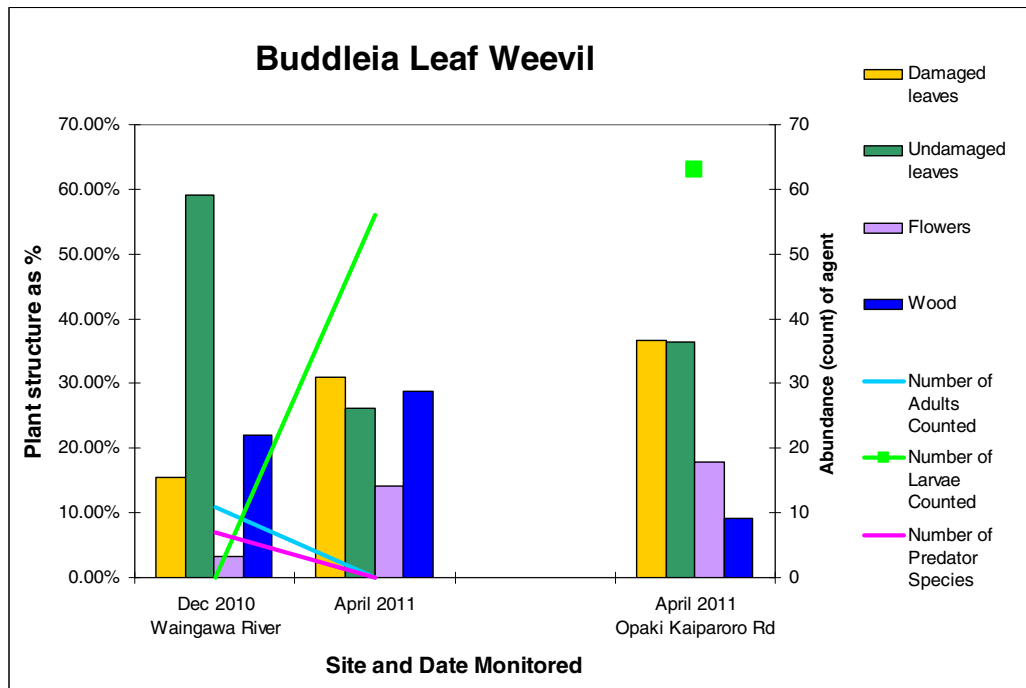
9.1.1 Monitoring

Monitoring of boneseed leaf roller release sites was reduced to twice a year due to the low numbers of this agent.

Monitoring of buddleia leaf weevil continued with good results seen at two new release sites in the Eastern zone. The leaf weevil is a very promising agent with high levels of damage seen within just three to four months from release. Monitoring at the two original release sites in the Western Zone ceased due to continual destruction of the sites by road maintenance operations.



Monitoring at release site Opaki-Kaiparoro Road; buddleia leaf weevil damage visible in the front centre



Monitoring of the gorse pod moth ceased in April after the experimental period came to an end. Monitoring had been conducted monthly since September 2009 as part of a PhD thesis.

Random survey of gorse thrips was conducted to gain data on their distribution. Transfer of this agent will be programmed once distribution information is secured.

Analysis of a sample of mistflower by Landcare Research confirmed that the mistflower fungus is present after release at a site in Wellington. The fungus is yet to establish to significant levels but will be transferred to other mistflower sites once sufficient material is available.

9.1.2 Releases

A second release of broom gall mite was made in December. No sign of galls were seen at the 2009 release site. Monitoring will continue.

A free batch of buddleia leaf weevil was obtained from SCION (formerly Forest Research Institute) and released in Wairarapa. Due to its early success it has subsequently been used as a harvest site for a further release.

A second release of the Californian thistle stem miner was made and monitoring for establishment is to continue into next year. It is expected Californian thistle stem miner will be a valuable agent when acting alongside the Green thistle beetle against this pest species.

Work has been conducted on the selection of suitable sites for the imminent release of Tradescantia leaf beetle. Preliminary discussions were held with TA's regarding options for the purchase and release of this promising agent. A high level of public interest has been expressed in the beetle.

9.1.3 Transfers

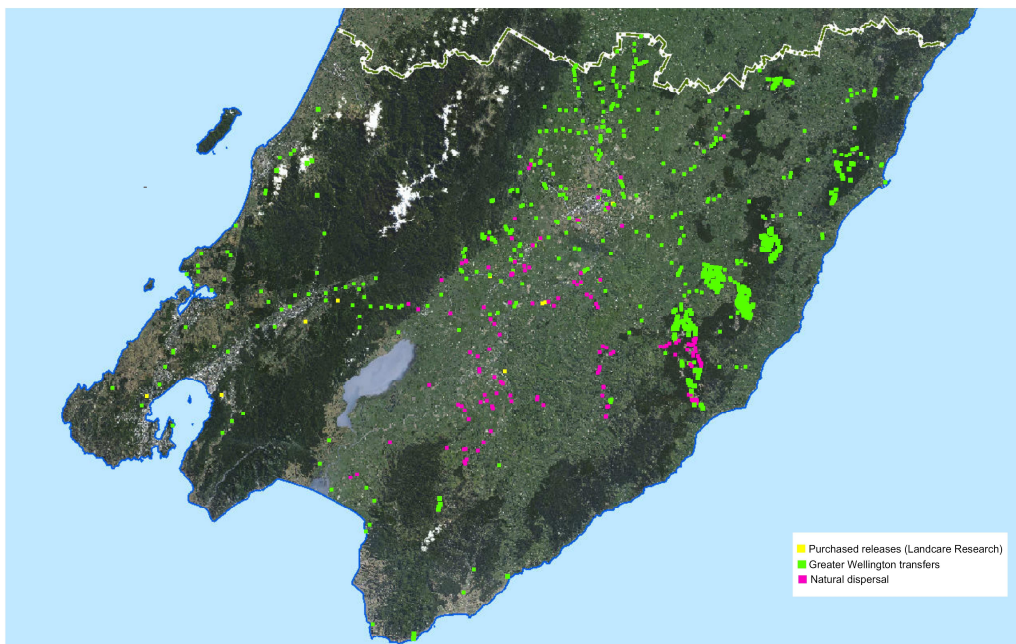
A total of 248 transfer/releases were made of broom psyllid this year, predominantly in the Eastern Zone. It is aimed to have total coverage of this agent in the Eastern Zone by 2015. A second agent, the broom seed beetle, has proven to be very widespread and most transfers of psyllid have also contained this agent.

A number of ragwort flea beetle transfers were made in response to client requests. Staff participated in a national survey of original release sites managed by Landcare Research. Very positive comments were made by the landowners in regards to the impact of the flea beetle, for example “*simple, consistent, reliable*”, “*environmentally brilliant*”, and “*best biotechnology available*”. Landcare Research will be analysing the results of the landowner survey to provide important outcome monitoring data for biocontrol.

The green thistle beetle established successfully at Rangitumau with a large amount of damage easily seen on targeted plants. Fifty beetles were transferred to a second site on Bennetts Hill, east of Masterton. Client enquiries and requests for the green thistle beetle continued in the region as a useful agent against Californian thistle.

Five transfers were made of the Scotch thistle gall fly harvested from the Paekakariki Hill and Belmont Hill sites. Both these sites now have good numbers of infested seed heads which will be useful for future harvest and release.

Almost all smilax sites in the region received transfers of smilax rust infected material. The current successful infestation rate is 75%.



Broom Psyllid Sites.
Greater Wellington Regional Council.

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Table 2 summary of all biocontrol agents released in the Greater Wellington Region since 1988

	First released	Total number of known sites	Overall agent status	Status of release sites					
				Established	Recovered	Status uncertain	Not yet monitored	Sites destroyed	Failed
Boneseed agents									
Boneseed leaf roller	2007	8	Suspect failure					1	7
Broom agents									
Broom gall mite	2009	2	uncertain			2			
Broom leaf beetle	2009	1	uncertain			1			
1 beetle has been found 12 months after release									
Broom psyllid	1995	11	widespread	11					
Broom seed beetle	1994	1	widespread	1					
Broom shoot moth	2008	2	uncertain			2			
Buddleia agents									
Buddleia leaf weevil	2007	3	established	3					
Gorse agents									
Gorse colonial hard shoot moth	2002	4	failed						4
Gorse pod moth	1997	11	widespread	11					
Gorse soft shoot moth	2007	4	uncertain			1			3
Gorse spider mite	1989	8	widespread	8					
Gorse seed weevil	1930's		widespread				x		
Gorse thrips	1990	15	widespread	15					
Mistflower agents									
Mistflower gall fly	2001	2	established	2					
Mistflower fungus	2009	1	uncertain			1			
Old man's beard agents									
Old man's beard leaf fungus	1997	4	failed						
Old man's beard leaf miner	1995	5	widespread	5					
Old man's beard sawfly	2002	2	failed						2
Ragwort agents									
Cinnabar moth	2006	1	widespread						
Ragwort flea beetle	1988	8	widespread	8					
Thistle agents									
Californian thistle flea beetle	1994	2	Site destroyed by flood at release time					1	1
Californian thistle gall fly	2006	1	failed						1
Californian thistle leaf beetle	1993	3	Failed, all releases at same site						3
Californian thistle stem miner	2010	2	uncertain			2			
Green thistle beetle	2008	2	established	1	1				
Nodding thistle receptacle weevil	1972		established				x		
Nodding thistle crown weevil	1990	4	established						
Nodding thistle gall fly	2005	2	established	2					
Scotch thistle gall fly	2005	7	established	4					
Agents arrived naturally									
Smilax rust	2008	40+	widespread						
Smilax rust is widespread and being assisted with dispersal									
Lemon tree borer (native insect)			widespread						
Californian thistle rust			widespread						
Californian thistle blight			established						
Hemlock moth			widespread						
Broom twig miner moth			widespread						
Blackberry rust			widespread						
TOTALS:		127		56	1	9			21

9.2 Collective activity

Meetings were attended with the National Biological Collective to vote for funding allocation for projects into the New Year. Outcomes were:

Projects selected for funding in 2010/11

	Total Score	Rank	\$
Moth plant 1	42	1	62,500
Tradescantia 1	41	2	56,250
Pampas 1	39	3	20,000
Woolly nightshade 1	37	4	62,500
Tutsan 1	37	4	5,000
Japanese honeysuckle 1	37	4	37,500
Banana passionfruit 1	37	4	30,000
Lantana 1	36	5	25,000
Boneseed 1	35	6	15,000
Moth plant 2	35	6	80,000
Old man's beard 1	34	7	15,000
Wild ginger 1	34	7	50,000
Darwin's barberry 1	34	7	80,000
Chilean needle grass 1	31	9	30,000
Japanese honeysuckle 2	32	8	37,500
Alligator weed 1	26	11	15,000
Tradescantia 2	31	9	25,000
Banana passionfruit 2	31	9	30,000
Pampas 2	29	10	62,500

Projects selected for funding allocation in 2011/12

	Total Score	Rank	\$
Tutsan 1	37	1	5,000
Tradescantia 1	36	2	80,000
Boneseed 1	35	3	10,000
Old man's beard 1	35	3	12,000
Pampas 1	35	3	20,000
Japanese honeysuckle 1	34	6	80,000
Darwin's barberry 1	32	7	80,000
Moth plant 1	32	7	40,000
Nassella tussock 1	31	9	20,000
Banana passionfruit 1	30	10	80,000
Japanese honeysuckle 2	30	10	40,000
Wild ginger 1	27	10	70,000

Landcare Research continued to work on projects selected by the Collective. Projects are selected according to criteria:

- existing projects take precedence over new projects;
- an appropriate North/South Island balance;
- do projects need to go ahead for contributors to secure funds?

- do projects allow much bigger funds to be leveraged?
- projects involve overseas partners and would be much more expensive if undertaken at a later date;
- projects can be delayed a year or two without major consequences.

Setbacks to the programme were experienced as a result of the first Christchurch earthquake in September 2010. The containment facility at Lincoln suffered damage causing a number of agents to perish, including most of the banana passionfruit moths and the tradescantia beetles. This caused delays in the programme and some new importations of agents were needed. Fortunately the populations of tradescantia agents have now recovered successfully.

A positive response occurred in trials for broom where plants died as a result of gall mite infestation.

The Dung Beetle Release Strategy Group received approval from ERMA for the release of 11 dung beetle species. These beetles have the potential to instigate huge environmental and economic benefits through the processes of utilising and removing dung from pasture and rebalancing the pastoral system. The first releases in the country are expected in early 2012. The Group continues to seek additional financial support. GW will be promoting this initiative with the regional community.

9.3 Biocontrol training

Staff attended an Advanced Biocontrol workshop in March 2010. It was an important forum for obtaining research and development updates along with information on the status of agents in other regions. It is also a useful networking forum and provides the opportunity for sourcing agents from alternative organisations.

10. Public awareness

Total expenditure to support all response categories in the RPMS was \$67,488.

10.1 Communications plan

The communication plan was reviewed this year. The main change was around condensing the messages and audiences that the section advocates. Overall activity targets of the section for the 2010/11 year were again set and completed.

10.2 Articles

Articles continue to be the main form of publicity and the most efficient way of reaching a large audience. The uptake by newspapers this year was pleasing and it is hoped this will continue.

An article on the National Pest Plant Accord (NPPA) and buying plants for spring was released to the media. This was taken up by five newspapers region wide.

Articles were written on bomarea, purple loosestrife, Bathurst bur, saffron thistle, moth plant and blue passionflower for general media release. These were also listed on the GW website.

The short advertorials *Wanted: Pest Plant* continued in the GW magazine Our Region. This year houttuynia, woolly nightshade and bomarea were featured.

Following the discovery of several sites of *Nassella tenuissima* in Masterton an article on Nassella tussock in general was produced for the Wairarapa Times Age. No new sites of the species were found.

10.3 Presentations/shows

Biosecurity staff provided information to the public through:

- 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.

11. Financial summary

The year end result for pest management under the RPMS was an operating surplus of \$42,300 (2.6%). Revenue was up \$87,100 (5.7%) with operating expenditure up by \$46,900 (3.0%).

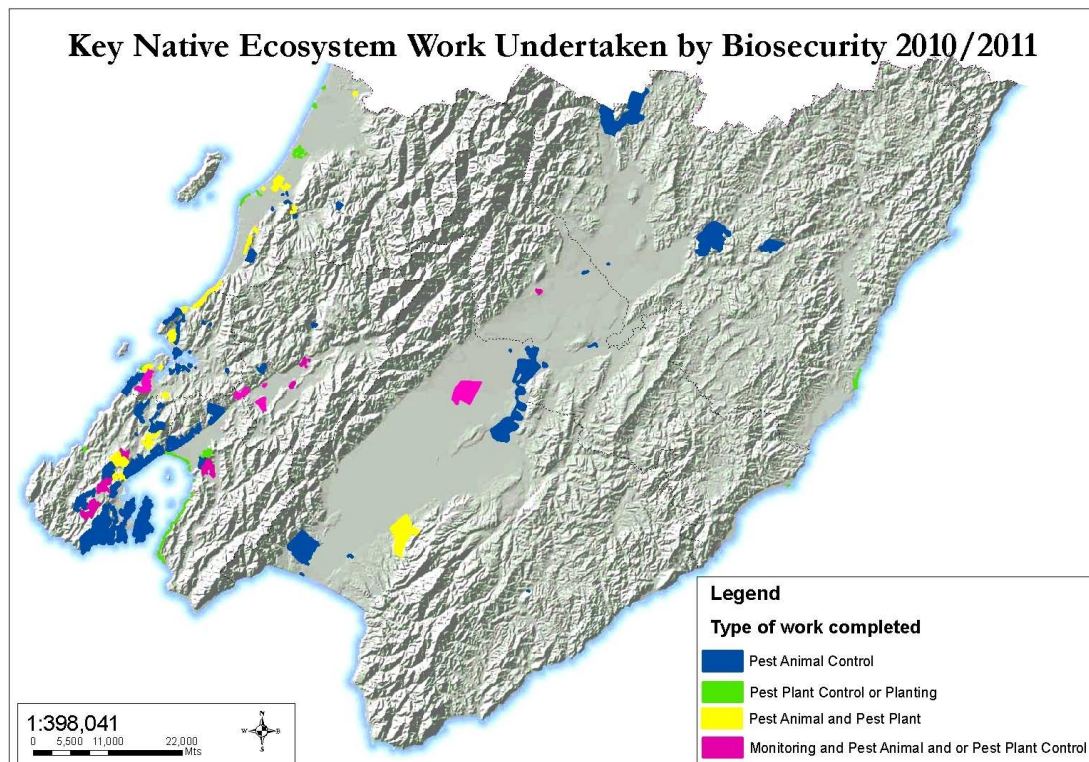
	\$ (000's)
Rates and Levies	1,475.7
External Revenue	102.0
Internal Revenue	67.1
Total Operating Revenue	1644.8
Total Direct Expenditure	1188.2
Divisional Overheads	414.3
Total Operating Expenditure	1,602.6
Surplus	42.3

Part Three

Biosecurity/Biodiversity – programme and monitoring

12. KNE Operations

During the 2010/11 year, 18,863ha of possum control was undertaken. This comprised 16 sites in the Wairarapa (10,383ha) and 76 sites (8,480ha) in the Western Zone. No initial KNE work was undertaken during 2010/11. In addition, nine sites (comprising 5,186ha) of GW Parks land was treated for possums and/or predator control as part of an ongoing forest health programme.

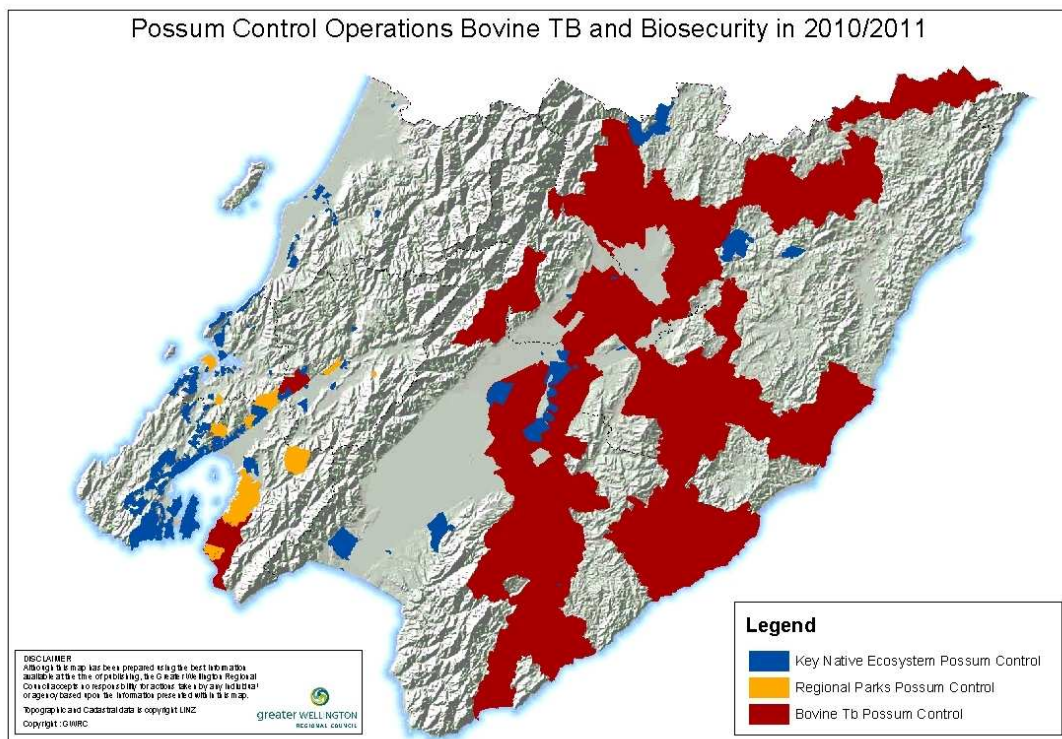
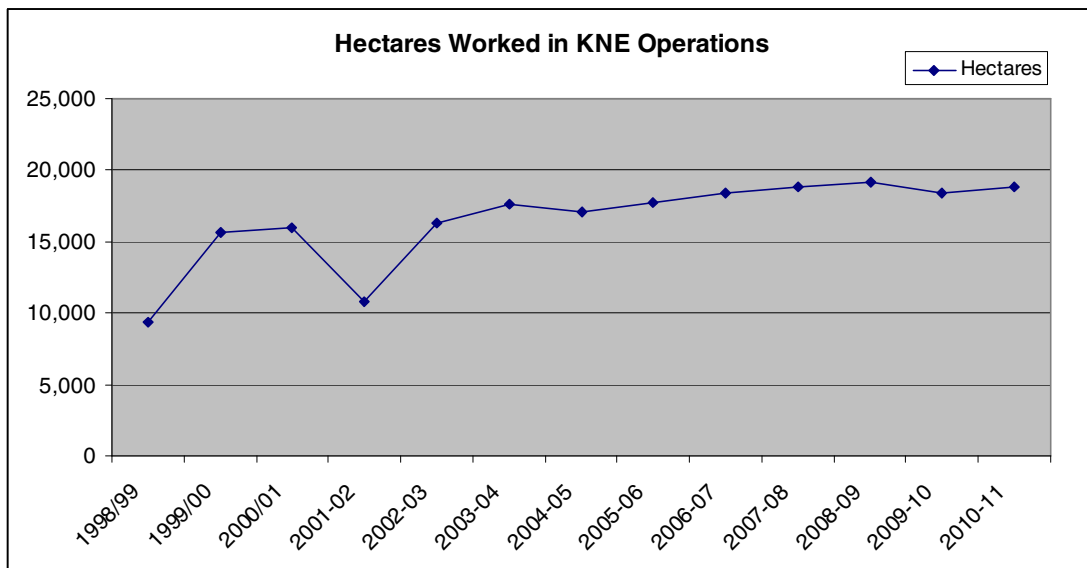


12.1 Possum and predator control

KNE maintenance operations

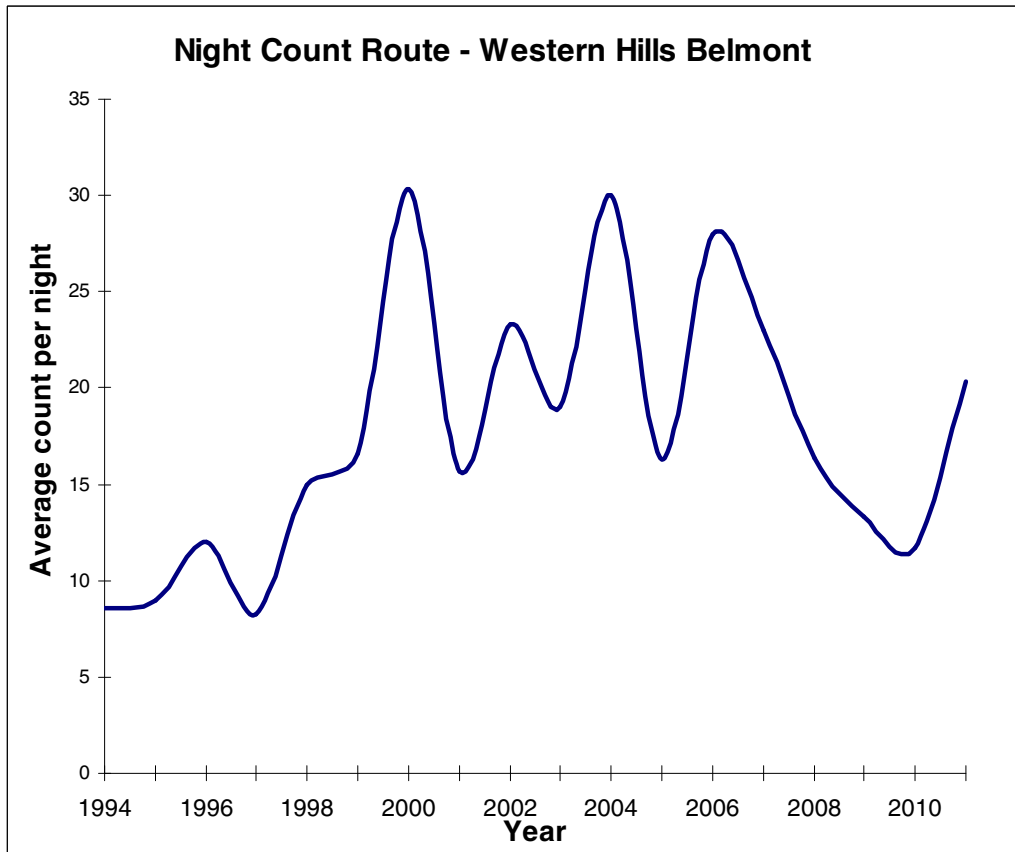
	Hectares work carried out by:			Total Hectares
	GW Staff	Contractors	Volunteers	
Kapiti	186	176	206	568
Porirua	1298	176	157	1631
Wellington	2,340	1,819	598	4,775
Lower Hutt	391	630	0	1,021
Upper Hutt	17	0	486	503
Sub total:	4,232	2,801	1,465	8480
Masterton	3	4,113	0	4,116
Carterton	193	0	30	223
South Wairarapa	4,931	1,089	24	6,044
Sub Total:	5,127	5,202	54	10,383

Operational hectares



12.2 Trend monitoring for possums

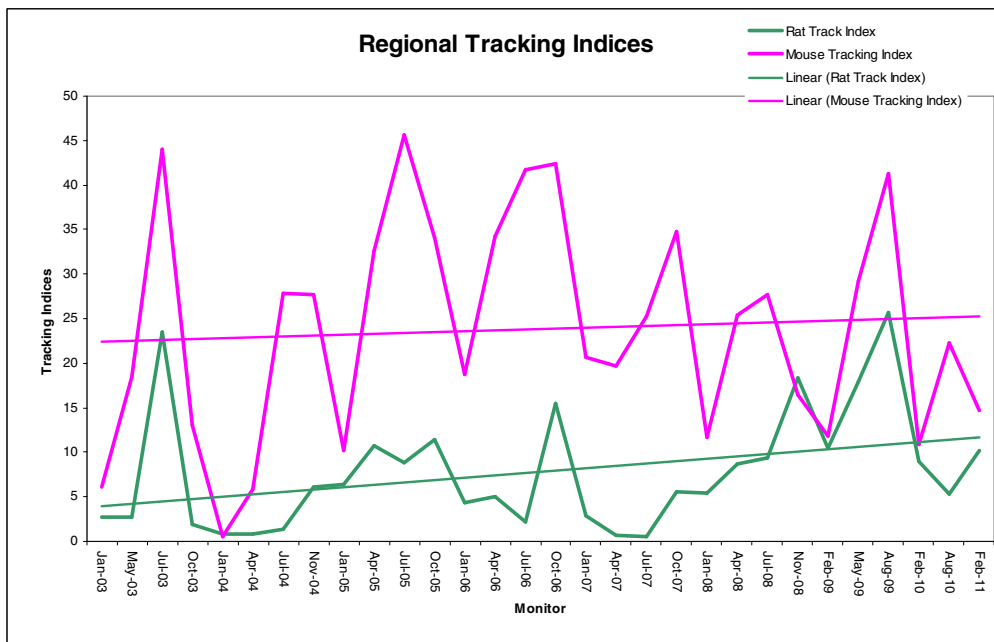
Trend monitoring for possums in the absence of formal possum control has been undertaken in Belmont Regional Park since 1994. The aim of the monitoring was to gain an understanding of possum abundance in the absence of formal control at these sites. For 2010/11 the number of possums counted increased.



12.3 Rodent monitoring in Key Native Ecosystems

Rodent monitoring has been undertaken since January 2003 to April 2011 and records response of rodent populations to:

- Intensive anticoagulant baiting for multi-species pest management; and
- Time/season.



Average-tracking rates for rats and mice in reserves

Multi-species pest control continues to effectively limit rat populations to low levels.

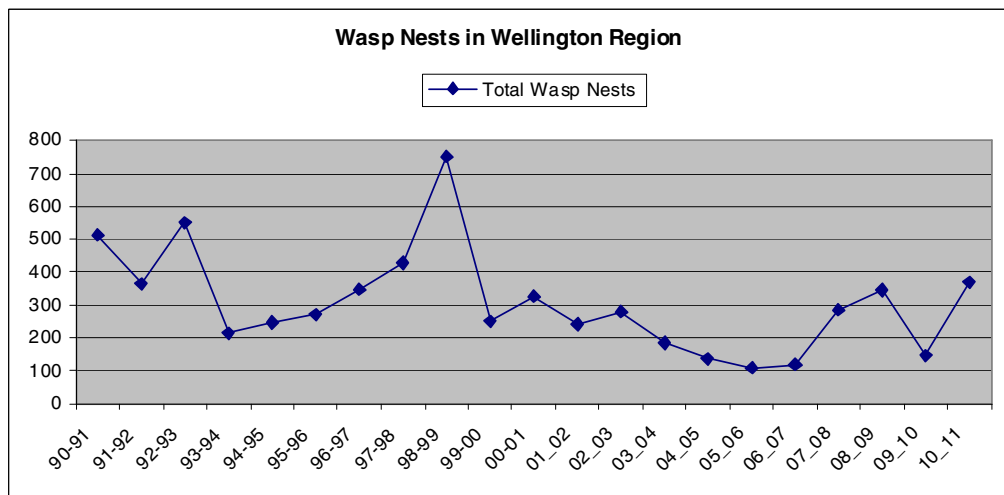
For 2010/11 the focus of the rodent monitoring has shifted from determining the efficacy of the current baiting regime to insuring that rats are at low levels at key times of the year. Rodents are now monitored twice a year during summer and winter. The summer monitor records the rodent levels during the bird nesting season and winter monitoring (historically the most active rodent season) gives staff time to implement further baiting before the next bird-nesting season begins.

12.4 Wasp Season 2010/11

Staff from all city and district councils, along with DOC and GW, who are involved in responding to wasp nest nuisance calls within the Wellington region, supply 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 are included in the RPMS in the Site-Led pest management category programmes - Human Health. The main reason for this is to require land occupiers to destroy wasp nests within their boundaries that create a human health hazard to other parties. This also allows GW to undertake necessary action(s) for monitoring and controlling wasps in the region.

Monitoring seasonal and annual changes across the region provides a valuable record. This is used to understand the seasonal influences on wasp population dynamics, and will be useful for any future control programmes.



Wasp nuisance trend for the Wellington Region

Interesting points from the 2010/11 season were:

- Hutt City reported a large number of nests this year, with many sites having multiple nests within close proximity, similar to 2008/09
- There was a reduced number of nests in the Masterton area during 2010/11, possibly due to the very cold weather

- Wellington City still has a good number of German wasp nests compared to the more prevalent common wasp in the rest of the region
- The peak period for wasps in the GW region was February through to March. This peak activity was earlier than the 2009/10 season.

12.5 Magpie monitoring in the Wairarapa

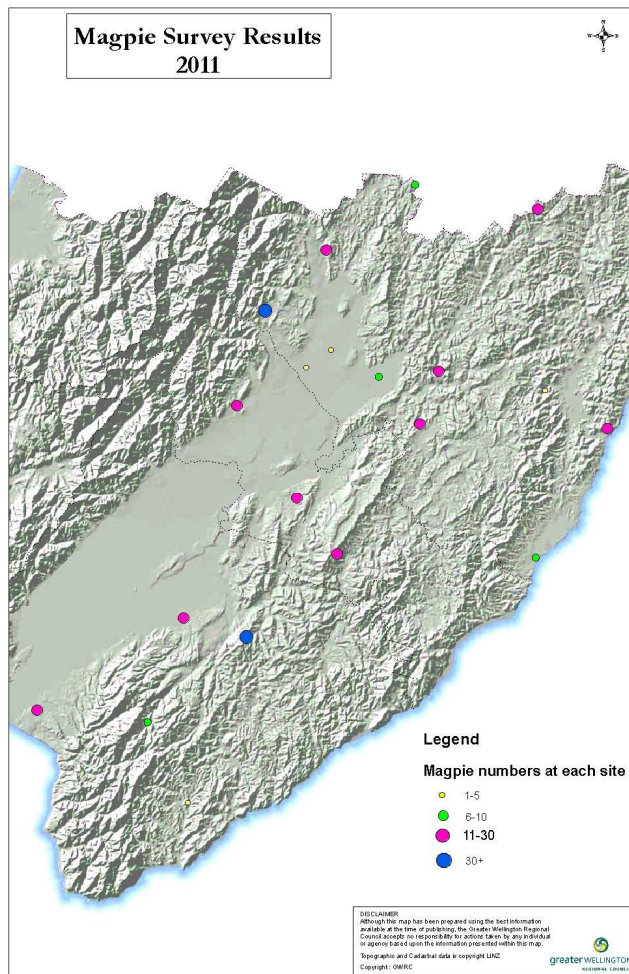
Introduced Australian magpies (*Gymnorhina hypoleuca* and *Gymnorhina tibicen*) are a pest species under the RPMS.

The magpie population study started in 2005 at 20 sites with a specific habitat type (open country within 50m of trees) in the Wairarapa that receives no formal magpie control. The aim is to annually 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 frequency of non-territorial flocks of roaming juveniles.

For 2010/11, 271 birds were recorded and is the highest number of birds disclosed to date during the survey. During 2010/11 there were two sites with large non-territorial flocks whereas previously there had been only one.

The following information was recorded:

- The average number of birds in small tribes (small breeding flocks of less than 30 birds) remained unchanged at around 10 birds.
- The average size of breeding tribes was 11 birds for 2010/11.
- All sites had birds reported in them for 2010/11 and two sites had large non-territorial flocks.



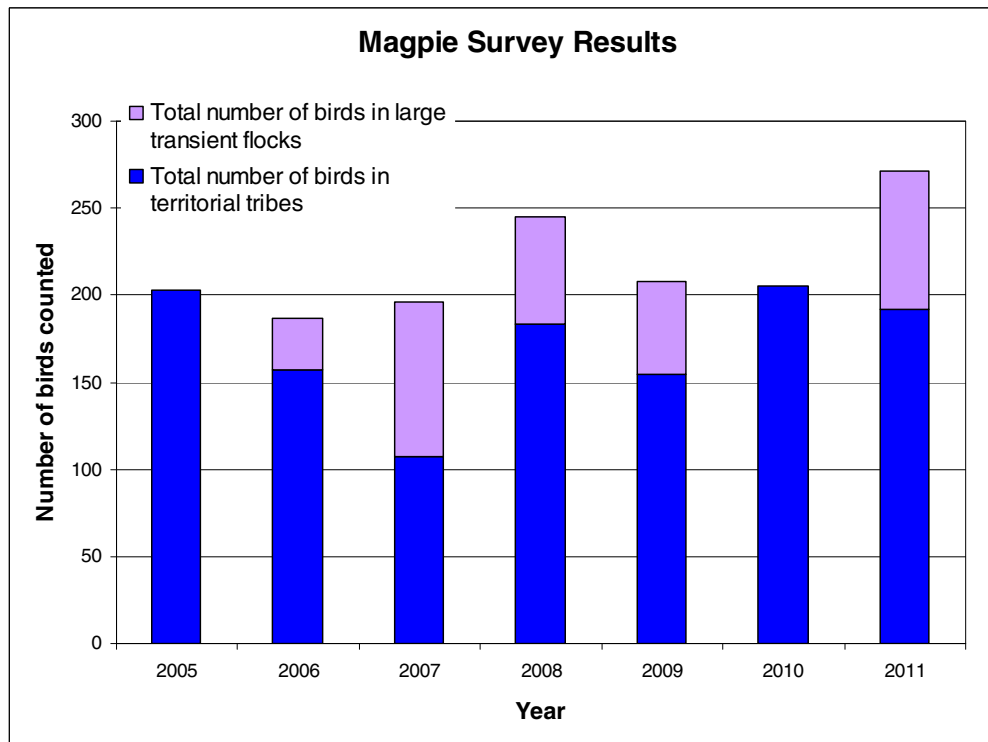


Chart shows the total number of magpies counted each year, and the number of those occurring in large flocks of over 30 birds

12.6 Native bird monitoring

Five-minute bird counts have been carried out in 20 parks and reserves around the Wellington region in order to monitor trends in the relative abundance of native birds at these sites in Spring 2009 and 2010. Between 3 and 20 bird count stations were surveyed in each reserve, with larger reserves containing more count stations. Please refer to Table 1. Bird count stations were located a minimum of 200 metres apart either at random locations or along randomly placed transects. Each bird count station was counted two or three times with each count being carried out on a different day. There was no bird counts carried out in Wairarapa reserves during spring 2010.

Table 1 - number of bird count stations and bird counts carried out in Upper Hutt Reserves, Wellington City Reserves, Porirua Scenic Reserve and Wairarapa Reserves in 2009 and 2010

Sub-region	Number of reserves	Number of bird count stations	Number of bird counts
Upper Hutt Reserves	7	28	84
Wellington City Reserves	9	95	194
Porirua Scenic Reserve	1	9	27
Wairarapa Reserves (2009)	3	15	44
Total	20	147	349

The four most abundant native birds in all parks and reserves across the sub-regions for both 2009 and 2010 were tui (*Prosthemadera novaeseelandiae*), greywarbler (*Gerygone igata*), silvereye (*Zosterops lateralis*) and fantail (*Rhipidura fuliginosa*).

Figure 1 - mean number of tui counted per bird count station in Upper Hutt, Wellington City Reserves, Porirua Scenic Reserve and Wairarapa Reserves, 2009 and 2010 (error bars show 95% confidence intervals).

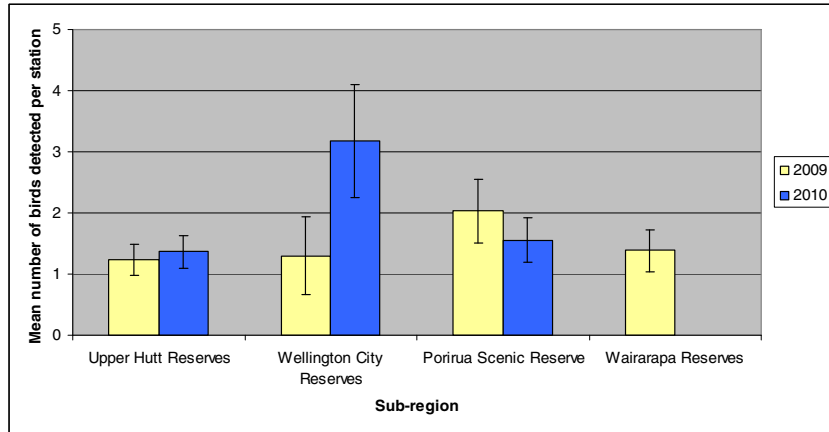
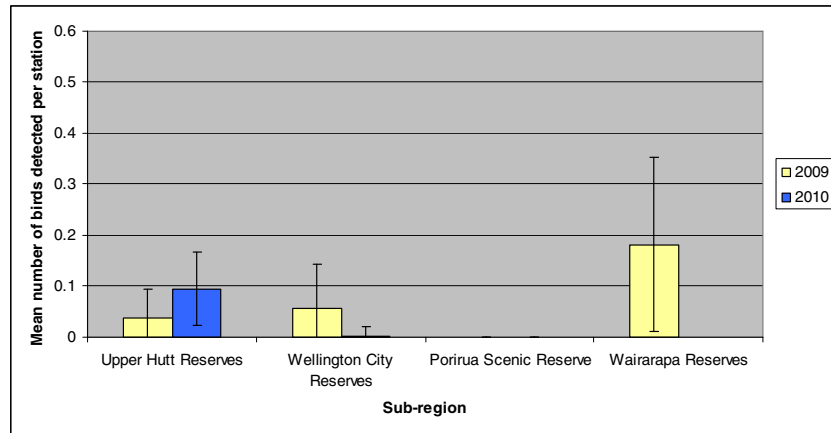
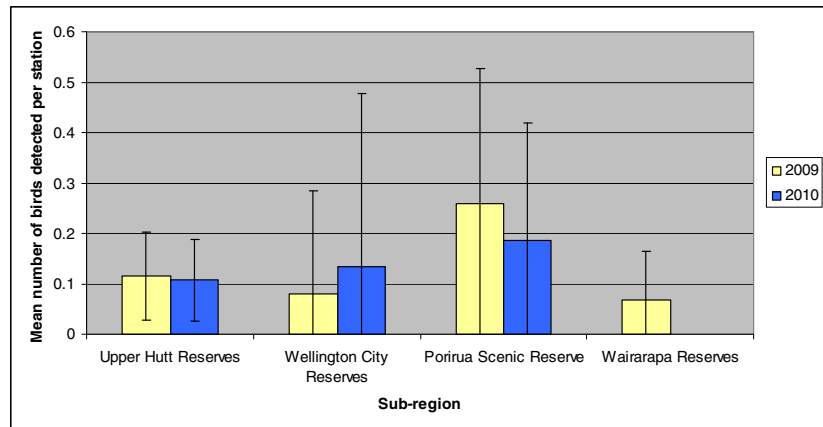


Figure 2 - Mean number of bellbird counted per bird count station in Upper Hutt, Wellington City Reserves, Porirua Scenic Reserve and Wairarapa Reserves, 2009 and 2010 (error bars show 95% confidence intervals).



Kereru were detected at low numbers in bird counts carried out in Upper Hutt, Wellington City, Wairarapa and Porirua Scenic Reserve bird counts. Kereru numbers did not vary significantly between any of these three areas in either 2009 and 2010.

Figure 3 - Mean number of kereru counted per bird count station in Upper Hutt, Wellington City Reserves, Porirua Scenic Reserve and Wairarapa Reserves, 2009 and 2010 (error bars show 95% confidence intervals).



Tui, bellbird and kereru are three native bird species that are known to provide important ecosystem services such as pollination and seed dispersal for a range of native plant species. It is promising then, that these species are relatively widespread among the parks and reserves in the Wellington region, and that tui in particular is the most abundant native bird species in these reserves.

12.7 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.

12.8 Pest Animals

12.8.1 Tapu Te Ranga Island mouse eradication

Wellington City Council asked for assistance to eradicate mice from Tapu Te Ranga Island in Island Bay, Wellington. A 25m grid of bait stations was set up on the island and fed with brodifacoum bait. The bait stations have been serviced three times, and the bait removed. The island will be monitored before being declared mouse free and the bait stations removed. Rat bait stations will remain on the island as rats can swim the short distance from the mainland. This is the first island mouse eradication that GW has attempted.



12.8.2 Rabbit training needs workshop - outcomes and next steps

The rabbit prone areas of New Zealand are experiencing a rapid rise in rabbits now that the Calicivirus immunity levels have increased after 14 years of random epidemic events. There are no longer enough experienced people with the skills to control rabbits, especially when large-scale aerial or ground poisoning operations are required.

Workshop participants, experienced in rabbit control and drawn from NZ Landcare Research and the Otago, Canterbury, Wellington and Horizons Regional Councils worked with a facilitator to produce an outline of training needs for those engaged in rabbit control.

Four main areas were identified:

1. Assessing the need for control;
2. Carrying out the planning and design;
3. Implementing the field operations; and
4. Post-operational follow-up.

The main elements under each area were developed in more detail and cross referenced to available resources. It represents a framework on which the content of training course modules can be built and is a significant first step to getting pilot training courses started. Otago Regional Council has offered to host a training day in October 2011.

Progress was made on a general direction as follows:

- Training modules will be piloted in a number of regions using experienced council staff (or contractors as appropriate), starting with Otago in October 2011.
- The training course to be reviewed and evaluated after a number of pilot training sessions.
- Once the content has been reviewed and finalised, unit standards will be written with the view to using them as part of a national qualification in the NZQA framework. AgITO will be the first point of contact.
- In parallel, a rabbit accreditation section will be developed as part of the National Pest Control Agencies approved operator accreditation system in a similar way to the current system for possum monitoring.

Another issue requiring agreement is to agree on a common name and standard scale (the New Zealand standard) for rabbit abundance and negate the reference to differing scales. This is undoubtedly something that councils will have views on and will require input from the Biosecurity Managers Group.



Photo taken by Rob Suisted

12.8.3 Rook control workshop

A rook control workshop was held in June at Massey University to identify the most important research projects to improve control of rooks. The session was facilitated by Dr Phil Cowan (Landcare Research) and attended by representatives from Environment Waikato, Environment Bay of Plenty, Hawkes Bay, Horizons and Greater Wellington Regional Councils.

The workshop identified several work streams with recommendations from GW to focus on the following themes:

- changes in rook population characteristics as indicators of success;
- alternative control techniques at low density;
- better Surveillance tools; and
- rook movements;
- alternative bait formulations.



Photo taken by Rob Suisted

12.8.4 Kaka proofing bait stations

There are concerns from various regions of New Zealand that kaka are potentially accessing possum control toxins. These concerns have halted possum control at Mt Bruce in the Wairarapa and at Nelson Lakes. It is not considered a particular threat to the kaka in the Wellington region, with lead poisoning, vehicles and flying into windows posing more of a threat. Despite not presenting as a current problem for GW, there is a potential they may become a problem in the future as a result of increasing kaka population within the region.



GW is currently trialling bait station modifications and working with the Wellington Zoo to test these designs on captive kaka. It is very difficult to stop access by kaka while still allowing possums and rats to feed from the station. In sanctuary areas such as Zealandia and Mt Bruce (Pukaha) kaka are taught to feed from supplementary feeders, sometimes with cereal pellets, which are similar to toxic possum baits.

GW staff have tried various bait station designs on the captive kaka and taken video footage of their behaviour. The modified Baitsafe bait station has been successful at keeping the kaka out if set correctly. Trials will continue until a reliable solution can be found.

12.8.5 Rainbow lorikeets reported on Miramar Peninsula

Biosecurity staff were notified of a suspected sighting of a pair of rainbow lorikeets on Miramar Peninsula in late August. These invasive Australian parrots are an unwanted organism under the Biosecurity Act 1993, and are listed as a Surveillance species in the RPMS. They are not known to currently be in the Wellington region, but an illegally released population is managed by DOC and MAF Biosecurity in the Auckland region. Rainbow lorikeets are legally kept in captivity in the Wellington region, making an incursion likely.



Photo taken by G van Meeuwen, (DOC) Photo: © K A Rodgers 2004

Biosecurity staff notified MAF BNZ of the report and undertook an inspection of the area. No rainbow lorikeets were sighted, but native kakariki and the introduced eastern rosella are known to be in the area, so the parrots may have been either of these species.

12.8.6 Suspected grey squirrel

GW Biosecurity staff received a call from a British couple who were convinced they had seen a grey squirrel in their garden during the day. GW referred the call to MAF and offered our services to investigate. A Timms trap, two DOC 200 traps and a surveillance camera were set in the area. Only rats were detected on the camera and a ship rat was caught in one of the DOC 200 traps. After several weeks of surveillance MAF were satisfied that the animal was no longer in the area and was probably not a squirrel.

12.8.7 Dama wallaby in Pukerua Bay

GW Biosecurity staff were contacted in November 2011 by a member of the public who found a dead wallaby on the road in Pukerua Bay. Staff investigated the report and were shown photos of the wallaby, which had been buried.



Staff exhumed the wallaby in December, and sent away a sample for DNA testing to Landcare Research. The DNA results confirmed it was a Dama wallaby, which are found in the Bay of Plenty. A press release and leaflet drop was made by GW staff, with the hope more information would come forward on the wallaby. Staff fielded a variety of calls and queries including a lot of media interest. Despite the publicity no further useful information was gained.

It is suspected that someone dropped the wallaby carcass off from outside the region as a prank. This theory was further supported by reports of two more wallaby carcasses found in the Wairarapa and the Horizon's region around the same time. This incident consumed significant resources that could have been focused on other RPMS activities.

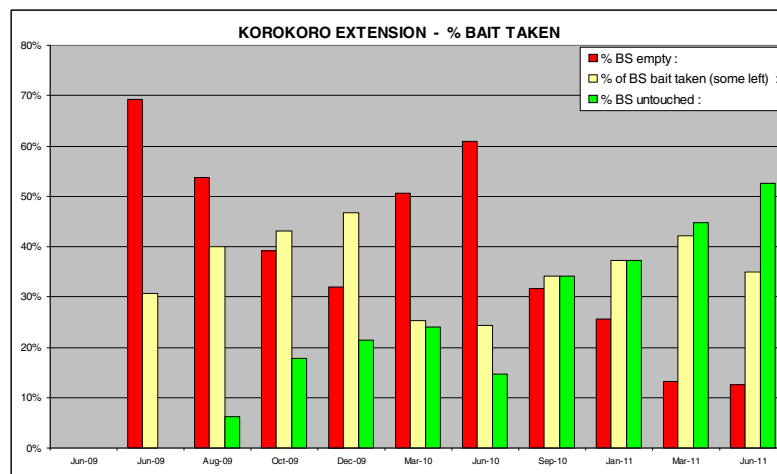


12.8.8 Bait station and trap data management

GW has had possum and rat control bait stations installed in the Wellington region since 1996. Until 2007 only basic data was recorded on the bait station system; the amount and condition of the bait left in the bait station from the previous fill and the amount of replacement bait. This basic data required a lot of manipulation before it could be analysed, and as a result only limited analysis was undertaken. In addition, the working maps and bait station numbering was inaccurate due to old GPS technology with incorrect signals.

In 2007 a decision was made to modify the system to provide more reliable information. The data recording system was adapted to allow computer analysis and incorporate additional data like man hours, status of poison signs and presence of weta into the data set. Maps and bait station numbering were also updated ensuring the information corresponded with what was happening on the ground. Exact bait station locations were documented using improved GPS technology.

An Excel spreadsheet was developed to store the information. This spreadsheet allows for easy analysis and access to the data. It also allows the person filling the bait stations to see what has



happened in the previous cycle, and to use the form to manually record data accurately in the field. This new method has improved efficiencies with navigation and data recording.

The data is summarised quarterly for each operation, to show regional and seasonal trends, and helps with decision making for planning the control programme.

The graph of bait stations in Korokoro Extension clearly shows a reduction in empty bait stations, and a corresponding increase in untouched bait stations. This is an indication of less possums in the area, allowing a change to toxins

which are more suitable for rodent control. This analysis allows accurate targeting of pest species, and the most efficient use of toxins.

12.8.9 Argentine ants

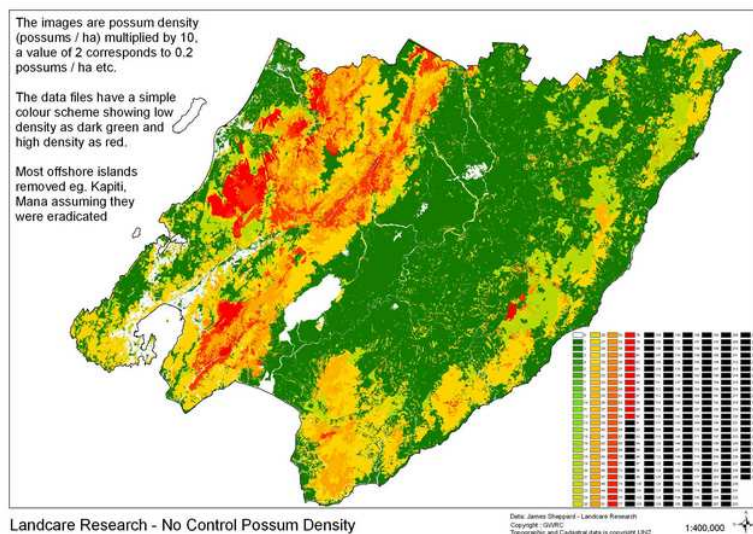
GW has contributed funding to trials on seasonal baiting of Argentine ants. Previously it was thought that Argentine ants should be baited in summer when they are most active, but trials by Richard Toft (Entecol Ltd) now suggest that more effective and longer lasting control can be achieved by baiting in spring.

Landcare Research have also launched a website for people to obtain information on Argentine ant control in New Zealand - <http://argentineants.landcareresearch.co.nz>. This is a useful resource for GW to refer members of the public to.

12.8.10 Greatest possum reduction in the Wellington Region

The New Zealand possum population has been quoted at an estimated 60–70 million since the 1980s. Landcare Research reassessed this population in 2010, creating an accurate estimation for both pre and post-control populations. This research showed a far lower figure of 48 million possums with no control.

With possum control efforts taken into account, the researchers estimated that there would “only” be about 30 million possums now, an overall reduction of approximately 36%. This reduction is conservative as it excludes



possums taken by commercial fur hunters, possum control in sanctuaries and other private conservation initiatives.

Possum control is currently carried out over a total area of approximately 13.3 million ha, about half of the total vegetated area of New Zealand. During 2008/09, around 9.8 million ha had control related to managing bovine Tb; 2 million ha were controlled by DOC for conservation purposes; and 1.5 million hectares was controlled by councils for production and conservation purposes. Approximately 8.3 million ha (62%) of the total area controlled is in the South Island.

On a regional basis Wellington had the greatest percentage reduction (87%), far ahead of the next nearest regions of Hawkes Bay, Manawatu/Wanganui and West Coast who had reductions greater than 50%. This figure is a clear indicator of the success of the Animal Health Board (Tb), GW and DOC possum control programmes.

12.9 Pest Plants

12.9.1 Whitireia Park aerial gorse control

GW Biosecurity managed the aerial gorse spraying project at Whitireia Park on behalf of the Parks department. A number of setbacks were experienced with inclement weather and a concerned Residents Association resulting in additional restrictions being imposed by an Environment Court order. The operation was achieved to a high standard with around 60 hectares sprayed over three separate operations. A re-spray planned in March-April of 2011 proved to be unnecessary due to insufficient re-growth and was postponed to November-December 2011.

12.9.2 Hayward Scenic Reserve buffer zone survey

A pest plant survey was conducted on 204 properties within a buffer zone bordering the Hayward Scenic Reserve in Lower Hutt. This was a pilot project to aid future planning and protect past and ongoing investment in the reserve by identifying pest plant threats in surrounding areas. The Hayward Reserve was selected as it is a Protected Natural Area (PNA) and KNE. It has high public access and has an active care group working to restore it.



Invasive climbing species bordering Hayward Scenic Reserve. HCC will be investigating the options for implementation of the recommendations in the survey report, in particular the commitment of pest plant control on private properties which surround significant natural areas.

Adjacent landowners with pest species received control information and advice on the purpose of the survey. The survey proved to be a very useful awareness raising programme with positive responses received from many of the landowners involved.

12.9.3 Wilding pine control trial

Two trials on aerial control of wilding pines were conducted in collaboration with the GW Parks Department and Lower Hutt City Council, one in the Rimutaka range and the other in the eastern hills of Lower Hutt. The trials were a replication of a successful wilding pine control programme developed by Scion Research in the South Island. While the method is known to kill 100% of trees up to 6 metres in height, the trial also included much larger trees in the hope that it will be effective here in Wellington with our better soil quality and kinder climate.

The results of the trials are to be monitored for effectiveness over the next 12 months.



Aerially controlled pines in the Rimutaka Range

13. Other

Biodiversity projects worked in partnership with other agencies

- **Community Max employment programme** – restoration work at multiple sites conducted by young unemployed people, subsidised by the Ministry of Social Development. Programme was completed by July 2010
- **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, Whitireia Park

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



Before blackberry control



After blackberry control

- **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 Forest Restoration Trust** – provided advice and small funding towards pest control at Pigeon Bush
- **National funding streams** - Ministry for Environment and DOC contributed funding for several projects in the region including; Waikanae Estuary, Te Harekeke (Kawakahia) and Te Hapua Wetlands, Otaki Estuary, Otaki River, Moehau Stream, Forest Lakes and Riversdale Dunes.



Volunteers working on Waikanae Estuary

Appendix 1

All Pest Plant Biodiversity Activity 2010/2011

Territorial Authority	Work Status	Priority Target Species	Stakeholders	Other
KCDC Bluff Hill		woody species; barberry	private	All survey, advisory and contract management
Devil's Elbow	1 st maintenance	multi-species	GW Biosecurity, KCDC	
Forest Lakes	Initial	blackberry, banana passionfruit, stinking iris	KCDC	
Nga Manu wetland	2 nd maintenance	multi-species	GW Biosecurity and Biodiversity-wetlands, KCDC	
Otaki Estuary	Initial	kikuyu, pampas, poplars, willow	GW Biosecurity, Flood Protection, Biodiveristy, SMF, Otaki Friends of the River, CCF	
O-Te-Pua wetlands	2 nd maintenance	willow, old man's beard	GW Biosecurity, private, NZTA	
Paekakariki Escarpment	3 rd maintenance	ivy, periwinkle, multi broadleaf species	GW Biosecurity and Biodiversity (coastal), KCDC,	restorative planting
Paraparaumu Dunes	2 nd maintenance	marram, broadleaf	GW Biosecurity and Biodiversity (coastal), KCDC, GW Take Care	
Peka Peka Dunes	3 rd maintenance	marram, boxthorn	GW Biosecurity and Biodiversity (coastal), KCDC, Take Care	restorative planting
Raumati Escarpment (Mataihuka)	5 th maintenance	multi-species	GW Biosecurity, KCDC	
Te Hapua wetlands complex	2 nd maintenance	acacia, blackberry	GW Biosecurity and Biodiversity (coastal), BCF	
Te Harekeke (Kawakahia)	4 th maintenance	blackberry, acacia, wilding pine	GW Biosecurity, BCF, MWH	
Te Horo Totara covenants		evergreen buckthorn	BCF, CCF, private	
Waikanae Dunes		marram, broadleaf	GW Biosecurity, KCDC, Take Care	restorative planting
Waikanae Estuary	3 rd maintenance	multi-species	GW Biosecurity, KCDC, SMF, Take Care	
Waikanae Reserves (Motuiti, Russell, Wi Parata)	3 rd maintenance	multi-species	GW Biosecurity, KCDC	
Waikanae River	3 rd maintenance	multi-species	GW Biosecurity and Flood Protection, KCDC	
Waimeha Lagoon	4 th maintenance	kikuyu, willow	GW Biosecurity, KCDC, Take Care	
Waitohu Dunes	3 rd maintenance	marram, broadleaf	GW Biosecurity, KCDC, Waitohu Stream Care Group	restorative planting

Territorial Authority	Work Status	Priority Target Species	Stakeholders	Other
PCC Ara Harakeke	Initial	woodyspecies, willow, brush, cherry, wilding pine	GW Biosecurity, Biodiversity, PCC	all survey, advisory and contract management
Karehana Bay	2 nd maintenance	climbers, climbing asparagus, jasmine	GW Biosecurity, PCC	
Onehunga Bay	2 nd maintenance/ initial	exotic grasses	Take Care	restorative planting
Porirua Park	4 th maintenance	Japanese honeysuckle, old man's beard, multi-species groundcovers	GW Biosecurity, PCC	
Porirua Scenic Reserve	5 th maintenance	multi-species, woodies	GW Biosecurity, PCC	
Pukerua Bay Escarpment	3 rd maintenance	boneseed, everlasting pea, succulents, woodies	GW Biosecurity, PCC, DOC	
Raroa Reserve	4 th maintenance	multi-species	GW Biosecurity, PCC	
HCC Eastbourne Dunes	3 rd maintenance	marram	GW Biosecurity, HCC, Dunes Care Group	all survey, advisory and contract management
Haywards Reserve	3 rd maintenance	woody species	GW Biosecurity, HCC, Friends of Waiwhetu	
Pencarrow Dunes	3 rd maintenance	marram, horned poppy	GW Biosecurity and Parks, HCC, DOC	
Petone Dunes	2 nd maintenance	marram	GW Biosecurity, HCC	
WCC Albermarle Stream	3 rd maintenance	release spray grasses	Take Care, WCC	all survey, advisory and contract management
Churton Park Stream	2 nd maintenance	ivy trail	Take Care, WCC	
Glenside Stream	2 nd maintenance	multi-species	Take Care, WCC	
Johnsonville Park	2 nd maintenance	woody species, holly, wilding pine	GW Biosecurity, WCC	
Island Bay Dunes	2 nd maintenance	Indian doab	WCC, Take Care	
Karori Stream	Initial	multi-species	GW Biodiversity (Streams Alive), Take Care, WCC	
Khandallah Park	Initial	edge multi-species mainly groundcovers	GW Biosecurity, WCC	
Makara	2 nd maintenance	gorse, multi-species groundcovers	GW Biosecurity, WCC, Take Care (makaracarpas)	
Mapuia	Initial	wilding pine, multi-species climbers, groundcovers	GW Biosecurity, WCC	restorative planting
Owhiro Stream	3 rd maintenance	multi-species	WCC, Take Care	
Paekawakawa Reserve		Pest Plant Management Plan	WCC, Island Bay Natural Heritage Charitable Trust	planning and advisory
Seton Nossiter	2 nd maintenance	Blackberry, Himalayan honeysuckle	GW Biosecurity, WCC	

Territorial Authority	Work Status	Priority Target Species	Stakeholders	Other
WCC contd Tarakena Reserve/ Ringitahu Reserve	Initial	karo, climbers, groundcovers	GW Biosecurity, WCC, Take Care	
Te Kopahau	Initial	boneseed, karo	GW Biosecurity and Biodiversity (coastal), WCC	
Trelissick Park	3 rd maintenance/ initial	tradescantia, Japanese honeysuckle	GW Biosecurity, WCC, Trelissick Park Group (Take Care)	
Waipahihi Stream	2 nd maintenance	preparation and release work	WCC, Take Care	
UHCC Keith George Memorial Park	4 th maintenance	multi-species, wilding pine, old man's beard	GW Biosecurity, UHCC	All survey, advisory and contract management
Moehau	3 rd maintenance	old man's beard, tradescantia, willow	UHCC, Take Care	
Hull's Creek/ Milliwood Estate	4 th maintenance	multi-species, preparation and release work	UHCC, Forest & Bird	
Witako	initial	wilding pine, acacia	UHCC	
SWDC Pigeon Bush	chemical trial	wilding pine	NZ Native Restoration Trust, DOC	All survey, advisory and contract management
Tauherenikau	5 th maintenance	tradescantia	GW Biosecurity, SWDC	track maintenance
Greytown Memorial Park	4 th maintenance	exotic grass, Tradescantia	GW Biosecurity, SWDC, Take Care	
Whangaimoana		marram	GW Land Management, SWDC	restorative planting
MDC Riversdale Beach	initial/ maintenance	marram, multi-species	GW Land Management, MDC	Advisory, seed collection and restorative planting

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